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Governor

Patrick O. Gottschalk
Secretary of
Commerce and Trade

COMMONWEALTH of VIRGINIA

William C. Shelton
Director

DEPARTMENT OF
HOUSING AND COMMUNITY DEVELOPMENT

MEMORANDUM

TO: IRC Sprinkler
Subgroup Stakeholders

FROM: Emory Rodgers, Deputy Director
Building and Fire Regulation

DATE: September 1, 2009

SUBJECT: Meeting – September 9, 2009

To prepare for the upcoming meeting and make it as productive as possible, the following materials are being placed on our website and sent to you as a link. Staff has compiled documentation on the many diverse viewpoints and issues from review. These documents are from numerous sources, including letters, past meeting discussions, code changes, public hearing testimony and other materials. Most of the issues have been discussed in some manner during the DHCD workgroups from March through June that reviewed with stakeholders the 2009 model codes and the 2006 regulations.

For this and future meetings the goal is to what stakeholders can agree upon. The task at hand will be fraught with emotions, differences of opinion and not always clear definitions and agreement on the problems, the solutions and the statistical data to support each option and the outcomes to be taken under consideration. There has to be a willingness to discuss options that are outside of whether there should be only mandatory or optional sprinklers.

There is a five page overview to be used as the agenda that tries to captures the many complex issues. There are no doubt other facts, reports, opinions, etc., can and will be brought forward. One of the expectations and charges by the BHCD is to be open minded.

I want to applaud all the testifiers at the July 27th public hearing for their professional demeanor and the civility that each person made in their presentations to the BHCD. DHCD looks forward to working with all stakeholders in this same congenial manner.

The meeting time is from 9:30 to 12:30 on September 9th. The meeting will be on the first floor of 600 East Main Street. The security guard will direct you to the conference room on the lobby level. Please advise Janice Firestone at janice.firestone@dhcd.virginia.gov on your planned attendance. Lunch is not being served. The attached list provides you with parking options that are nearby in a four block radius.

We look forward to seeing you on the 9th and working together on this very important issue.

DHCD, DBFR 2009 Code Change Process

September 9, 2009 at 9:30 a.m. at DHCD, First Floor Conference Room
IRC Sprinkler Sub-group Meeting Agenda

Introductions

Opening Remarks:

Data mining and facts: What can be agreed upon?

1. VDFP data for 2000-2008 for one and two-family dwellings: 38 deaths (average over nine years) and two firefighter deaths during this same time frame. NFPA fire data indicates there are on average 3,000 deaths per year nationwide with some 2,100-2,400 of those occurring in existing one and two-family homes. Will these numbers increase based on better reporting or would any increases be more attributed to the increases in population and housing stock so that the ratio of deaths, injuries and damages is proportionally the same or even less than five or more years ago? It is important to know what the scope of a problem is so you can then look at options that achieve the goals established and does so in a reasonable and cost effective manner. What is a reasonable set of goals for 10 or 20 years out from today? Would half the deaths and injuries be a reasonable outcome based on what might be in the 2009 or 2012 USBC and SFPC? **(Page 7)**
2. Reaffirm consensus not to mandate for manufactured homes?
3. Most common causes of fires: smoking; kitchen cooking; heating, fireplaces and heaters; electrical; and, candles/playing with matches. A large percentage of fires are reported as unknown causes. **(Page 24)**.
4. What is the age of homes experiencing the most fires such as pre-1973, post-1973 and post-1996? What lessons would be learned from such data that then could be used to amend the USBC and SFPC? **(Page 29)**
5. A large percentage of the deaths occur among the elderly over 55. **(Page 53)**
6. One testifier indicated fire damage averages $40,000. One testifier indicated flashover is occurring not in 17 minutes, but can be as low as three minutes today based on laboratory tests. Another person indicated five to eight minutes for the failure of lightweight framed trusses and joists with another testifier saying response times is from six to 13 minutes in urban/suburban areas and more in rural areas. Does the current VDFP data collection system collect the necessary data to support that there is a lower time for flashovers at these much reduced time frames and likewise for the failure of trusses and joists occurring in home fires today? If not, should this be done? Would one then draw a conclusion of the consequence being that home fires of the future are going to result in homes being essentially burnt to the ground by the time of the fire department arrival and that property damage is going to be significantly higher? **(Page 59)**
7. What is the number of existing one and two-family homes in Virginia? Census data should have this information. What is the average number of new homes

built the past 10 years and expected to be built over the next 10 years? What is the average statewide size of homes constructed in the past 10 years and projected for the next 10 years? Do we need to break out for fires in townhomes and detached dwellings and to do so by regions? Would this type of data be useful to our discussions? What resources are available to collect the data and what personnel resources and time might be expected to do so?

8. How many localities have adopted local ordinances to require existing homes to install smoke detectors per COV 15.2-922? Loudoun and Fairfax Counties have done so. Can we determine if such local ordinances have proven to be successful? One testifier stated an NFPA report indicated as many as 800 or more lives nationwide could be saved by mandating smoke detectors for all existing one and two-family dwelling units. Based on this national estimate, this one measure could translate into 10-12 lives saved and fewer injuries were there to be statewide adoption by all localities. Should there be a legislative change to mandate retrofitting? Would the cost per house would be in the $100 to $150 range? Many fire departments now give away free smoke detectors. Regardless of the sprinkler outcome, should the VDFP insurance monies for two to five years be allocated for one million dollars per year in grants to local fire departments and other approved local agencies and limit the free smoke detectors to those with lower incomes and the elderly? Could the state and local builder associations offer to fund some pre-determined amount?
9. Would HBAV and their regional associations pledge to have their members present the sprinkler option just like other upgrades to respond to the testifier who said he asked 25 years ago and it never happened? How could such a sprinkler option program be implemented by individual builders or done by the regional and state associations in some public type campaign? **(Page 83)**
10. How many localities have funded a full-time public education fire prevention program geared to the most at risk populations, children and the elderly? Have fire officials obtained, by new positions or from operational staff transfers, staff that would have fire prevention personnel resources equal to 10% of the fire department's staffing compliment? In some international studies there has been a positive impact with less injuries, deaths and property damages that can be achieved by public education and having adequate fire prevention staffing. What would be the local budget costs? How could there be more public and political support for fire prevention and education efforts? Can current data put a number on reductions in deaths, injuries and damages and what might these numbers be? Statistically, fires are approximately 10% of the incidents each year responded to by fire departments.
11. Is the estimate for arc-fault devices for bedrooms in the 2006 USBC and now for the 2009 USBC in each habitable room that 200 lives or two to three here in Virginia would be saved? The cost is disputed with electrical experts saying it costs several hundred dollars while builders say it is three or four times that amount. Arc-faults devices are now required in bedrooms and if approved for 2009 would be in all habitable spaces/rooms.
12. Recognize that since the 2000 IRC there have been new code provisions that do impact positively and provides means over the next 10-20 years to reduce home

fires, injuries, deaths and property damages in new and existing homes. NFPA and VDFP data does show that there has been a flat line and some trends slightly down that just 18 years ago were far higher as charted from the FEMA 8th edition of the Fire in the US 1983 to 1990.

13. Smoking: Reports from the NFPA CEO indicate that fire-safe cigarettes, and other testimonials during the 2008 General Assembly legislative session, can save upwards to 800 lives when fully adopted in all 50 states. Virginia's law went into effect July 1, 2009. The SFMO is to receive monies for enforcement activities. In Virginia would this one fire safety measure result in a decline of deaths by a quarter to a third: 10-12 deaths less per year in Virginia over the next 10 years mostly in existing homes? **(Page 90)**
14. Recognize that furnishings will reduce emergency exiting times and that lightweight construction could see an upward trend in fire damages, lost lives and increase injuries over some period of time that could be over the next 10-20 years.
15. USBC R310 for basement rescue and escape has exception incentive for basement egress when the home is sprinkled. This is in the 2006 USBC.

Costs: What can be agreed agree upon?

1. Fire services, based on NFPA and NIST studies, say the average final installation cost for sprinkler installations is $1.61 per square foot while builders and NAHB say it is $2.66 per square foot for mandated sprinkler installations. Most all agreed rural areas on wells would be higher but no agreement could be established as to how much more. For a cost- benefit analysis, can there be at least an agreement to say $2.00 per square foot so that a 2,000 square foot. home would be $4,000? We must consider factors such as regional labor costs, competition between sprinkler and plumbing contractors, number of homes built each year and whether the 2904 prescriptive standard would turn out to be less expensive. Also, will the public water purveyors not charge extra? **(Page 83)**
2. Insurance costs have a mixed comparison - in some cases savings were verified while others cases found no savings or savings so modest not to have much of an incentive or reasonable payback of some of the original installation costs. Should the stakeholders really spend much more time debating on this issue? **(Page 133)**
3. Can we get and do we need a better handle on longer term community and infrastructure costs? Several testifiers spoke directly to these costs on both sides. What cost value can we place on the disruption in family life, loss of possessions, health and medical bills and rental housing costs during reconstruction? What will be the governmental cost, if any, for maintenance inspections of installed sprinkler systems? Can fire departments shrink firefighting personnel resources in 20 years as fire calls will become even fewer that now for many urban and suburban department is only 10% of the total emergency calls? Can fewer fire stations be built, will fewer fire hydrants be necessary, and will the type and size of fire trucks change with less purchase and replacement costs? How can you integrate such possible savings into the short-term cost of building these homes and the owner's long-term mortgage payments and access to loans? **(Page 134)**
4. Rural areas with wells: Will there be a need for higher first time well installation costs to ensure adequate water supply and pressure in drought years? It seems

this may be the case from testimony by the industry and explains why the costs differences, debated by the fire services and builders, are far more pronounced than where there is a public water supply.

5. How do we place a value and equate for fewer lives lost and injuries with less property damage for the new code requirements, as noted by the builders, for these "modern homes", with non-sprinkler options? It is now required for post-1996 homes to post-2010 homes to include the connected battery back-up smoke detectors, better fire and draft stopping, CO alarms, arc-fault devices and energy measures that restrict intrusion of outside air into today's home. These code requirements are now being factored into the builder's costs that are in the purchase price of homes. Wouldn't each of these recently approved or new requirements have a positive impact on reducing home fires, property damages, injuries and deaths? The arc-fault devices projected cost is from a few hundred dollars to four times that number. Mandated CO alarms for 2009 could increase costs another $120 per home and might alert residents to depart before there is a fire incident besides the CO poisoning. Energy requirements would add nearly $1,000 to a home's cost and provide positive benefits for minimizing fire growth and flashovers by sealed ducts and better building insulation and draft stopping that restrict air penetration.
6. Fire services believe that home fires occurring in these new homes without sprinklers will be more costly in damages, and that more injuries and deaths will occur due to flashover from furnishings and lightweight construction for trusses and joists. What would be the statistical data projections from current data? Will the current national and state fire data start to see an upward trend based on furnishings and lightweight frame construction? Will these new code provisions referenced by the builders do the opposite and start a decline or will the fire data just be flat lined?

Code Changes, Legislation, Education: What can be agreed upon?

1. VBCOA to submit townhomes with incentives that should include current R310 and the 1 hour fire wall? **(Page 137)**
2. VBCOA to submit optional for detached and duplexes with incentives?
3. FSBCC, VFCAV, VFPA to submit mandated IRC sprinklers with incentives?
4. Code changes could be submitted to deal with the top causes of home fires or to deal with the fire services concerns with lightweight construction of flashovers? Require installation of fire extinguishers in kitchens as is done in some European and Asian countries successfully ; require to install the suppression canister over stoves/ovens; require to protect trusses and joists by sheetrock or other approved means that APA supports; require to allow in the SFPC routine inspections for smoke detectors, CO alarms and sprinklers; and, require to place into the SFPC some part of the IFC appendices for 503 and 508 fire access roads, fire flow and fire hydrants to have uniform statewide baseline standards that the fire services have under discussion only as a possible incentive package, but not as part of the SFPC. Some of these features along with those provisions already in the 2006/2009 IRC; the consideration of the impact on existing homes having smoke detectors; and, the impact of fire proof cigarette legislation might obtain faster

results in a more timely matter at a reasonable cost than mandating sprinklers for new homes? **(Page.141)**

5. One testifier asked to have considered his invention that shuts down the HVAC system noting it would positively affect or delay flashover. **(Page 173)**
6. Encourage and educate localities on value of adopting ordinances to retrofit existing homes with battery smoke detectors or should there be consideration on submitting legislation for a statewide mandate?
7. Gill proposed considering no sprinklers for one story homes and doing only those with two or more stories, greater than 2,000 square feet and less than 40 feet side yard separation distance or built of non-combustible construction.
8. HBAV code change to delete arc-fault for habitable spaces and leave only for bedrooms in the 2006 USBC/NEC. Is the cost $200 or $800? Will the impact on deaths, injuries and damages be as projected by the proponents? What is the consensus? **(Page 181)**
9. For anyone that may submit code changes, March 1st is the deadline, but staff encourages all code changes to be in by January 8th so that the BHCD members can see them prior to the 2nd public hearing set for January 25th.

What's Next?

- **Should further meetings pare down the sub-work group so that there would be representation by one person per group sitting at the table? Stakeholders have included VBCOA, VPMIA, VFPA, VFCAV, VC of C, PMPV, Va. Sprinkler Association, Va. AIA, Well Water Association, VIAFF, MHMA, AFPA, Va. IAEI, Vinyl Institute, PCA, VML/VACO. This is in itself a varied and very large group of stakeholders. Would a smaller group foster better the chances for consensus? How would a smaller work group be determined? How about something like one representative for code officials, fire services, builders, design professionals, consumers, local governments, passive material industry and active material industry work?**

Future Meetings

7-29-09 Revised

Board of Housing and Community Development: 2009 BHCD Regulatory Cycle Schedule and Meetings for the USBC, SFPC, VADR, VCS, MHSR and the IBSR:

March 19, 2009: Work Group 2 Administrative, technical amendments from the 2006 regulations and the SFPC meets

March 23, 2009: BHCD approves the publication of the NOIRA's for each regulation.

March 26, 2009: Work Group 1 Energy meets:

April 2, 2009: Work Group 3 model codes technical amendments meets:

April 9, 2009: Work Group 4 International Residential Code meets:

April 23, 2009: Work Group 1 Energy meets:

April 30, 2009: Work Group 2 Administrative, technical amendments and the SFPC meets:

May 6, 2009: Work Group 3 model codes technical amendments meets:

May 13, 2009: Work Group 4 International Residential Code meets:

May 18, 2009: BHCD's Codes and Standards Committee meets 1st floor board room at DHCD approximately 11:00 to 4:00 following the regular scheduled BHCD meeting.

June 22, 2009: BHCD's Codes and Standards Committee meets 1st floor board room at DHCD at 9:30 to 4:00.:

July 27, 2009: BHCD and Fire Services Board hold public hearing at 9:30, Codes and Standards Committee at approximately 11:00 to 12:15 and at 1:00 the BHCD meets to approve the draft regulations.
Meeting at VDHA in Innsbrook at 4224 Cox Road, 1st floor.

August to November, 2009: 60 day public comment period for the proposed USBC, SFPC and related regulations

November 16th to December 21st, 2009: BHCD's Codes and Standards Committee meets to consider public comments, carry-over code changes from the Work Groups meetings and any new code changes. Work Groups to meet same time frames with dates to be set this summer.

January 25th, 2010: BHCD and Fire Service Board hold 2nd public hearing.

February to April, 2010: Work Groups to meet with dates to be set this fall.

March 1, 2010: Deadline for 2009 code changes.

May 17, 2010: BHCD's Codes and Standards Committee meets to consider all remaining code changes and approve the final regulations for submission to the full BHCD. May need to meet in early June.

June 21, 2010: BHCD approve final regulations with input from the FSB.

Effective Date: September 30, 2010

Virginia Residential Building Fires
In 1-or-2 Family Dwellings

REPORTED FIRES PER YEAR

Year	#	%	RT Avg	%<=6	Loss Tot	Loss/Inc	Civ Inj	Civ Death	FS Inj	FS Death	Total Inj/Death	Inj/Death Per 1k Inc.
2000	3,777	8.8%	7:55	56.3%	$48,155,163	$12,750	194	26	107	0	327	87
2001	3,741	8.7%	7:52	56.9%	$47,998,062	$12,830	190	18	81	0	289	77
2002	4,718	11.0%	7:49	51.5%	$76,796,666	$16,277	249	24	112	0	385	82
2003	5,081	11.8%	7:48	49.3%	$204,634,885	$40,275	243	37	111	0	391	77
2004	5,070	11.8%	8:33	42.4%	$87,499,919	$17,258	234	71	96	1	402	79
2005	5,169	12.0%	8:02	42.5%	$107,836,293	$20,862	201	31	83	0	315	61
2006	5,362	12.4%	7:55	43.3%	$190,120,899	$35,457	202	40	80	0	322	60
2007	5,888	13.7%	8:00	42.2%	$139,928,586	$23,765	245	58	91	1	395	67
2008	4,266	9.9%	7:31	44.4%	$92,299,311	$21,636	159	36	81	0	276	65
Total	43,072	100.0%	7:57	47.0%	$995,269,784	$23,107	1,917	341	842	2	3,102	72

Source: Virginia Fire Incident Reporting System

Virginia Residential Building Fires
In 1-or-2 Family Dwellings

Reported Fires by Locality

(Jan 2000-Sep 2008 Combined)

County/City	#	%	RT Avg	%<=6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Accomack County	337	0.8%	9:02	21.7%	$5,944,760	$17,640	4	2	0	0	6	18
Albemarle County	349	0.8%	9:41	20.1%	$10,998,471	$31,514	3	5	2	0	10	29
Alexandria	228	0.5%	4:13	89.9%	$1,506,925	$6,609	14	0	1	0	15	66
Alleghany County	152	0.4%	7:14	46.1%	$2,228,740	$14,663	1	0	2	0	3	20
Amelia County	44	0.1%	13:44	6.8%	$1,761,600	$40,036	0	0	0	0	0	0
Amherst County	265	0.6%	13:00	7.6%	$1,997,860	$7,539	9	0	3	0	12	45
Appomattox County	68	0.2%	11:46	8.8%	$1,581,425	$23,256	0	0	2	0	2	29
Arlington County	294	0.7%	5:54	66.4%	$11,648,317	$39,620	4	1	9	0	14	48
Augusta County	766	1.8%	10:27	17.3%	$8,807,506	$11,498	8	5	10	0	23	30
Bedford	183	0.4%	10:47	15.3%	$2,365,100	$12,924	0	0	0	0	0	0
Bedford County	313	0.7%	12:08	17.3%	$4,111,701	$13,136	1	3	0	0	4	13
Bland County	57	0.1%	18:17	10.5%	$565,700	$9,925	0	0	1	0	1	18
Botetourt County	147	0.3%	13:23	13.6%	$611,350	$4,159	0	2	1	0	3	20
Bristol	237	0.6%	4:09	81.4%	$2,351,645	$9,923	17	1	26	0	44	186
Brunswick County	147	0.3%	12:15	10.9%	$2,071,350	$14,091	0	0	0	0	0	0
Buchanan County	78	0.2%	17:50	9.0%	$2,724,545	$34,930	3	2	0	0	5	64
Buckingham County	90	0.2%	13:44	12.2%	$423,500	$4,706	0	1	0	0	1	11
Buena Vista	77	0.2%	6:19	44.2%	$962,850	$12,505	1	1	1	0	3	39
Campbell County	416	1.0%	11:11	17.8%	$2,298,270	$5,525	0	3	0	0	3	7
Caroline County	98	0.2%	12:46	6.1%	$1,693,350	$17,279	0	0	2	0	2	20
Carroll County	165	0.4%	12:20	5.5%	$2,581,650	$15,646	1	0	2	1	4	24
Charles City County	48	0.1%	15:04	4.2%	$1,298,810	$27,059	0	1	0	0	1	21
Charlotte County	68	0.2%	12:29	7.4%	$2,061,235	$30,312	0	1	1	0	2	29
Charlottesville	370	0.9%	4:55	75.1%	$4,534,017	$12,254	29	2	9	0	40	108
Chesapeake	1,482	3.4%	6:15	49.3%	$27,607,978	$18,629	112	6	25	0	143	96
Chesterfield County	1,571	3.6%	7:55	18.5%	$28,002,405	$17,825	110	12	25	0	147	94
Clarke County	139	0.3%	11:09	13.7%	$1,919,780	$13,811	3	0	2	0	5	36
Colonial Heights	155	0.4%	10:10	50.3%	$1,358,685	$8,766	9	2	6	0	17	110
Covington	101	0.2%	6:06	40.6%	$1,088,854	$10,781	7	1	7	0	15	149
Craig County	34	0.1%	7:51	41.2%	$236,850	$6,966	0	0	0	0	0	0
Culpeper County	193	0.4%	12:39	8.3%	$6,368,852	$32,999	2	1	1	0	4	21
Cumberland County	21	0.0%	10:14	38.1%	$506,250	$24,107	0	0	0	0	0	0
Danville	723	1.7%	4:48	79.9%	$6,323,114	$8,746	45	2	10	0	57	79
Dickenson County	117	0.3%	19:20	4.3%	$2,892,720	$24,724	2	1	10	0	13	111
Dinwiddie County	115	0.3%	12:53	17.4%	$1,701,490	$14,796	1	1	1	0	3	26
Emporia	48	0.1%	6:56	39.6%	$830,500	$17,302	0	0	0	0	0	0

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(Jan 2000-Sep 2008 Combined)

County/City	#	%	RT Avg	%<=6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Essex County	45	0.1%	11:36	15.6%	$1,750,500	$38,900	2	7	1	0	10	222
Fairfax	106	0.2%	8:39	81.1%	$3,326,110	$31,378	4	0	0	0	4	38
Fairfax County	3,623	8.4%	10:43	69.1%	$134,750,299	$37,193	132	24	62	0	218	60
Fauquier County	450	1.0%	11:12	18.3%	$10,365,125	$23,034	5	1	5	0	11	24
Floyd County	126	0.3%	15:27	6.3%	$30,500	$242	0	2	0	0	2	16
Fluvanna County	20	0.0%	8:21	40.0%	$0	$0	0	0	0	0	0	0
Franklin	151	0.4%	5:46	55.0%	$1,495,310	$9,903	2	2	1	0	5	33
Franklin County	443	1.0%	10:54	28.0%	$7,996,310	$18,050	10	5	6	0	21	47
Frederick County	651	1.5%	9:47	26.7%	$3,367,186	$5,172	8	1	11	0	20	31
Fredericksburg	116	0.3%	4:25	81.0%	$1,666,799	$14,369	4	1	2	0	7	60
Galax	180	0.4%	10:46	8.9%	$1,013,550	$5,631	0	0	1	0	1	6
Giles County	79	0.2%	8:43	27.8%	$1,981,427	$25,081	2	2	0	0	4	51
Gloucester County	312	0.7%	7:49	31.8%	$14,033,707	$44,980	15	2	7	0	24	77
Goochland County	163	0.4%	17:06	7.4%	$1,089,656	$6,685	5	2	0	0	7	43
Grayson County	137	0.3%	15:41	7.4%	$24,040,050	$175,475	0	0	0	0	0	0
Greene County	71	0.2%	11:35	19.7%	$7,950	$112	1	0	0	0	1	14
Halifax County	290	0.7%	8:11	43.1%	$5,121,128	$17,659	1	1	0	0	2	7
Hampton	891	2.1%	4:17	80.0%	$10,095,269	$11,330	47	2	13	0	62	70
Hanover County	464	1.1%	10:11	16.6%	$7,072,697	$15,243	7	0	13	0	20	43
Harrisonburg	27	0.1%	4:58	66.7%	$93,205	$3,452	0	0	0	0	0	0
Henrico County	1,900	4.4%	5:52	47.8%	$34,214,671	$18,008	124	8	43	0	175	92
Henry County	424	1.0%	10:54	20.3%	$10,709,150	$25,257	7	9	5	0	21	50
Hopewell	363	0.8%	4:33	76.6%	$2,477,960	$6,826	26	2	4	0	32	88
Isle of Wight County	181	0.4%	7:26	37.4%	$3,062,237	$16,918	4	2	6	0	12	66
James City County	424	1.0%	6:08	50.5%	$10,807,821	$25,490	18	3	12	0	33	78
King and Queen County	30	0.1%	8:56	14.8%	$370	$12	0	0	0	0	0	0
King George County	150	0.3%	11:14	18.0%	$3,055,380	$20,369	5	2	4	0	11	73
King William County	25	0.1%	12:10	4.0%	$474,000	$18,960	1	0	0	0	1	40
Lancaster County	21	0.0%	7:09	33.3%	$571,000	$27,190	0	0	0	0	0	0
Lee County	226	0.5%	12:18	7.1%	$8,383,300	$37,094	3	7	0	0	10	44
Lexington	45	0.1%	7:43	33.3%	$1,816,774	$40,373	0	0	0	0	0	0
Loudoun County	610	1.4%	7:39	37.1%	$20,432,953	$33,497	32	0	25	0	57	93
Louisa County	203	0.5%	11:56	11.4%	$6,041,550	$29,761	1	1	0	0	2	10
Lunenburg County	64	0.1%	8:35	48.4%	$1,526,475	$23,851	1	2	0	0	3	47
Lynchburg	725	1.7%	3:55	88.4%	$5,413,160	$7,466	30	4	22	0	56	77
Madison County	116	0.3%	6:55	51.7%	$0	$0	0	0	0	0	0	0

Source: Virginia Fire Incident Reporting System

Virginia Residential Building Fires
In 1-or-2 Family Dwellings

Reported Fires by Locality

(Jan 2000-Sep 2008 Combined)

County/City	#	%	RT Avg	%<=6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Manassas	169	0.4%	5:02	67.5%	$3,661,455	$21,665	17	0	3	0	20	118
Manassas Park	50	0.1%	3:20	80.0%	$2,092,930	$41,859	1	0	0	0	1	20
Martinsville	210	0.5%	4:13	79.0%	$2,703,889	$12,876	19	3	3	0	25	119
Mathews County	59	0.1%	8:17	11.9%	$2,655,350	$45,006	0	0	1	0	1	17
Mecklenburg County	474	1.1%	7:37	43.7%	$4,082,145	$8,612	2	7	4	0	13	27
Middlesex County	13	0.0%	17:05	0.0%	$75,375,500	$5,798,115	0	0	0	0	0	0
Montgomery County	351	0.8%	6:57	49.0%	$3,924,355	$11,180	2	3	1	0	6	17
Nelson County	89	0.2%	15:55	13.5%	$1,809,700	$20,334	0	3	0	0	3	34
New Kent County	51	0.1%	10:00	23.5%	$5,700	$112	0	0	0	0	0	0
Newport News	1,116	2.6%	4:44	68.8%	$13,258,870	$11,881	108	11	20	0	139	125
Norfolk	1,260	2.9%	3:53	91.3%	$12,833,051	$10,185	74	6	68	0	148	117
Northampton County	64	0.1%	10:34	20.3%	$1,028,900	$16,077	4	2	0	0	6	94
Northumberland County	48	0.1%	11:06	10.4%	$1,850,450	$38,551	1	1	0	0	2	42
Norton	21	0.0%	6:34	42.9%	$47,500	$2,262	0	0	0	0	0	0
Nottoway County	78	0.2%	7:37	33.3%	$549,020	$7,039	0	0	1	0	1	13
Orange County	136	0.3%	12:41	11.8%	$2,124,220	$15,619	2	0	1	0	3	22
Page County	190	0.4%	8:37	36.8%	$2,430,200	$12,791	4	0	0	0	4	21
Patrick County	111	0.3%	12:11	10.8%	$3,023,520	$27,239	1	3	0	0	4	36
Petersburg	620	1.4%	5:00	67.1%	$5,421,666	$8,745	71	13	14	0	98	158
Pittsylvania County	461	1.1%	10:49	13.7%	$8,521,176	$18,484	4	4	2	0	10	22
Poquoson	76	0.2%	3:44	85.5%	$804,700	$10,588	1	0	1	0	2	26
Portsmouth	966	2.2%	5:41	70.9%	$11,188,075	$11,582	11	7	10	0	28	29
Powhatan County	172	0.4%	10:48	19.8%	$5,355,330	$31,136	10	2	8	0	20	116
Prince Edward County	103	0.2%	9:48	11.7%	$2,163,485	$21,005	4	4	0	0	8	78
Prince George County	202	0.5%	9:54	18.3%	$1,667,400	$8,254	1	1	1	0	3	15
Prince William County	566	1.3%	6:28	46.1%	$410,000	$724	2	1	0	1	4	7
Pulaski County	285	0.7%	5:49	60.9%	$5,805,807	$20,371	6	3	6	0	15	53
Radford	90	0.2%	4:05	80.0%	$1,557,272	$17,303	2	4	0	0	6	67
Rappahannock County	96	0.2%	12:39	9.4%	$2,859,607	$29,788	0	1	0	0	1	10
Richmond	1,951	4.5%	5:27	78.4%	$36,876,337	$18,901	172	26	70	0	268	137
Richmond County	6	0.0%	10:20	16.7%	$25,500	$4,250	1	0	0	0	1	167
Roanoke	928	2.2%	4:31	80.4%	$15,940,867	$17,178	69	9	23	0	101	109
Roanoke County	418	1.0%	8:34	20.1%	$6,214,973	$14,868	11	2	13	0	26	62
Rockbridge County	200	0.5%	12:59	16.0%	$1,732,450	$8,662	0	1	1	0	2	10
Rockingham County	483	1.1%	11:02	16.8%	$3,827,900	$7,925	10	0	5	0	15	31
Russell County	75	0.2%	11:34	18.7%	$1,188,150	$15,842	0	1	0	0	1	13

Source: Virginia Fire Incident Reporting System

Virginia Residential Building Fires
In 1-or-2 Family Dwellings

Reported Fires by Locality

(Jan 2000-Sep 2008 Combined)

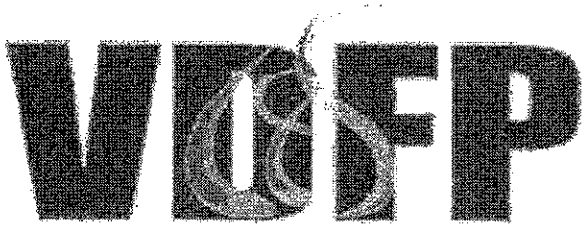
County/City	#	%	RT Avg	%<=6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Salem	117	0.3%	10:54	59.8%	$1,202,208	$10,275	7	1	6	0	14	120
Scott County	172	0.4%	13:53	18.0%	$3,680,300	$21,397	2	1	1	0	4	23
Shenandoah County	253	0.6%	12:34	18.2%	$1,964,210	$7,764	2	7	0	0	9	36
Smyth County	220	0.5%	10:46	19.1%	$3,378,470	$15,357	1	1	0	0	2	9
Southampton County	102	0.2%	9:51	13.7%	$1,847,650	$18,114	3	7	3	0	13	127
Spotsylvania County	658	1.5%	8:13	26.7%	$137,217,579	$208,537	28	3	16	0	47	71
Stafford County	246	0.6%	7:43	39.0%	$3,898,426	$15,847	5	0	2	0	7	28
Staunton	205	0.5%	4:19	77.0%	$1,172,231	$5,718	6	1	5	0	12	59
Suffolk	1,006	2.3%	5:23	63.6%	$11,600,775	$11,532	39	4	26	0	69	69
Surry County	31	0.1%	13:26	10.0%	$796,850	$25,705	0	1	2	0	3	97
Sussex County	83	0.2%	7:47	39.8%	$1,860,600	$22,417	1	2	2	0	5	60
Tazewell County	187	0.4%	8:49	28.3%	$2,905,660	$15,538	12	5	5	0	22	118
Virginia Beach	2,357	5.5%	7:40	29.6%	$60,609,930	$25,715	222	24	70	0	316	134
Warren County	95	0.2%	9:18	30.5%	$1,367,190	$14,391	5	3	4	0	12	126
Washington County	273	0.6%	12:13	7.7%	$5,477,100	$20,063	7	7	4	0	18	66
Waynesboro	197	0.5%	3:39	90.8%	$1,838,668	$9,333	10	3	4	0	17	86
Westmoreland County	110	0.3%	9:27	20.9%	$1,919,240	$17,448	1	0	2	0	3	27
Williamsburg	59	0.1%	4:26	78.0%	$309,675	$5,249	6	0	2	0	8	136
Winchester	223	0.5%	3:19	92.4%	$1,433,965	$6,430	18	0	9	0	27	121
Wise County	162	0.4%	9:41	34.0%	$2,906,055	$17,939	8	4	3	0	15	93
Wythe County	255	0.6%	9:44	22.4%	$3,973,380	$15,582	12	1	7	0	20	78
York County	325	0.8%	4:47	69.5%	$4,640,438	$14,278	29	0	11	0	40	123
Total	43,072	100.0%	7:57	47.0%	$995,269,784	$23,107	1,917	341	842	2	3,102	72

Source: Virginia Fire Incident Reporting System

Virginia Residential Building Fires

Number of 1-or-2 Family Dwelling Fires with Fire Confined to a Non-Combustible Container

(Jan 2000 - Sep 2008 Combined)



Confined/Non-Confined	#	%	RT Avg	%<=6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Building Fire - Not confined	30,189	70.1%	8:00	49.3%	$988,709,796	$32,751	1,749	340	824	2	2,915	97
Building Fire, Confinded	12,883	29.9%	7:51	41.4%	$6,559,988	$509	168	1	18	0	187	15
Total	43,072	100.0%	7:57	47.0%	$995,269,784	$23,107	1,917	341	842	2	3,102	72

Source: Virginia Fire Incident Reporting System

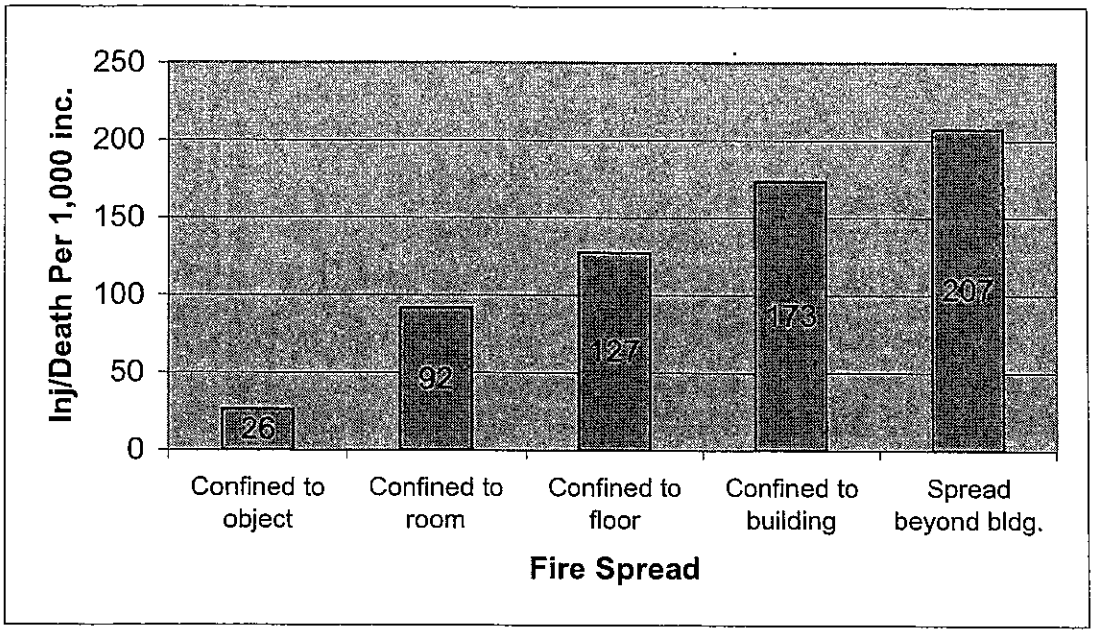
Virginia Residential Building Fires
In 1-or-2 Family Dwellings

Extent of Fire Spread

(Jan 2000 to Sep 2008 Combined)

VDFP

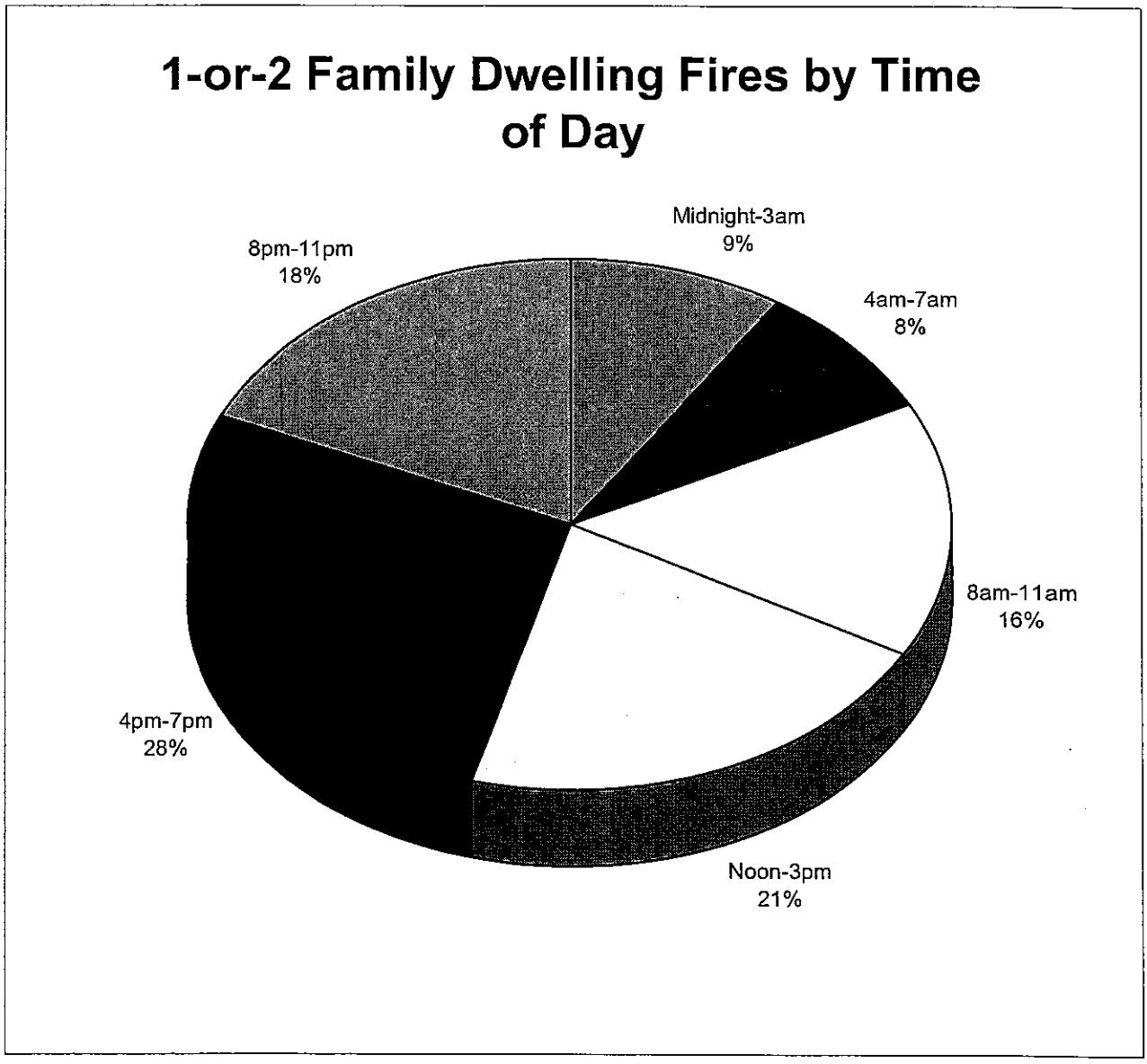
Fire Spread Group	#	%	RT Avg	%<=6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Inj/Death	Inj/Death Per 1k Inc.
Blank	10,729	24.9%	7:48	44.1%	$22,462,619	$2,094	128	9	29	1	167	16
Confined to object	12,010	27.9%	7:38	44.6%	$45,756,030	$3,810	264	12	37	0	313	26
Confined to room	10,338	24.0%	6:48	55.0%	$174,062,725	$16,837	787	49	111	0	947	92
Confined to floor	2,230	5.2%	8:30	54.1%	$73,650,025	$33,027	172	30	82	0	284	127
Confined to building	6,442	15.0%	9:34	42.0%	$558,842,329	$86,750	475	187	454	1	1,117	173
Spread beyond bldg.	1,323	3.1%	11:41	41.5%	$120,496,056	$91,078	91	54	129	0	274	207
Total	43,072	100.0%	7:56	47.0%	$995,269,784	$23,107	1,917	341	842	2	3,102	72



Source: Virginia Fire Incident Reporting System

Virginia Residential Building Fires
in 1-or-2 Family Dwellings
(Jan 2000- Sep 2008 Combined)

VDFP



Source: Virginia Fire Incident Reporting System

CITY OF RICHMOND
Department of Fire and Emergency Services
201 E. Franklin Street
Richmond, VA 23219
804-646-2500

July 1, 2009

Mr. Steve Calhoun
Virginia Board of Housing and Community Development
The Jackson Center
501 North Second St
Richmond, VA 23219

Dear Mr. Calhoun:

Fire in residential property poses one of the biggest threats to our communities. Nationwide 2,865 civilian fire deaths and 13,600 civilian injuries occur annually. From these incidents, there is over 7.4 billion dollars in direct fire losses. This trend does not have to continue.

Home fire sprinklers are a proven way to protect lives and property. If you have a reported fire in your home, the risk of dying decreases by about 80% when fire sprinklers are present. Roughly 90% of the time, fires are contained by the operation of just one sprinkler. Sprinklers have shown to reduce the average property loss by 71% per fire.

It was these outstanding facts and the overwhelming support of International Code Council (ICC) members that placed residential sprinklers in the 2009 International Residential Code (IRC). This passage was not only historic but set about the course of positive change across the country. Adopting the 2009 IRC, with regards to fire sprinklers, is the right thing to do in protecting lives and property.

The Virginia Board of Housing and Community Development has a tremendous opportunity forthcoming. Voting to keep residential sprinklers in the 2009 IRC as listed, is a vote to provide Virginians with the most basic need; safety and security at an affordable cost. Please share my support for the inclusion of residential sprinklers with all of the Board members.

Sincerely,

Robert A. Creecy
Fire Chief

Cc: David Creasy, Fire Marshal City of Richmond
Robbie Dawson, Fire Marshal Chesterfield County

I enjoy it and the Coast Guard requires boats 17 feet or longer to have a fire extinguisher on the boat even if it's made out of aluminum. We've never offered fire extinguishers in the kitchens and garages might be a solution or partial solution to this issue. There are a number of other options or solutions and I'll give them to you in my written comments. Thank you.

MR. CALHOUN: James Dawson.

MR. DAWSON: Mr. Chairman and members of the Board, good morning. I'm James Dawson and I'm the fire marshal for Chesterfield County. I'm asking you to pull the code changes submitted by the Homebuilders Association concerning residential sprinklers. I submitted a previous written statement outlining my concerns about the process, the Codes and Standards Committee used to approve the change. I believe the Committee is very short sighted to remove a provision of a nationally recognized model code with only 30 minutes of discussion when the issue was debated for more than 8 hours at the International Code Council Hearing. In addition, the Committee's discussion included more questions about sprinklers and no discussion on the merits of these systems. I'd also like to point out something about this supporting statement presented by the Homebuilders Association in their proposed changes. In that statement,

there's only one sentence that really has any resemblance of a supporting statement. In fact, their supporting statement ask even more questions, a total of seven questions without answers are presented in their support for removal of this code provision. One aspect of this change the homebuilders continue to press is economics. Since I've become involved in this issue, I been trying to gain an understanding of the economic aspects of new home construction. I recently discovered a paper by Mr. Buddy Doer who holds an economic degree and Master's degree in business administration. His explanation, new home economics is enlightening, and I have included a copy of his report with my written statement for your review. Even more enlightening in his report is that residential sprinklers have a one percent increase in home costs and do not impact the affordability of new homes. I'll leave that document with you so that you can research it. Mr. Chairman, I look forward to working with all interested parties to develop the code change proposals the Virginia Residential Sprinkler Coalition will bring forward in the coming months. I hope this Board will have all its questions answered before they make a decision on accepting a code change that will decrease the safety of new homes built under our uniform statewide building code. Mr. Chairman, for the sake of time, I'll

leave you with a full copy of my remarks. One supporting statement in the Homebuilders Association of Virginia code change proposal found on page 212 of the codes and standards committee packet. The one sentence that does not use qualifying words like maybe and seems to, the one sentence that doesn't ask a question but rather makes a statement regarding residential sprinklers. The NFPA data and reports confirm that sprinklers do reduce deaths, injuries and property damage losses. Mr. Chairman, I believe they have that supporting statement right. It is the code change they have gotten wrong. Thank you for your time.

MR. CALHOUN: Mark Viani.

MR. VIANI: Mr. Chairman and members of the Board, I'm Mark Viani. I'm with the Northern Virginia Builders Association. A lot of what I was going to say has already been said. I'll try to keep my comments brief. I urge the Board not to make the fire sprinklers mandatory and leave it as an option. From my own personal experience, I have purchased two homes in Virginia in the last 10 years. Both of my purchases were not expensive homes. In both cases, we have done everything we could do to buy a house. Some didn't have an option. Where we had the option, we would ask about safety features. The townhouses we had internet and those systems work.

important to understand is just as an example of how the education works. I think both sides have talked a lot about smoke detectors and we agree they do save lives. Smoke detectors have a finite life. I believe you have to replace them after 10 years. I deal with hundreds and hundreds of homeowners every year in my business and I've yet to find one that goes bad. We bring that to their attention all the time. So I would urge you to uphold the decision of the Code Standards Committee and to extend a hand of cooperation to my fellow firefighters to work together and dedicated to fire safety. Thank you.

MR. CALHOUN: Hadden Culp.

MR. CULP: Good morning Mr. Chairman and members of the Board, my name is Hadden Culp, Chief Firefighter from Prince William County, Virginia. I have many years of experience, that includes over 35 years here in the Commonwealth. I've had the unfortunate experience of participating in many, many hundreds of fires. I've stood in the front yard of people's homes who have lost everything. I've had the unfortunate experience of citizens who have passed away out of their houses were on fire and on one occasion, I carried one of my firefighters out of a house that was on fire. Many of these fires could have been prevented through the use of sprinklers. I can tell you a quick story about a fire that

occurred less than 24 hours ago in Prince William County; 2:30 yesterday afternoon an apartment, a mother turned the burner on on her stove and a few minutes later noticed some smoke and there was a fire and the smoke alarm went off and the mother took action to deal with that. The sprinkler head over top of that but she turned the wrong button on. But they escaped unharmed but the sprinkler went off in time to put that fire out. Sprinklers are not anything new and many houses and apartments already have them and people have installed them. We've been dealing with this issue associated with sprinklers and education is part of it and the maintenance that you've heard about, some people have been living with these sprinklers for many, many years. Last year in Prince William County we had 8 fires. The value of that is immeasurable. That amounted to $14.5 million because sprinklers were activated and the damage was $156,000. So I urge you to look at the value of the sprinklers and support the legislation that's come before you to keep sprinklers in the code and this will help support lives and property damage. Thank you very much.

MR. CALHOUN: Ernie Little.

MR. LITTLE: Good morning, I thank you for the opportunity to speak to you. I have a fact sheet having to do with this subject. I've been involved with the code

Kingma. I'm from the Charlottesville Albemarle area. I'm very uncomfortable and I'm sure everyone else standing before you arguing about saving lives. I'm sure no one opposes that. I would like to suggest to you that we as a community have a finite number of resources and that deploying those resources in other ways will produce a better savings of lives than mandating fire sprinklers in new construction. We saw a few moments ago a demonstration of how many people had these sprinkler systems in their homes. If we put them in all new construction next year or the year after, we would still have a very small percentage of the population. I'd like to suggest that the finite resources we have be used more efficiently. Thank you.

MR. CALHOUN: Ed Altizer.

MR. ALTIZER: Good morning, I'm Ed Altizer and I'm the Virginia State Fire Marshal. I'm here speaking on behalf of residential sprinklers. A lot of what I would say has already been said. I'll give you a copy of my entire comments and I will have that information sent in. I got a couple of statistics and comments that have not been given I think and those are very important. In 2008, as has been reported, there were 85 related deaths, 59 percent or 47 were one or two family dwellings; 674 civilian and firefighter injuries; 51.5 percent – 348 were

involved in one or two family dwellings. More than 5,600 fires in single family dwellings representing more than $125 million of property and content damage. This doesn't include local government cost, healthcare costs or any of those things. For years Virginia has been a leader in this country providing fire protection to citizens and visitors in buildings that are occupied by the public. We were one of the first, if not the first in the country to require equipment in homes and hospitals and nursing homes and buildings over six stories and hotels and motels over three stories in height. In addition to being a leader in providing sprinkler protection for all these buildings and other buildings. In about 1993, I did a survey for the Department of Housing and Community Development Board and Virginia was second in providing sprinkler protection at that time. New Jersey was a close second and I'm not sure if that's still good but at that time, we were the leader. The Board's Code and Standards Committee has voted to relieve the current requirement from the option proposed in 2009 of the residential code even though the Committees work group has not reached a consensus. However, the Committee did confirm in addition to fire service, their own organization supported residential sprinkler. At national hearings in Rochester, Palm Springs and Minneapolis, any

concerns that had been addressed about sprinklers in one or two family dwellings had been addressed. This included provisions for installation and ICC plumbing codes. We're also seeing actual cost figures which are substantially less than what some groups are indicating with improvements, the cost should fall. Also taking into consideration not only the cost of the sprinkler but the savings cost. I would encourage this board to help lead this country in helping to solve this significant fire problem by reconsidering the code and standards and not removing automatic sprinklers from the base document and leaving it in the 2009 IRC. We have properly vented our issue and hoping to provide a solution that I believe will be is a major unresolved fire safety problem still facing our citizens.

MR. CALHOUN: Richard Napier.

MR. NAPIER: Thank you very much. I appreciate all the work you folks do taking your time to work on issues like this. I'm a homebuilder and my name is Rich Napier in Powhatan County which is a rural county. We heard a few minutes ago from a gentleman from my same county in Powhatan that shows they had a sprinkler system installed in 1992 and has a house about 2,000 square feet and I think he said the bill was $3,000. I had an issue last year in Powhatan County where it was

Residential Structure Fire Causes

State: VA ***Report Period:*** 1/1/08 - 12/31/08

CODE	CATEGORY	FREQ	FREQ %	CIV DTHS	CIV DTHS %	CIV INJS	CIV INJS %	FF DTHS	FF DTH. %	FF INJS	FF INJS %	PROP LOSS	PROP LOSS %	CONT LOSS	CONT LOSS %	TOTAL LOSS	TOT LOSS %
01	Incendiary, Suspicious	349	4.24%	4	6.45%	13	3.42%	0	0.00%	15	12.30%	8,927,709	6.26%	1,694,702	4.83%	10,622,411	6.24%
02	Children Playing	28	0.34%	0	0.00%	4	1.05%	0	0.00%	0	0.00%	202,160	0.15%	36,800	0.11%	238,960	0.14%
03	Smoking	152	1.85%	2	3.23%	15	3.95%	0	0.00%	13	10.66%	4,281,190	3.18%	1,291,563	3.69%	5,572,753	3.27%
04	Heating	1,339	16.30%	0	0.00%	10	2.63%	0	0.00%	4	3.28%	3,261,651	2.42%	909,331	2.60%	4,170,982	2.45%
05	Cooking	2,599	31.64%	3	4.84%	126	33.16%	0	0.00%	7	5.74%	3,841,908	2.86%	1,116,319	3.19%	4,958,227	2.91%
06	Electrical Distribution	153	1.86%	3	4.84%	11	2.89%	0	0.00%	4	3.28%	4,425,447	3.29%	1,189,383	3.40%	5,614,830	3.30%
07	Appliances, Air Conditioning	229	2.79%	4	6.45%	25	6.58%	0	0.00%	2	1.64%	3,133,186	2.33%	994,685	2.84%	4,127,871	2.42%
08	Open Flame, Ember, Torch	395	4.81%	3	4.84%	38	10.00%	0	0.00%	6	4.92%	11,329,062	8.42%	3,564,887	10.19%	14,893,949	8.75%
09	Other Heat, Flame, Spark	257	3.13%	2	3.23%	10	2.63%	0	0.00%	3	2.46%	6,004,506	4.46%	1,511,663	4.32%	7,516,169	4.41%
10	Other Equipment	51	0.62%	1	1.61%	4	1.05%	0	0.00%	1	0.82%	2,527,180	1.88%	239,330	0.68%	2,766,510	1.62%
11	Natural	117	1.42%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	3,288,375	2.44%	1,217,495	3.48%	4,505,870	2.65%
12	Exposure	262	0.96%	0	0.00%	5	1.32%	0	0.00%	6	4.92%	6,079,142	4.44%	1,183,240	3.35%	7,262,382	4.26%
13	Unknown Cause	2,474	30.03%	41	64.52%	119	31.32%	0	0.00%	61	50.00%	77,872,617	57.86%	20,164,705	57.60%	98,037,322	57.57%
Totals		8,405	100.00%	63	100.00%	380	100.00%	0	100.00%	122	100.00%	135,174,133	100.00%	35,114,103	100.00%	170,288,236	100.00%

Residential Structure Fire Causes

State: VA ***Report Period:*** 1/1/09 - 6/30/09

CODE	CATEGORY	FREQ	FREQ %	CIV DTHS	CIV DTHS %	CIV INJS	CIV INJS %	FF DTHS	FF DTH %	FF INJS	FF INJS %	PROP LOSS	PROP LOSS %	CONT LOSS	CONT LOSS %	TOTAL LOSS	TOT LOSS %
01	Incendiary, Suspicious	151	4.13%	3	12.50%	6	4.05%	0	0.00%	12	23.53%	3,621,965	5.74%	813,742	4.11%	4,435,707	5.35%
02	Children Playing	13	0.36%	0	0.00%	3	2.03%	0	0.00%	0	0.00%	468,000	0.74%	119,201	0.60%	587,201	0.71%
03	Smoking	69	1.89%	1	4.17%	8	5.41%	0	0.00%	1	1.96%	3,216,100	5.10%	1,207,015	6.10%	4,423,115	5.34%
04	Heating	774	21.19%	1	4.17%	13	8.78%	0	0.00%	3	5.88%	1,482,895	2.35%	552,140	2.79%	2,035,035	2.46%
05	Cooking	996	27.27%	0	0.00%	32	21.62%	0	0.00%	0	0.00%	2,031,800	3.22%	892,750	4.51%	2,924,550	3.53%
06	Electrical Distribution	48	1.31%	0	0.00%	0	0.00%	0	0.00%	4	7.84%	2,341,651	3.71%	714,402	3.61%	3,056,053	3.69%
07	Appliances, Air Conditioning	91	2.49%	0	0.00%	4	2.70%	0	0.00%	1	1.96%	809,648	1.28%	272,260	1.38%	1,081,908	1.31%
08	Open Flame, Ember, Torch	195	5.34%	1	4.17%	8	5.41%	0	0.00%	2	3.92%	3,860,431	6.12%	1,156,811	5.84%	5,017,242	6.06%
09	Other Heat, Flame, Spark	127	3.48%	1	4.17%	4	2.70%	0	0.00%	3	5.88%	2,741,342	4.35%	871,141	4.40%	3,612,483	4.36%
10	Other Equipment	33	0.90%	0	0.00%	1	0.68%	0	0.00%	0	0.00%	281,705	0.45%	405,027	2.05%	686,732	0.83%
11	Natural	43	1.18%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	445,175	0.71%	242,556	1.23%	687,731	0.83%
12	Exposure	142	1.53%	2	8.33%	3	2.03%	0	0.00%	2	3.92%	8,177,250	12.97%	2,373,258	11.99%	10,550,508	12.74%
13	Unknown Cause	1,058	28.92%	15	62.50%	66	44.59%	0	0.00%	23	45.10%	33,574,700	53.25%	10,173,481	51.40%	43,748,181	52.81%
Totals		3,740	100.00%	24	100.00%	148	100.00%	0	100.00%	51	100.00%	63,052,662	100.00%	19,793,784	100.00%	82,846,446	100.00%

2007 Virginia Fire Incident Reporting System (VFIRS) Quick Facts[1]

As of 01/09/2008

- **Somewhere in Virginia, every minute, a fire department responded to an incident** – Fire departments responded to an average of 1,238 incidents each day. There were on average 777 EMS responses, 73 fire responses, and 387 other responses each day.

- **The demand for the fire service has expanded; the fire service does more than put out fires** – Sixty-three (63) percent of the incidents were emergency medical or rescue calls; 9% were good intent calls; 8% were non-malicious false calls, 7% were service calls, 6% were fire calls, 5% were hazardous condition calls, and 2% were other calls.

- **Fire injuries and fire deaths happen more than you might expect** – On an average, every 5 hours, 14 minutes someone was hurt or died as a result of fire; 558 fire injuries or deaths were reported in 2007.

- **Fire damage to property can be costly** – Total fire dollar loss was $434.5 Million; 414 incidents had a total dollar loss of $50,000 or more.

- **Rescue Calls** - Forty (40) percent of EMS incidents occurred in a 1-or-2 family dwelling home, 17% occurred on highways, streets, road or parking areas, and 6% occurred in nursing homes.

- Cooking - For residential structure fires in which the cause was known, 38% of the fires were due to cooking and accounted for 44% of the civilian injuries.

- Smoking accounted for 17% of civilian deaths in residential structure fires in which the cause was known.

- **Grass, Brush Fires** – Thirty-three (33) percent or one-third of the total fires reported in 2007 were natural vegetation fires while structure fires accounted for 29%.

- **Even though deliberately set fires or suspicious fires account for a low percentage of residential structure fires, the effects are devastating** – Incendiary or suspicious fires contributed to 61% of total dollar loss in residential structure fires when cause was known – $87.7 Million in 2007 and 52% of civilian deaths.

[1] Totals for Calendar Year 2007 will not be finalized until April 1, 2008. For questions about VFIRS, call Marion A. Long, VFIRS Program Manager, (804) 371-0220.

AMERICAN FIRE SPRINKLER ASSOCIATION

VIRGINIA CHAPTER

July 8, 2009

Board of Housing and Community Development
The Jackson Center
501 North 2nd Street
Richmond, VA 23219-1221

Attention: Steve Calhoun

Re: Residential Sprinkler Code

Dear Mr. Calhoun:

The Virginia Chapter of the American Fire Sprinkler Association (AFSA) is submitting this letter to voice our position of being in favor of the Residential Fire Sprinkler Code. We are against the Codes and Standards Committee of the Board of Housing and Community Development voting to not include the Residential Sprinkler requirement.

It our understanding that this was done simply because the Virginia Home Builders Association requested the exclusion. To remove this code because one group requested it without any open testimony from other groups is not demonstrating a fair democratic evaluation and shows favortism toward the home builders. Information that has been passed to us seems to indicate that there was not even a consensus among the committee to remove the requirement and yet it was removed anyway. We know others feel the way we do, including the Virginia Fire Service and many plumbers and building officials.

We have also come to understand that many on the committee still have questions about fire sprinkler systems and feel they need more information about them. Allowing public input, discussion and debates would help clarify the impact of this code and would allow for an informed decision instead of rushing to the language change.

This whole issue is made even more disturbing when we learned that several other code changes that had been submitted as consensus items, where questions or clarification were needed by just one committee member was pulled from the proposed regulations. This clearly does not demostrate consistency.

It appears this group has made up their minds and is trying to avoid any discussion ot input from those who are more informed about the facts surrounding residential fire sprinkler systems.

For your information, according to the 2008 Virginia Fire Incident Report, there were 30,972 fire incidents called in to first responder. $325,000,000.00 worth of property loss. Cooking accounted for 31% of the fires. Only 28% had a working smoke detector. A fire occurs every 17.9 minutes in Virginia. A casualty occurs every 15.8 hours.

The Home Builders like to push smoke detectors as being enough protection against fire. Homes should have smoke detectors, but when used with a fire sprinkler system the survival rate increases and property losses decrease. A recent study indicated that smoke detectors installed 10 years ago are failing to operate, had no batteries, painted, had excess dust acccumulation or were no longer installed to the rate of 68%. This is an extremely high failure rate. Fire sprinklers will extinguish and/or contain the fire so the residence can safely escape and allow the fire department to safely respond appropriately without being placed in danger themselves.

Another item the Home Builders like to push is thicker sheetrock for the walls. While this can help with the fire spread it does nothing to put out the fire or prevent spreading within the room itself. Only a fire sprinkler in the room can do that. In fact many of todays furnishings emit toxic gases when burning and people who may be in the room can be overcome by the fumes and die before ever having a chance to exit. A fire sprinkler in the room eliminates or reduces this emission.

In closing our association representing, the many fire sprinkler contractors in the state are for the inclusion of the Residential Fire Code. Doesn't it make since to save lives by implementing the Residential Fire Sprinkler Code. You may actually save a relative, friend, neighbor or someone you know by including this code. We are available to answer any question you may have and you are welcome to contact me and I will assist you in any way I can.

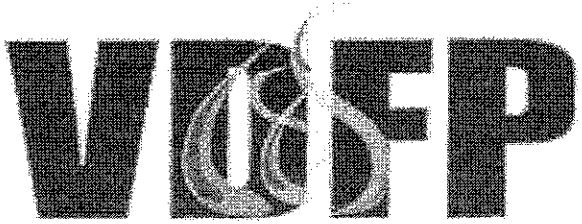
Sincerely,
AFSA Virginia Chapter

Anthony D. Shultz
Director and Legislative Chair
(804)-658-9889 cell

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2004	Jan	1/10/2004	Sat	06	Roanoke County	Roanoke County Fire & Rescue	Structure	No	54	White	Caught/trapped
2004	Jan	1/11/2004	Sun	01	Newport News	Newport News Fire Department	Structure	No	29		Exposed to fire products
2004	Jan	1/17/2004	Sat	01	Frederick County	Round Hill Fire Department	Structure	No	40	White	Undetermined
2004	Jan	1/18/2004	Sun	10	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	No	4	Black	Caught/trapped
2004	Jan	1/23/2004	Fri	11	Henry County	Horsepasture Vol. Fire Dept.	Other	No	69	Black	Exposed to fire products
2004	Jan	1/27/2004	Tue	10	Nelson County	Gladstone Vol. Fire Dept.	Structure	No	72	White	Caught/trapped
2004	Jan	1/31/2004	Sat	00	Gloucester County	Gloucester Vol. Fire Dept.	Structure	Yes	5		Caught/trapped
2004	Jan	1/31/2004	Sat	00	Gloucester County	Gloucester Vol. Fire Dept.	Structure	Yes	3		Caught/trapped
2004	Jan	1/31/2004	Sat	02	Portsmouth	Portsmouth Fire Department	Structure	Yes	74	Black	Exposed to fire products
2004	Jan	1/31/2004	Sat	02	Portsmouth	Portsmouth Fire Department	Structure	Yes	8	Black	Exposed to fire products
2004	Feb	2/6/2004	Fri	08	Lynchburg	Lynchburg Fire Department	Mobile used as Fixed Structure	No	63	White	
2004	Feb	2/7/2004	Sat	07	Albemarle County	Scottsville Vol. Fire Dept.	Structure	No	83	White	Undetermined
2004	Feb	2/11/2004	Wed	09	Roanoke County	Roanoke County Fire & Rescue	Structure	No	80	White	Exposed to fire products
2004	Feb	2/11/2004	Wed	21	Patrick County	Fairystone Vol. Fire Dept.	Structure	No	54	White	
2004	Feb	2/13/2004	Fri	03	Southampton County	Boykins Vol. Fire Dept.	Structure	Yes	19	Black	
2004	Feb	2/13/2004	Fri	03	Southampton County	Boykins Vol. Fire Dept.	Structure	Yes	2	Black	
2004	Feb	2/13/2004	Fri	03	Southampton County	Boykins Vol. Fire Dept.	Structure	Yes	40	Black	
2004	Feb	2/13/2004	Fri	11	Charles City County	Charles City Vol.Fire/Ems Dept	Structure	No	86		

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009



Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2004	Feb	2/13/2004	Fri	12	Essex County	Tappahannock-Essex Vol. Fire	Structure	No	47	White	Exposed to fire products
2004	Feb	2/18/2004	Wed	04	Suffolk	Suffolk Fire Department	Structure	No	67	Black	
2004	Feb	2/24/2004	Tue	17	Mecklenburg County	Clarksville Vol. Fire Dept.	Structure	No	56		
2004	Feb	2/28/2004	Sat	06	Mecklenburg County	Clarksville Vol. Fire Dept.	Structure	No	46	White	
2004	Mar	3/2/2004	Tue	23	Prince Edward County	Hampden-Sydney Vol. Fire Dept.	Structure	Yes	40		
2004	Mar	3/2/2004	Tue	23	Prince Edward County	Hampden-Sydney Vol. Fire Dept.	Structure	Yes	40		
2004	Mar	3/11/2004	Thu	14	Sussex County	Stony Creek Vol. Fire Dept.	Structure	No	49	Black	Exposed to fumes other than smoke
2004	Mar	3/15/2004	Mon	15	Fairfax County	Fairfax County Fire And Rescue	Other	No			
2004	Mar	3/25/2004	Thu	02	Newport News	Newport News Fire Department	Vehicle	No	0		Undetermined
2004	Mar	3/29/2004	Mon	18	Richmond	Richmond Fire & Emergency Serv	Structure	No			
2004	Mar	3/31/2004	Wed	23	Fairfax County	Fairfax County Fire And Rescue	Vehicle	No			
2004	Apr	4/3/2004	Sat	02	Washington County	Glade Spring Vol. Fire Dept.	Structure	Yes	12		Exposed to fire products
2004	Apr	4/3/2004	Sat	02	Washington County	Glade Spring Vol. Fire Dept.	Structure	Yes	5		Exposed to fire products
2004	Apr	4/12/2004	Mon	21	Albemarle County	Albemarle Co.Fire Rescue	Structure	No	54	White	Exposed to fire products
2004	Apr	4/18/2004	Sun	10	Newport News	Newport News Fire Department	Structure	No	60		Exposed to fire products
2004	Apr	4/19/2004	Mon	03	Virginia Beach	Virginia Beach Fire Department	Structure	No	61	White	Exposed to fire products

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2004	May	5/1/2004	Sat	01	Franklin County	Scruggs Vol. Fire Dept.	Mobile used as Fixed Structure	No	33		
2004	May	5/12/2004	Wed	23	Montgomery County	Elliston Volunteer Fire Depart	Structure	No	61		Caught/trapped
2004	May	5/13/2004	Thu	01	Henry County	Horsepasture Vol. Fire Dept.	Mobile used as Fixed Structure	No	59	White	Exposed to fire products
2004	May	5/15/2004	Sat	01	Virginia Beach	Virginia Beach Fire Department	Structure	No	26	White	Exposed to fumes other than smoke
2004	May	5/17/2004	Mon	04	Chesterfield County	Chesterfield Fire & Ems	Structure	No	0		Undetermined
2004	May	5/19/2004	Wed	07	James City County	James City Co. Fire Department	Vehicle	No	16		
2004	May	5/23/2004	Sun	03	Poquoson	Poquoson Fire/Rescue	Mobile used as Fixed Structure	No	40	White	Exposed to fire products
2004	May	5/23/2004	Sun	05	Franklin County	Glade Hill Fire Dept.	Vehicle	No	19		
2004	Jun	6/2/2004	Wed	12	Newport News	Newport News Fire Department	Structure	Yes	0		Exposed to fire products
2004	Jun	6/2/2004	Wed	12	Newport News	Newport News Fire Department	Structure	Yes	5		Exposed to fire products
2004	Jun	6/12/2004	Sat	16	York County	County Of York	Vehicle	Yes	44	Undetermined	Multiple
2004	Jun	6/12/2004	Sat	16	York County	County Of York	Vehicle	Yes	41	Undetermined	Multiple
2004	Jun	6/16/2004	Wed	23	Staunton	Staunton Fire Department	Structure	No	27		Undetermined
2004	Jun	6/24/2004	Thu	08	Tazewell County	Richlands Vol. Fire Dept.	Mobile used as Fixed Structure	No	37	White	Multiple
2004	Jun	6/25/2004	Fri	01	Augusta County	Dooms Vol. Fire Dept.	Vehicle	No	23	White	

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2004	Jun	6/28/2004	Mon	15	Patrick County	Stuart Vol. Fire Dept.	Structure	No	70		
2004	Jul	7/4/2004	Sun	02	Powhatan County	Fine Creek Vol. Fire Dept.	Vehicle	No	30	Undetermined	Undetermined
2004	Jul	7/9/2004	Fri	15	Newport News	Newport News Fire Department	Mobile used as Fixed Structure	No	59		Exposed to fire products
2004	Jul	7/11/2004	Sun	05	Fairfax County	Fairfax County Fire And Rescue	Structure	Yes			
2004	Jul	7/11/2004	Sun	05	Fairfax County	Fairfax County Fire And Rescue	Structure	Yes			
2004	Jul	7/11/2004	Sun	05	Fairfax County	Fairfax County Fire And Rescue	Structure	Yes			
2004	Jul	7/19/2004	Mon	23	Essex County	Tappahannock-Essex Vol. Fire	Structure	No	64	Black	Exposed to fire products
2004	Sep	9/4/2004	Sat	05	Augusta County	Stuarts Draft Vol. Fire Dept.	Mobile used as Fixed Structure	No	0		
2004	Sep	9/5/2004	Sun	14	Norfolk	Norfolk Fire-Rescue	Structure	No	71	Black	Exposed to fire products
2004	Sep	9/10/2004	Fri	00	Shenandoah County	Shenandoah County Fire And Res	Structure	No	88		
2004	Sep	9/10/2004	Fri	00	Shenandoah County	New Market Fire Department	Structure	No	88	White	Exposed to fire products
2004	Sep	9/15/2004	Wed	05	Galax	Galax Vol. Fire Department	Vehicle	No	84	White	
2004	Sep	9/16/2004	Thu	02	Salem	Salem Fire Department	Structure	No	52	White	Exposed to fire products
2004	Sep	9/20/2004	Mon	14	Danville	Danville Fire Department	Structure	No	74	Undetermined	Undetermined
2004	Sep	9/23/2004	Thu	14	Chesapeake	Chesapeake Fire Department	Structure	No	73	White	Undetermined
2004	Oct	10/3/2004	Sun	12	Pittsylvania County	Chatham	Structure	No	6	Black	Undetermined
2004	Oct	10/10/2004	Sun	00	Chesapeake	Chesapeake Fire Department	Structure	No	49	White	Undetermined
2004	Oct	10/18/2004	Mon	16	Henrico County	Henrico Division Of Fire	Structure	No	64	White	Exposed to fire products

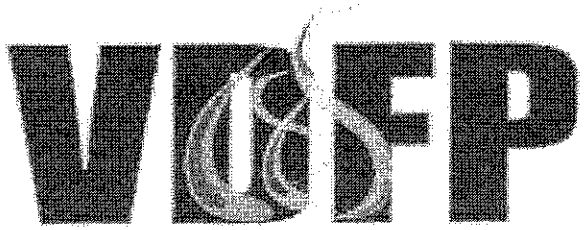
Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2004	Oct	10/20/2004	Wed	06	Richmond	Richmond Fire & Emergency Serv	Structure	No			
2004	Oct	10/23/2004	Sat	01	Norfolk	Norfolk Fire-Rescue	Structure	Yes	49	Black	Exposed to fire products
2004	Oct	10/23/2004	Sat	01	Norfolk	Norfolk Fire-Rescue	Structure	Yes	44	Black	Exposed to fire products
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	24	White	Undetermined
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	53	White	Undetermined
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	22	White	Undetermined
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	22	White	Undetermined
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	50		Undetermined
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	38		Undetermined
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	0		Undetermined
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	51		
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	31		
2004	Oct	10/24/2004	Sun	12	Patrick County	Patrick Springs Fire Dept.	Vehicle	Yes	0		
2004	Oct	10/31/2004	Sun	21	Goochland County	Goochand Co. Fire/Rescue Dept.	Structure	No	74	Black	Exposed to fire products
2004	Nov	11/4/2004	Thu	23	Newport News	Newport News Fire Department	Structure	Yes	6		Exposed to fire products
2004	Nov	11/4/2004	Thu	23	Newport News	Newport News Fire Department	Structure	Yes	6		Exposed to fire products
2004	Nov	11/9/2004	Tue	08	Essex County	Tappahannock-Essex Vol. Fire	Structure	Yes	56	White	Exposed to fire products
2004	Nov	11/9/2004	Tue	08	Essex County	Tappahannock-Essex Vol. Fire	Structure	Yes	4	White	Exposed to fire products
2004	Nov	11/9/2004	Tue	08	Essex County	Tappahannock-Essex Vol. Fire	Structure	Yes	4	White	Exposed to fire products
2004	Nov	11/9/2004	Tue	08	Essex County	Tappahannock-Essex Vol. Fire	Structure	Yes	4	White	Exposed to fire products

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2004	Nov	11/9/2004	Tue	08	Essex County	Tappahannock-Essex Vol. Fire	Structure	Yes	4	White	Exposed to fire products
2004	Nov	11/9/2004	Tue	08	Essex County	Tappahannock-Essex Vol. Fire	Structure	Yes	56	White	Exposed to fire products
2004	Nov	11/12/2004	Fri	20	Petersburg	Petersburg Fire And Rescue	Structure	No	64		Exposed to fire products
2004	Nov	11/17/2004	Wed	02	Scott County	Duffield Fire & Rescue	Structure	No	69		
2004	Nov	11/18/2004	Thu	07	Giles County	Newport Vol. Fire Dept.	Structure	No	43	White	
2004	Nov	11/24/2004	Wed	12	Loudoun County	Hamilton Vol. Fire Dept.	Vehicle	Yes	84		
2004	Nov	11/24/2004	Wed	12	Loudoun County	Hamilton Vol. Fire Dept.	Vehicle	Yes	83		
2004	Nov	11/29/2004	Mon	11	Halifax County	North Halifax Vol. Fire Dept.	Structure	No	62	Black	
2004	Dec	12/4/2004	Sat	18	Fairfax County	Fairfax County Fire And Rescue	Structure	No	35		
2004	Dec	12/10/2004	Fri	22	Henry County	Horsepasture Vol. Fire Dept.	Structure	Yes	52	White	Exposed to fire products
2004	Dec	12/10/2004	Fri	22	Henry County	Horsepasture Vol. Fire Dept.	Structure	Yes	54	White	Multiple
2004	Dec	12/16/2004	Thu	22	Hopewell	Hopewell Fire Dept.	Structure	No			
2004	Dec	12/20/2004	Mon	19	Richmond	Richmond Fire & Emergency Serv	Structure	No			Exposed to fire products
2004	Dec	12/20/2004	Mon	21	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	No	60	Black	Exposed to fire products
2004	Dec	12/21/2004	Tue	06	Dickenson County	Clintwood Vol. Fire Dept.	Mobile used as Fixed Structure	No	65		
2004	Dec	12/25/2004	Sat	03	Virginia Beach	Virginia Beach Fire Department	Structure	Yes	43	White	Exposed to fire products
2004	Dec	12/25/2004	Sat	03	Virginia Beach	Virginia Beach Fire Department	Structure	Yes	5	White	Exposed to fire products
2004	Dec	12/25/2004	Sat	03	Virginia Beach	Virginia Beach Fire Department	Structure	Yes	9	White	Exposed to fire products

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009



Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2004	Dec	12/26/2004	Sun	17	Richmond	Richmond Fire & Emergency Serv	Structure	No	62		Exposed to fire products
2004	Dec	12/27/2004	Mon	14	Portsmouth	Portsmouth Fire Department	Structure	No	85		
2004	Dec	12/28/2004	Tue	12	Wythe County	Wytheville	Structure	No	91	White	Undetermined
2005	Jan	1/1/2005	Sat	02	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	Yes	51	White	Exposed to fire products
2005	Jan	1/1/2005	Sat	02	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	Yes	48	White	Exposed to fire products
2005	Jan	1/3/2005	Mon	09	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	No	45	White	Undetermined
2005	Jan	1/5/2005	Wed	18	Staunton	Staunton Fire Department	Vehicle	No	66		Exposed to fire products
2005	Jan	1/7/2005	Fri	05	Spotsylvania County	Spotsylvania Fire & Rescue	Vehicle	No	56		Undetermined
2005	Jan	1/8/2005	Sat	02	Augusta County	Swoope Vol. Fire Dept.	Structure	No	47	White	
2005	Jan	1/14/2005	Fri	12	Southampton County	Sedley Vol. Fire Dept.	Vehicle	No	56	Black	Multiple
2005	Jan	1/15/2005	Sat	03	Winchester	Winchester Fire & Rescue	Structure	No	45		Exposed to fire products
2005	Jan	1/19/2005	Wed	19	Wythe County	Max Meadows Vol. Fire Dept.	Vehicle	No	35		
2005	Jan	1/19/2005	Wed	20	Giles County	Rich Creek Vol. Fire Dept.	Mobile used as Fixed Structure	No	65	White	Undetermined
2005	Jan	1/24/2005	Mon	02	Northampton County	Community Fire Company, Inc.	Structure	Yes	56	White	Undetermined
2005	Jan	1/24/2005	Mon	02	Northampton County	Community Fire Company, Inc.	Structure	Yes	66	White	Undetermined
2005	Jan	1/26/2005	Wed	12	Pulaski County	Pulaski Fire Department	Structure	No	59	Black	Exposed to fire products
2005	Jan	1/27/2005	Thu	11	Norfolk	Norfolk Fire-Rescue	Structure	No	76	White	Undetermined

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2005	Feb	2/8/2005	Tue	03	Sussex County	Stony Creek Vol. Fire Dept.	Structure	No	48	Black	
2005	Feb	2/9/2005	Wed	01	Charlotte County	Bacon District Vol. Fire Dept.	Vehicle	No	35		Exposed to fire products
2005	Feb	2/10/2005	Thu	12	Buena Vista	Buena Vista Fire Department	Structure	No	68		
2005	Feb	2/16/2005	Wed	01	Norfolk	Norfolk Fire-Rescue	Structure	Yes	5	Black	Exposed to fire products
2005	Feb	2/16/2005	Wed	01	Norfolk	Norfolk Fire-Rescue	Structure	Yes	1	Black	Exposed to fire products
2005	Feb	2/18/2005	Fri	00	Montgomery County	Blacksburg Fire Department	Structure	No	67		
2005	Feb	2/22/2005	Tue	07	Accomack County	Painter Vol. Fire Dept.	Structure	No	49		
2005	Feb	2/28/2005	Mon	01	Chesapeake	Chesapeake Fire Department	Vehicle	No	17	Other	Caught/trapped
2005	Mar	3/1/2005	Tue	05	Norfolk	Norfolk Fire-Rescue	Structure	No	83	Black	Exposed to fire products
2005	Mar	3/5/2005	Sat	21	York County	County Of York	Mobile used as Fixed Structure	No	65	White	Exposed to fire products
2005	Mar	3/27/2005	Sun	01	Shenandoah County	Edinburg Fire Department	Structure	No	25		
2005	Apr	4/4/2005	Mon	02	Suffolk	Suffolk Fire Department	Structure	No	45	Black	
2005	Apr	4/15/2005	Fri	04	Powhatan County	Powhatan Co. Vol. Fire Dept.	Structure	No	61	White	Undetermined
2005	Apr	4/22/2005	Fri	05	Fauquier County	Warrenton Volunteer Fire Comp	Structure	No	37	White	Exposed to fire products
2005	Apr	4/26/2005	Tue	08	Chesterfield County	Chesterfield Fire & Ems	Structure	No	2	White	Exposed to fire products
2005	May	5/14/2005	Sat	08	Fairfax County	Fairfax County Fire And Rescue	Structure	Yes	44		
2005	May	5/14/2005	Sat	08	Fairfax County	Fairfax County Fire And Rescue	Structure	Yes	87		
2005	May	5/15/2005	Sun	05	Petersburg	Petersburg Fire And Rescue	Vehicle	No	27		Exposed to fire products
2005	Jun	6/7/2005	Tue	22	Waynesboro	Waynesboro Fire Department	Structure	No			

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2005	Jun	6/12/2005	Sun	03	Petersburg	Petersburg Fire And Rescue	Structure	No	0		Exposed to fire products
2005	Jun	6/24/2005	Fri	20	Newport News	Newport News Fire Department	Structure	Yes	90		Exposed to fire products
2005	Jun	6/24/2005	Fri	20	Newport News	Newport News Fire Department	Structure	Yes	49		Exposed to fire products
2005	Jun	6/28/2005	Tue	00	Accomack County	Onancock Vol. Fire Dept.	Structure	No	62		
2005	Jun	6/28/2005	Tue	18	Pittsylvania County	Tunstall Vol. Fire & Rescue	Structure	No	26		
2005	Jun	6/29/2005	Wed	08	King William County	West Point Vol. Fire Dept.	Vehicle	No	57		
2005	Jun	6/29/2005	Wed	12	Spotsylvania County	Spotsylvania Fire & Rescue	Structure	No	12		Exposed to fire products
2005	Jun	6/30/2005	Thu	23	Lee County	Pennington Gap Vol. Fire Dept.	Structure	No	54		
2005	Jul	7/7/2005	Thu	08	Roanoke	Roanoke Dept. Of Fire-Ems	Vehicle	No	22	White	Exposed to fire products
2005	Jul	7/7/2005	Thu	08	Roanoke County	Roanoke County Fire & Rescue	Vehicle	No	30	White	Exposed to fire products
2005	Jul	7/18/2005	Mon	03	Newport News	Newport News Fire Department	Vehicle	Yes	22		Undetermined
2005	Jul	7/18/2005	Mon	03	Newport News	Newport News Fire Department	Vehicle	Yes	19		Undetermined
2005	Jul	7/18/2005	Mon	03	Newport News	Newport News Fire Department	Vehicle	Yes	19		Undetermined
2005	Jul	7/18/2005	Mon	03	Newport News	Newport News Fire Department	Vehicle	Yes	20		Undetermined
2005	Aug	8/3/2005	Wed	09	Smyth County	Marion Vol. Fire Dept.	Structure	No	68		
2005	Aug	8/7/2005	Sun	07	Richmond	Richmond Fire & Emergency Serv	Vehicle	No			Exposed to fire products
2005	Aug	8/31/2005	Wed	01	Chesapeake	Chesapeake Fire Department	Structure	No	57	White	Undetermined
2005	Sep	9/6/2005	Tue	05	Pittsylvania County	Gretna	Other	No	47		
2005	Oct	10/6/2005	Thu	00	Pittsylvania County	Gretna	Vehicle	No	19		
2005	Oct	10/23/2005	Sun	05	Chesapeake	Chesapeake Fire Department	Structure	No	84	White	Exposed to fire products
2005	Oct	10/30/2005	Sun	13	Roanoke County	Roanoke County Fire & Rescue	Vehicle	No	22	White	Fell, slipped

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2005	Nov	11/8/2005	Tue	20	Prince George County	Prince George Fire & Ems	Structure	No	60	Black	Exposed to fire products
2005	Nov	11/11/2005	Fri	14	Newport News	Newport News Fire Department	Vehicle	No	44		Struck by object
2005	Dec	12/3/2005	Sat	09	Lee County	Thomas Walker Vol Fire Dept #1	Vehicle	No	43		
2005	Dec	12/7/2005	Wed	15	Petersburg	Petersburg Fire And Rescue	Structure	No	53		Exposed to fire products
2005	Dec	12/9/2005	Fri	08	Augusta County	Craigsville Vol. Fire Dept.	Structure	No	65	White	
2005	Dec	12/21/2005	Wed	10	Franklin County	Burnt Chimney Vol. Fire Dept.	Structure	No	80		Undetermined
2005	Dec	12/21/2005	Wed	13	Lunenburg County	Victoria Fire & Rescue Inc.	Structure	Yes	3	White	Exposed to fire products
2005	Dec	12/21/2005	Wed	13	Lunenburg County	Victoria Fire & Rescue Inc.	Structure	Yes	2	White	Exposed to fire products
2005	Dec	12/23/2005	Fri	02	Albemarle County	Albemarle Co.Fire Rescue	Structure	No	46		Undetermined
2005	Dec	12/24/2005	Sat	03	Pittsylvania County	Mount Cross	Structure	No	42		
2006	Jan	1/20/2006	Fri	14	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	Yes	53	White	Exposed to fire products
2006	Jan	1/20/2006	Fri	14	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	Yes	35	White	Exposed to fire products
2006	Jan	1/21/2006	Sat	02	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	No	86	White	Exposed to fire products
2006	Jan	1/23/2006	Mon	20	Patrick County	Patrick-Henry Vol. Fire Dept.	Structure	No	70		
2006	Jan	1/23/2006	Mon	20	Henry County	Bassett Volunteer Fire Dept.	Structure	No	67	White	Exposed to fire products
2006	Jan	1/23/2006	Mon	21	Lynchburg	Lynchburg Fire Department	Structure	No	69	Black	Exposed to fire products
2006	Jan	1/27/2006	Fri	22	Chesterfield County	Chesterfield Fire & Ems	Other	No	91	White	Exposed to fire products
2006	Feb	2/6/2006	Mon	04	Mecklenburg County	Clarksville Vol. Fire Dept.	Structure	No	47	Undetermined	

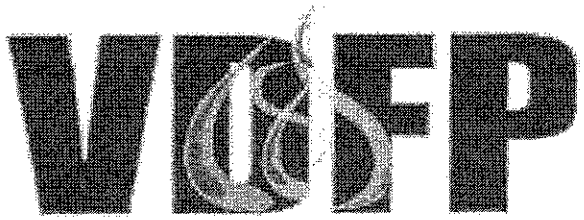
Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2006	Feb	2/9/2006	Thu	18	Louisa County	Mineral Vol. Fire Dept.	Structure	No	69	Black	Exposed to fire products
2006	Feb	2/11/2006	Sat	07	Henrico County	Henrico Division Of Fire	Structure	No	33	Black	Exposed to fire products
2006	Feb	2/13/2006	Mon	21	Warren County	Front Royal Vol. Fire Dept.	Structure	No	38		
2006	Feb	2/16/2006	Thu	04	Rappahannock County	Amissville Volunteer Fire & Re	Structure	No	78	White	Exposed to fire products
2006	Feb	2/19/2006	Sun	04	Charlotte County	Bacon District Vol. Fire Dept.	Vehicle	Yes	21	Black	
2006	Feb	2/19/2006	Sun	04	Charlotte County	Bacon District Vol. Fire Dept.	Vehicle	Yes	25	Black	
2006	Mar	3/2/2006	Thu	10	Spotsylvania County	Spotsylvania Fire & Rescue	Other	No	25		Exposed to fire products
2006	Mar	3/3/2006	Fri	15	Covington	Covington Fire Department	Vehicle	No	70	White	Exposed to fire products
2006	Mar	3/5/2006	Sun	12	Loudoun County	Middleburg Vol. Fire Dept.	Vehicle	No	18		
2006	Mar	3/9/2006	Thu	22	Mathews County	Mathews Vol. Fire Dept.	Mobile used as Fixed Structure	Yes	15		
2006	Mar	3/9/2006	Thu	22	Mathews County	Mathews Vol. Fire Dept.	Mobile used as Fixed Structure	Yes	12		
2006	Mar	3/13/2006	Mon	15	Winchester	Winchester Fire & Rescue	Structure	No	72		
2006	Mar	3/19/2006	Sun	00	Albemarle County	Albemarle Co.Fire Rescue	Structure	Yes	75	White	Exposed to fire products
2006	Mar	3/19/2006	Sun	00	Albemarle County	Albemarle Co.Fire Rescue	Structure	Yes	77	White	
2006	Mar	3/19/2006	Sun	06	Mecklenburg County	Buckhorn Volunteer Fire Depart	Structure	No	85		
2006	Mar	3/19/2006	Sun	10	Newport News	Newport News Fire Department	Other	No	66		Exposed to fire products

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2006	Mar	3/25/2006	Sat	16	Campbell County	Evington Vol. Fire Dept.	Vehicle	No	16	White	
2006	Mar	3/26/2006	Sun	01	Sussex County	Stony Creek Vol. Fire Dept.	Vehicle	No	48		Exposed to fire products
2006	Mar	3/28/2006	Tue	14	Martinsville	Martinsville Fire Department	Structure	No	53	Black	
2006	Mar	3/31/2006	Fri	05	Danville	Danville Fire Department	Structure	No	50	White	Exposed to fire products
2006	Apr	4/1/2006	Sat	04	Charles City County	Charles City Vol.Fire/Ems Dept	Structure	No	90		
2006	Apr	4/12/2006	Wed	11	Franklin County	Franklin County Emerg Srvs.	Other	No	85		
2006	Apr	4/13/2006	Thu	17	Franklin County	Franklin County Emerg Srvs.	Structure	No	56	White	Multiple
2006	Apr	4/20/2006	Thu	05	Washington County	Clinch Mountian Vol. Fire Dept	Vehicle	No	68		
2006	Apr	4/24/2006	Mon	01	Petersburg	Petersburg Fire And Rescue	Structure	No	95		Exposed to fire products
2006	May	5/4/2006	Thu	11	Waynesboro	Waynesboro Fire Department	Vehicle	No	3	White	Exposed to fire products
2006	May	5/8/2006	Mon	16	Clarke County	John H Enders Fire And Rescue	Structure	No	77		
2006	May	5/12/2006	Fri	05	Dickenson County	Clintwood Vol. Fire Dept.	Mobile used as Fixed Structure	No	30		
2006	May	5/20/2006	Sat	17	Virginia Beach	Virginia Beach Fire Department	Structure	Yes	69	White	Exposed to fire products
2006	May	5/20/2006	Sat	17	Virginia Beach	Virginia Beach Fire Department	Structure	Yes	70	White	Exposed to fire products
2006	May	5/22/2006	Mon	19	Norfolk	Norfolk Fire-Rescue	Vehicle	No	17	White	Multiple
2006	Jun	6/14/2006	Wed	11	Albemarle County	Albemarle Co.Fire Rescue	Vehicle	Yes	75		
2006	Jun	6/14/2006	Wed	11	Albemarle County	Albemarle Co.Fire Rescue	Vehicle	Yes	55		
2006	Jun	6/15/2006	Thu	05	Wise County	Coeburn Vol. Fire Department	Structure	No	38	White	

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009



Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2006	Jun	6/27/2006	Tue	04	Newport News	Newport News Fire Department	Mobile used as Fixed Structure	No	60		Exposed to fire products
2006	Jul	7/10/2006	Mon	00	Amelia County	Amelia Co. Vol. Fire Dept.	Vehicle	No	40		
2006	Jul	7/18/2006	Tue	02	Henry County	Bassett Volunteer Fire Dept.	Structure	Yes	42	Black	Exposed to fire products
2006	Jul	7/18/2006	Tue	02	Henry County	Bassett Volunteer Fire Dept.	Structure	Yes	44	Black	Exposed to fire products
2006	Jul	7/18/2006	Tue	03	Pittsylvania County	Tunstall Vol. Fire & Rescue	Mobile used as Fixed Structure	Yes	62		Undetermined
2006	Jul	7/18/2006	Tue	03	Pittsylvania County	Tunstall Vol. Fire & Rescue	Mobile used as Fixed Structure	Yes	59		
2006	Jul	7/18/2006	Tue	04	Mecklenburg County	Clarksville Vol. Fire Dept.	Structure	No	41		
2006	Jul	7/20/2006	Thu	14	Campbell County	Altavista Vol. Fire Department	Structure	No	89		
2006	Jul	7/20/2006	Thu	14	Campbell County	Evington Vol. Fire Dept.	Structure	No	83		
2006	Jul	7/22/2006	Sat	07	Henrico County	Henrico Division Of Fire	Structure	No	62	Black	Exposed to fire products
2006	Jul	7/27/2006	Thu	10	Richmond	Richmond Fire & Emergency Serv	Structure	No			Exposed to fire products
2006	Aug	8/1/2006	Tue	17	Chesterfield County	Chesterfield Fire & Ems	Structure	No	55	White	Exposed to fire products
2006	Aug	8/3/2006	Thu	07	Culpeper County	Culpeper County Vol Fire Depar	Structure	No	1		Exposed to fire products
2006	Aug	8/24/2006	Thu	17	Chesterfield County	Chesterfield Fire & Ems	Structure	No	87		

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2006	Sep	9/11/2006	Mon	20	Hopewell	Hopewell Fire Dept.	Structure	No	46		Undetermined
2006	Sep	9/12/2006	Tue	13	Wise County	Valley Vol. Fire Dept.	Vehicle	No	57	White	Caught/trapped
2006	Sep	9/30/2006	Sat	02	Virginia Beach	Virginia Beach Fire Department	Vehicle	No	26	Undetermined	Exposed to fire products
2006	Oct	10/5/2006	Thu	15	Roanoke County	Roanoke County Fire & Rescue	Structure	No	71		Exposed to fire products
2006	Oct	10/7/2006	Sat	03	Tazewell County	Richlands Vol. Fire Dept.	Structure	No	24		
2006	Oct	10/23/2006	Mon	01	Radford	Radford Fire Department	Structure	No	49	Black	Exposed to fire products
2006	Oct	10/30/2006	Mon	00	Richmond	Richmond Fire & Emergency Serv	Structure	Yes			Exposed to fire products
2006	Oct	10/30/2006	Mon	00	Richmond	Richmond Fire & Emergency Serv	Structure	Yes			Exposed to fire products
2006	Oct	10/30/2006	Mon	03	Rockbridge County	Glasgow Vol. Fire Dept.	Mobile used as Fixed Structure	Yes	70		
2006	Oct	10/30/2006	Mon	03	Rockbridge County	Glasgow Vol. Fire Dept.	Mobile used as Fixed Structure	Yes	70		
2006	Nov	11/2/2006	Thu	00	Newport News	Newport News Fire Department	Structure	No	65		Exposed to fire products
2006	Nov	11/4/2006	Sat	10	Pittsylvania County	Callands	Structure	No	42		Exposed to fire products
2006	Nov	11/4/2006	Sat	21	Danville	Danville Fire Department	Mobile used as Fixed Structure	No	61	Undetermined	Exposed to fire products

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2006	Nov	11/5/2006	Sun	12	Southampton County	Courtland Vol. Fire Dept.	Vehicle	Yes	43		
2006	Nov	11/5/2006	Sun	12	Southampton County	Courtland Vol. Fire Dept.	Vehicle	Yes	14		
2006	Nov	11/5/2006	Sun	12	Southampton County	Courtland Vol. Fire Dept.	Vehicle	Yes	13		
2006	Nov	11/5/2006	Sun	12	Southampton County	Courtland Vol. Fire Dept.	Vehicle	Yes	12		
2006	Nov	11/6/2006	Mon	12	Dickenson County	Haysi Vfd	Vehicle	No	53	White	Undetermined
2006	Nov	11/6/2006	Mon	17	Richmond	Richmond Fire & Emergency Serv	Structure	No			Exposed to fire products
2006	Nov	11/12/2006	Sun	11	James City County	James City Co. Fire Department	Vehicle	No	55		Multiple
2006	Nov	11/17/2006	Fri	04	Portsmouth	Portsmouth Fire Department	Structure	No	86	Black	
2006	Nov	11/19/2006	Sun	07	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	No	71	White	Exposed to fire products
2006	Nov	11/23/2006	Thu	14	Petersburg	Petersburg Fire And Rescue	Structure	No	46		Exposed to fire products
2006	Nov	11/24/2006	Fri	23	Virginia Beach	Virginia Beach Fire Department	Structure	No	88	White	Exposed to fire products
2006	Nov	11/28/2006	Tue	09	Richmond	Richmond Fire & Emergency Serv	Structure	No	80		Exposed to fire products
2006	Dec	12/9/2006	Sat	16	Hampton	Hampton Fire Department	Other	No	91	Black	Undetermined
2006	Dec	12/10/2006	Sun	13	Albemarle County	Albemarle Co.Fire Rescue	Vehicle	No	51		Undetermined
2006	Dec	12/13/2006	Wed	19	Henrico County	Henrico Division Of Fire	Vehicle	No	40	Undetermined	Other
2006	Dec	12/19/2006	Tue	19	Page County	Shenandoah Vol. Fire Dept.	Vehicle	No	42		Undetermined
2006	Dec	12/20/2006	Wed	12	Virginia Beach	Virginia Beach Fire Department	Vehicle	No	30	Undetermined	Exposed to fire products
2006	Dec	12/22/2006	Fri	10	Chesapeake	Chesapeake Fire Department	Structure	No	79	White	Exposed to fire products
2006	Dec	12/22/2006	Fri	13	Botetourt County	Fincastle Vol. Fire Dept.	Structure	No	67	White	Undetermined

As of 06/30/2009

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2006	Dec	12/22/2006	Fri	13	Botetourt County	Buchanan Vol. Fire Dept.	Structure	No	67	White	Exposed to fire products
2006	Dec	12/23/2006	Sat	13	Botetourt County	Fincastle Vol. Fire Dept.	Vehicle	No	0	White	Undetermined
2006	Dec	12/26/2006	Tue	20	Pulaski County	Dublin Volunteer Fire Departme	Structure	No	44	White	Exposed to fire products
2007	Jan	1/1/2007	Mon	06	Buckingham County	Glenmore Vol. Fire Dept.	Vehicle	No	25		
2007	Jan	1/5/2007	Fri	01	Shenandoah County	Strasburg Vol. Fire Dept.	Vehicle	No	99		Exposed to fire products
2007	Jan	1/12/2007	Fri	02	Petersburg	Petersburg Fire And Rescue	Structure	Yes	16		Exposed to fire products
2007	Jan	1/12/2007	Fri	02	Petersburg	Petersburg Fire And Rescue	Structure	Yes	4		Exposed to fire products
2007	Jan	1/12/2007	Fri	02	Petersburg	Petersburg Fire And Rescue	Structure	Yes	11		Exposed to fire products
2007	Jan	1/16/2007	Tue	23	Portsmouth	Portsmouth Fire Department	Structure	No	75	Black	Exposed to fire products
2007	Jan	1/17/2007	Wed	07	Newport News	Newport News Fire Department	Structure	No	22		Other
2007	Jan	1/20/2007	Sat	05	Lynchburg	Lynchburg Fire Department	Structure	No	33	White	Undetermined
2007	Jan	1/20/2007	Sat	11	Fairfax County	Fairfax County Fire And Rescue	Structure	No	91		
2007	Jan	1/21/2007	Sun	12	Virginia Beach	Virginia Beach Fire Department	Structure	No	86	White	Exposed to fire products
2007	Jan	1/27/2007	Sat	03	Augusta County	Verona Fire Department	Structure	No	45	White	Exposed to fire products
2007	Jan	1/28/2007	Sun	19	Franklin County	Frankllin County Emerg Srvs.	Mobile used as Fixed Structure	No	76	White	Exposed to fire products
2007	Jan	1/28/2007	Sun	19	Franklin County	Glade Hill Fire Dept.	Structure	No	76		Undetermined
2007	Feb	2/1/2007	Thu	16	Franklin	Franklin Fire & Rescue Dept.	Structure	No	0	Black	
2007	Feb	2/7/2007	Wed	17	Bedford County	Huddleston Vol. Fire Dept.	Structure	Yes	29		

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2007	Feb	2/7/2007	Wed	17	Bedford County	Huddleston Vol. Fire Dept.	Structure	Yes	11		
2007	Feb	2/7/2007	Wed	17	Bedford County	Huddleston Vol. Fire Dept.	Structure	Yes	4		
2007	Feb	2/11/2007	Sun	22	Wise County	Wise Vol. Fire Dept.	Structure	Yes	55	White	Exposed to fire products
2007	Feb	2/11/2007	Sun	22	Wise County	Wise Vol. Fire Dept.	Structure	Yes	47	White	Exposed to fire products
2007	Feb	2/17/2007	Sat	23	Hampton	Hampton Fire Department	Structure	Yes	58	White	Exposed to fire products
2007	Feb	2/17/2007	Sat	23	Hampton	Hampton Fire Department	Structure	Yes	81	White	Exposed to fire products
2007	Feb	2/18/2007	Sun	02	Roanoke	Roanoke Dept. Of Fire-Ems	Structure	No	40	Black	Exposed to fire products
2007	Feb	2/19/2007	Mon	00	Washington County	Goodson Dis Vol. Fire Dept.	Structure	Yes	62	White	
2007	Feb	2/20/2007	Tue	07	Wise County	Wise Vol. Fire Dept.	Structure	No	74	White	Exposed to fire products
2007	Feb	2/26/2007	Mon	01	Newport News	Newport News Fire Department	Structure	No	51		Caught/trapped
2007	Mar	3/2/2007	Fri	06	Chesterfield County	Chesterfield Fire & Ems	Structure	Yes	13	Black	Exposed to fire products
2007	Mar	3/2/2007	Fri	06	Chesterfield County	Chesterfield Fire & Ems	Structure	Yes	11	Black	Exposed to fire products
2007	Mar	3/3/2007	Sat	04	Chesterfield County	Chesterfield Fire & Ems	Structure	Yes	10		Exposed to fire products
2007	Mar	3/3/2007	Sat	04	Chesterfield County	Chesterfield Fire & Ems	Structure	Yes	40		Exposed to fire products
2007	Mar	3/3/2007	Sat	04	Chesterfield County	Chesterfield Fire & Ems	Structure	Yes	70		Exposed to fire products
2007	Mar	3/3/2007	Sat	06	Prince Edward County	Farmville Vol. Fire Dept.	Structure	Yes	22	White	Exposed to fire products
2007	Mar	3/3/2007	Sat	06	Prince Edward County	Farmville Vol. Fire Dept.	Structure	Yes	0	White	Exposed to fire products

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2007	Mar	3/16/2007	Fri	01	Fauquier County	Warrenton Volunteer Fire Comp	Vehicle	No	22		Exposed to fire products
2007	Mar	3/18/2007	Sun	03	Charlottesville	Charlottesville Fire Dept.	Structure	No	25		Exposed to fire products
2007	Mar	3/18/2007	Sun	05	Franklin County	Franklin County Emerg Srvs.	Structure	No	73	White	Exposed to fire products
2007	Mar	3/18/2007	Sun	05	Franklin County	Rocky Mount Fire Department	Mobile used as Fixed Structure	No	73	White	
2007	Mar	3/22/2007	Thu	02	Mecklenburg County	South Hill Vol. Fire Dept.	Structure	No	70	Black	Exposed to fire products
2007	Mar	3/24/2007	Sat	18	Tazewell County	Richlands Vol. Fire Dept.	Structure	No	46		
2007	Mar	3/26/2007	Mon	02	Richmond	Richmond Fire & Emergency Serv	Structure	Yes	4		Exposed to fire products
2007	Mar	3/26/2007	Mon	02	Richmond	Richmond Fire & Emergency Serv	Structure	Yes	2		Exposed to fire products
2007	Apr	4/1/2007	Sun	00	Orange County	Orange Vol. Fire Co.	Vehicle	No	17	White	Caught/trapped
2007	Apr	4/5/2007	Thu	22	Giles County	Eggleston Vol. Fire Dept.	Structure	No	74	White	Exposed to fire products
2007	Apr	4/6/2007	Fri	03	Lee County	Pennington Gap Vol. Fire Dept.	Structure	Yes	50		
2007	Apr	4/6/2007	Fri	03	Lee County	Pennington Gap Vol. Fire Dept.	Structure	Yes	11		
2007	Apr	4/14/2007	Sat	08	Newport News	Newport News Fire Department	Structure	No	32		Undetermined
2007	Apr	4/20/2007	Fri	02	Charlotte County	Drake Branch Vol. Fire Dept.	Structure	No	68		
2007	Apr	4/21/2007	Sat	03	Dickenson County	Haysi Vfd	Structure	No	50	White	Exposed to fumes other than smoke
2007	May	5/8/2007	Tue	02	Virginia Beach	Virginia Beach Fire Department	Structure	No	23	White	Exposed to fire products
2007	May	5/17/2007	Thu	01	Augusta County	Dooms/Wilson Vol.Fire Dept.	Structure	No	45		

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2007	May	5/26/2007	Sat	06	Virginia Beach	Virginia Beach Fire Department	Structure	No	80	Black	Exposed to fire products
2007	May	5/26/2007	Sat	23	Suffolk	Suffolk Fire Department	Vehicle	No	1		
2007	Jun	6/6/2007	Wed	14	Richmond	Richmond Fire & Emergency Serv	Vehicle	No			Caught/trapped
2007	Jun	6/6/2007	Wed	14	Spotsylvania County	Spotsylvania Fire & Rescue	Structure	No	33		Undetermined
2007	Jun	6/10/2007	Sun	17	Bristol	Main Station	Structure	No	62	White	Exposed to fire products
2007	Jun	6/15/2007	Fri	22	Virginia Beach	Virginia Beach Fire Department	Structure	No	10	Black	Exposed to fire products
2007	Jun	6/27/2007	Wed	01	Chesapeake	Chesapeake Fire Department	Other	No	50	White	Exposed to fire products
2007	Jun	6/27/2007	Wed	23	Colonial Heights	Colonial Heights Fire Dept.	Structure	No	45	White	Exposed to fire products
2007	Jul	7/7/2007	Sat	11	Petersburg	Petersburg Fire And Rescue	Structure	No	0		Undetermined
2007	Aug	8/5/2007	Sun	12	Chesapeake	Chesapeake Fire Department	Other	No	71	White	Exposed to fire products
2007	Aug	8/9/2007	Thu	02	Richmond	Richmond Fire & Emergency Serv	Structure	No			
2007	Aug	8/15/2007	Wed	00	Richmond	Richmond Fire & Emergency Serv	Structure	No			Exposed to fire products
2007	Sep	9/1/2007	Sat	02	Chesterfield County	Chesterfield Fire & Ems	Vehicle	No	50		Exposed to fire products
2007	Oct	10/19/2007	Fri	02	Covington	Covington Fire Department	Structure	No	77	White	Exposed to fire products
2007	Oct	10/23/2007	Tue	00	Sussex County	Sussex Courthouse Vol. F.D.	Vehicle	No	18		
2007	Oct	10/28/2007	Sun	00	Richmond	Richmond Fire & Emergency Serv	Structure	No	49		
2007	Nov	11/14/2007	Wed	08	King George County	King George Emergency Services	Structure	No	72	Black	Undetermined
2007	Nov	11/25/2007	Sun	09	Montgomery County	Blacksburg Fire Department	Structure	No	85		
2007	Nov	11/28/2007	Wed	01	Petersburg	Petersburg Fire And Rescue	Structure	Yes	16		Exposed to fire products

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2007	Nov	11/28/2007	Wed	01	Petersburg	Petersburg Fire And Rescue	Structure	Yes	7		Exposed to fire products
2007	Nov	11/28/2007	Wed	01	Petersburg	Petersburg Fire And Rescue	Structure	Yes	0		Exposed to fire products
2007	Dec	12/3/2007	Mon	20	Chesterfield County	Chesterfield Fire & Ems	Structure	No	60	Black	Exposed to fire products
2007	Dec	12/22/2007	Sat	01	Henry County	Ridgeway Vol. Fire Dept.	Structure	No	31		
2007	Dec	12/23/2007	Sun	02	Newport News	Newport News Fire Department	Structure	No	53		Fell, slipped
2007	Dec	12/23/2007	Sun	18	Russell County	Belfast-Rosedale Vol. F.D.	Structure	No	47	White	Exposed to fire products
2007	Dec	12/28/2007	Fri	00	Fairfax County	Fairfax County Fire And Rescue	Structure	Yes	16		
2007	Dec	12/28/2007	Fri	00	Fairfax County	Fairfax County Fire And Rescue	Structure	Yes	13		
2008	Jan	1/5/2008	Sat	04	James City County	James City Co. Fire Department	Structure	No	77	White	Exposed to fire products
2008	Jan	1/5/2008	Sat	13	Danville	Danville Fire Department	Structure	Yes	62	Black	Exposed to fire products
2008	Jan	1/5/2008	Sat	13	Danville	Danville Fire Department	Structure	Yes	65	Black	Exposed to fire products
2008	Jan	1/5/2008	Sat	13	Danville	Danville Fire Department	Structure	Yes	75	Black	Exposed to fire products
2008	Jan	1/7/2008	Mon	19	Henrico County	Henrico Division Of Fire	Structure	No	52	White	Exposed to fire products
2008	Jan	1/8/2008	Tue	15	Spotsylvania County	Spotsylvania Fire & Rescue	Structure	No	32		Other
2008	Jan	1/12/2008	Sat	07	Fairfax County	Fairfax County Fire And Rescue	Structure	No	39		
2008	Jan	1/16/2008	Wed	15	Shenandoah County	Woodstock Fire Dept.	Structure	No	71	White	
2008	Jan	1/18/2008	Fri	12	Winchester	Winchester Fire & Rescue	Structure	No	50		
2008	Jan	1/21/2008	Mon	22	Henrico County	Henrico Division Of Fire	Structure	No	49	White	Undetermined

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2008	Jan	1/26/2008	Sat	19	Albemarle County	Albemarle Co.Fire Rescue	Structure	No	44	White	Exposed to fire products
2008	Jan	1/30/2008	Wed	01	Nelson County	Lovingston Vol. Fire Dept.	Structure	Yes	38		
2008	Jan	1/30/2008	Wed	01	Nelson County	Lovingston Vol. Fire Dept.	Structure	Yes	11		
2008	Feb	2/4/2008	Mon	03	Radford	Radford Fire Department	Structure	No	34	White	Exposed to fire products
2008	Feb	2/5/2008	Tue	01	Virginia Beach	Virginia Beach Fire Department	Structure	No	60	White	Exposed to fire products
2008	Feb	2/9/2008	Sat	23	Southampton County	Boykins Vol. Fire Dept.	Structure	No	35	Black	Undetermined
2008	Feb	2/15/2008	Fri	15	Danville	Danville Fire Department	Structure	No	50	Black	Exposed to fire products
2008	Feb	2/16/2008	Sat	09	Harrisonburg	Harrisonburg Fire Department	Structure	No	70	Other	Undetermined
2008	Feb	2/19/2008	Tue	22	Richmond	Richmond Fire & Emergency Serv	Structure	No	89	Black	Exposed to fire products
2008	Feb	2/23/2008	Sat	09	Franklin County	Snow Creek Vol. Fire Dept.	Structure	No	75		Undetermined
2008	Feb	2/29/2008	Fri	21	Henry County	Dyer'S Store Vol. Fire Dept.	Structure	No	47		Undetermined
2008	Mar	3/1/2008	Sat	19	Fairfax County	Fairfax County Fire And Rescue	Structure	No	57		
2008	Mar	3/5/2008	Wed	01	Fairfax County	Fairfax County Fire And Rescue	Structure	No	48		
2008	Mar	3/7/2008	Fri	05	Arlington County	Arlington Co. Fire Dept.	Structure	No	91	White	Exposed to fire products
2008	Apr	4/1/2008	Tue	23	Dinwiddie County	Dinwiddie Vol. Fire & Rescue	Vehicle	No	43	Undetermined	Exposed to fire products
2008	Apr	4/10/2008	Thu	08	Danville	Danville Fire Department	Structure	No	61	Black	Exposed to fire products
2008	Apr	4/11/2008	Fri	14	Spotsylvania County	Spotsylvania Fire & Rescue	Other	No	15		Exposed to fire products
2008	Apr	4/14/2008	Mon	13	Virginia Beach	Virginia Beach Fire Department	Structure	No	50		Exposed to fire products

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2008	Apr	4/17/2008	Thu	04	Warren County	Front Royal Vol. Fire Dept.	Structure	Yes	8		Exposed to fire products
2008	Apr	4/17/2008	Thu	04	Warren County	Front Royal Vol. Fire Dept.	Structure	Yes	4		Exposed to fire products
2008	May	5/27/2008	Tue	13	Powhatan County	Powhatan Co. Vol. Fire Dept.	Structure	No	1	White	Undetermined
2008	Jun	6/17/2008	Tue	01	Fairfax County	Fairfax County Fire And Rescue	Structure	No	52		
2008	Jun	6/18/2008	Wed	02	Goochland County	Goochand Co. Fire/Rescue Dept.	Structure	No	75	White	
2008	Jun	6/22/2008	Sun	03	Hampton	Hampton Fire Department	Vehicle	No	21		Undetermined
2008	Jun	6/22/2008	Sun	04	Petersburg	Petersburg Fire And Rescue	Structure	No	53		Exposed to fire products
2008	Jun	6/26/2008	Thu	22	Surry County	Claremont Vol. Fire Dept.	Structure	No	55		
2008	Jun	6/27/2008	Fri	02	Newport News	Newport News Fire Department	Structure	No	19		Exposed to fire products
2008	Jun	6/27/2008	Fri	04	King George County	King George Emergency Services	Structure	No	77	White	Exposed to fumes other than smoke
2008	Jul	7/2/2008	Wed	06	Loudoun County	Aldie Vol. Fire Dept.	Vehicle	No	20		
2008	Jul	7/4/2008	Fri	08	Martinsville	Martinsville Fire Department	Structure	No	62	White	Exposed to fire products
2008	Jul	7/9/2008	Wed	01	Newport News	Newport News Fire Department	Vehicle	No	52	White	Exposed to fire products
2008	Jul	7/12/2008	Sat	22	Roanoke	Roanoke Dept. Of Fire-Ems	Vehicle	No	25	Undetermined	Exposed to fire products
2008	Jul	7/23/2008	Wed	00	Bedford	Bedford Vol. Fire Department	Vehicle	No	37		
2008	Jul	7/23/2008	Wed	14	Virginia Beach	Virginia Beach Fire Department	Structure	No	50	White	Undetermined
2008	Jul	7/28/2008	Mon	04	Arlington County	Arlington Co. Fire Dept.	Structure	No	84	White	Exposed to fire products
2008	Aug	8/8/2008	Fri	13	Fairfax County	Fairfax County Fire And Rescue	Vehicle	No	15		
2008	Aug	8/18/2008	Mon	15	Floyd County	Floyd Co. Vol. Fire Dept. #1	Structure	No	63		
2008	Sep	9/24/2008	Wed	04	Henrico County	Henrico Division Of Fire	Structure	Yes	0		
2008	Sep	9/24/2008	Wed	04	Henrico County	Henrico Division Of Fire	Structure	Yes	34	Asian	Undetermined

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2008	Sep	9/24/2008	Wed	04	Henrico County	Henrico Division Of Fire	Structure	Yes	28	Asian	Undetermined
2008	Oct	10/20/2008	Mon	02	Dinwiddie County	Namozine Vol. Fire & Res Dept.	Structure	No	55	White	Undetermined
2008	Oct	10/28/2008	Tue	20	Roanoke County	Roanoke County Fire & Rescue	Structure	No	58		Exposed to fire products
2008	Nov	11/8/2008	Sat	01	James City County	James City Co. Fire Department	Mobile used as Fixed Structure	No	77	Black	Exposed to fire products
2008	Nov	11/20/2008	Thu	23	Martinsville	Martinsville Fire Department	Structure	No	45		Undetermined
2008	Dec	12/4/2008	Thu	22	Hampton	Hampton Fire Department	Structure	Yes	9		Caught/trapped
2008	Dec	12/4/2008	Thu	22	Hampton	Hampton Fire Department	Structure	Yes	8		Caught/trapped
2008	Dec	12/4/2008	Thu	22	Hampton	Hampton Fire Department	Structure	Yes	72	Black	Exposed to fire products
2008	Dec	12/5/2008	Fri	01	Essex County	Tappahannock-Essex Vol. Fire	Structure	No	44	White	Exposed to fire products
2008	Dec	12/7/2008	Sun	00	Smyth County	Saltville Vol. Fire Dept.	Structure	No	53	White	Exposed to fire products
2008	Dec	12/11/2008	Thu	18	Albemarle County	Albemarle Co.Fire Rescue	Vehicle	No	64	White	Exposed to fire products
2008	Dec	12/14/2008	Sun	11	Sussex County	Stony Creek Vol. Fire Dept.	Structure	No	76	Black	
2008	Dec	12/24/2008	Wed	20	Westmoreland County	Colonial Beach Vol. Fire Dept.	Mobile used as Fixed Structure	No	82		Exposed to fire products
2008	Dec	12/28/2008	Sun	20	Richmond	Richmond Fire & Emergency Serv	Structure	No	76	White	Undetermined
2009	Jan	1/8/2009	Thu	22	Washington County	Abingdon Vol. Fire Dept.	Other	No	84	White	Exposed to fire products

Reported VFIRS Fire Deaths
2004 - 1st Qtr 2009

Yr	Mon	Alarm Date	DOW	24-Hr	Locallity	Fire Dept	Fire Category	Multiple Deaths	Age	Race	Cause of Death
2009	Jan	1/10/2009	Sat	05	Lancaster County	Kilmarnock Vol. Fire Dept.	Mobile used as Fixed Structure	No	16	Black	
2009	Jan	1/10/2009	Sat	09	Newport News	Newport News Fire Department	Structure	No	84	White	Exposed to fire products
2009	Jan	1/12/2009	Mon	08	Galax	Galax Vol. Fire Department	Structure	Yes	39		
2009	Jan	1/12/2009	Mon	08	Galax	Galax Vol. Fire Department	Structure	Yes	28		
2009	Jan	1/12/2009	Mon	08	Galax	Galax Vol. Fire Department	Structure	Yes	4		
2009	Jan	1/25/2009	Sun	06	Henry County	Axton Vol. Fire Dept.	Structure	No	88		
2009	Jan	1/25/2009	Sun	14	Hampton	Hampton Fire Department	Structure	No	90	Black	Exposed to fire products
2009	Jan	1/30/2009	Fri	22	Appomattox County	Appomattox Vol. Fire Dept.	Structure	No	50		
2009	Feb	2/5/2009	Thu	09	Hampton	Hampton Fire Department	Structure	No	62	White	Exposed to fumes other than smoke
2009	Feb	2/8/2009	Sun	01	Amherst County	Monelison Volunteer Fire Dept	Structure	No	53	White	Exposed to fire products
2009	Feb	2/9/2009	Mon	09	Chesapeake	Chesapeake Fire Department	Structure	No	79	White	Exposed to fire products
2009	Feb	2/16/2009	Mon	07	Rockingham County	Headquarters Rockingham County	Structure	No	17	White	Caught/trapped
2009	Feb	2/16/2009	Mon	07	Rockingham County	Bridgewater Fire Company	Structure	No	17	White	Undetermined
2009	Feb	2/16/2009	Mon	14	Fairfax County	Fairfax County Fire And Rescue	Structure	No	77		
2009	Mar	3/1/2009	Sun	10	Manassas Park	Manassas Park Fire Department	Structure	No	62	Other	Exposed to fire products
2009	Mar	3/3/2009	Tue	21	Page County	Stanley Vol. Fire Dept.	Structure	No	5	White	Exposed to fire products
2009	Mar	3/6/2009	Fri	12	Arlington County	Arlington Co. Fire Dept.	Other	No	55	Black	Exposed to fire products
2009	Mar	3/10/2009	Tue	21	Suffolk	Suffolk Fire Department	Vehicle	No			Undetermined
2009	Mar	3/21/2009	Sat	05	Pittsylvania County	Gretna	Structure	No	87	Black	

residential fire sprinkler system is appropriate for their situation.

NAHB strongly disagrees with the fire services perception of America's fire problem and the proposed solution to reduce the number of fire fatalities that occur each year. In 1977, less than 0.008% of the housing market was affected by structure fires. In 2005, that number was reduced to less than 0.002%. Over the past three decades, there has a substantial decrease in the number of residential structure fires in relation to the growth of American housing. No one can predict when or where a fire will occur, but to require every home to be equipped with a residential sprinkler system based on the figures below is not cost-effective.

NOTE:

In 2005, there were 76-84 million occupied housing units in year-round one- or two-family dwellings and 85-95 million total housing units in one- or two-family dwellings. There were 287,000 reported one- or two-family dwelling structure fires. That is about 3-4 per thousand. NAHB says the ratio was "less than 0.002%". That is 2 per *hundred* thousand. They are off by a factor of more than a hundred. And they didn't say *reported* structure fires; they just said structure fires. That means unreported fires fall within their scope and the correct ratio is more like 1 in 10 to 1 in 14. NAHB reaches its conclusion about cost-effectiveness of sprinkler systems by underestimating the size of the problem by a factor of more than a hundred.

Consideration as to whether the requirement for fire sprinklers in dwellings be mandatory should remain a local issue. The sole purpose of an Appendix P in the 2006 International Code was to provide local jurisdictions with the means to adopt a code or standard that is applicable to their community. Not every jurisdiction agrees that radon resistant construction, patio coverings, and safety inspections of existing appliances need to be regulated or inspected in their jurisdiction. Contrary to the belief of some activists, several jurisdictions have decided that Appendix P (the provisions for residential sprinkler systems) is not applicable to their state or local jurisdictions. Of the 47 states that have adopted the International Residential Code, none have adopted the 2006 IRC with the inclusion of

Appendix P. During the adoption prose in six states, there was a proposal put forth to include appendix P in the formal adoption of the 2006 IRC and the proposal was voted down every time.

According to the U.S. fire administration more than half states in America are below the national fire death rate of 13.6 per million and over the past ten years the number of one- and two- family dwelling fires, deaths and injuries have fallen (6%, 18% and 26% respectively).

NOTE:

Roughly half the states have a fire death rate below the national average. That is exactly what one expects in a distribution around the average, but that fact has no relevance to this issue. NFPA statistics show comparable declines in the number of fires, civilian deaths, and civilian injuries in fires in one- or two-family dwellings. But again, by themselves, these declines say nothing about the need for, or value of, home sprinklers.

While the fire service and sprinkler advocates acknowledge that the median age of a home is 32 years, the connection between fire deaths and the age of the home is elusive. For several years data has been collected for several relevant facts about fires. The cause of the fire, whether smoke alarms were present and were working, type of smoke alarm present, whether the fire was confined and did not activate the sprinkler system.

NOTE:

The second half of the following sentence is important: "...the connection between fire deaths and the age of home is elusive." This is a much softer and less definitive statement than NAHB usually makes and suggests that they are not so sure of the connection as their previous statements have indicated. NAHB economists have conducted complex multi-variable statistical models to try to make the point that risks are lower in newer homes. NFPA has pointed out the flaws in those models and shown that significant results are only found when newer homes correlate with wealthier, better educated occupants.

While there have been no studies conducted to investigate whether fire fatalities are less likely to occur in newer homes, there is supporting evidence of this in reports issued by NFPA regarding the performance of smoke alarms. According to these reports, there is a significant difference in the number of fatalities and the number of fires when the smoke alarm present. This includes information regarding smoke alarms that were either battery operated, hardwired with battery backup or hardwired.

NOTE:

"While there have been no studies conducted to investigate whether fire fatalities are less likely to occur in newer homes, there is supporting evidence of this in reports issued by NFPA regarding the performance of smoke alarms." The first part of this sentence is erroneous, as noted above; NAHB and NFPA have both conducted studies on any link between fire fatalities and age of home. The second part of the sentence is misleading. What the cited NFPA analysis shows is this: Smoke alarms work, and advanced features of smoke alarms (e.g., hard-wiring, interconnection) work better. Because smoke alarms are easily retrofitted, as are many of the advanced features of smoke alarms, this fact says nothing about new homes other than that they are statistically more likely to have smoke alarms and to have them with advanced features. NFPA analyses have increasingly shifted to estimating the impact of home sprinklers when added to homes with smoke alarms, and those results demonstrate anew the tremendous benefits achieved by sprinklers *on top of* the benefits already achieved by smoke alarms.

According to April 2007 Report "U.S. Experience with Smoke Alarms and other Fire Detection/Alarm Equipment" by Marty Ahrens, 65% of the reported residential home fire deaths occurred in homes where there was no smoke alarm present (43%) or did not operate (22%). Of the 35% fire fatalities that occurred when a smoke alarm was present and operated, it was reported that two-thirds of the non-confined home structure fires occurred in dwellings with battery operated smoke alarms with the remaining third evenly divided between homes with hardwired and hardwired with battery backup.

Source	Code Cycle Required	# of Fires	# of Fatalities	# of Injuries	Property Damage in Millions
Battery Only	Before 1982	88,300	1,230	5,850	$2,353
Hardwired only	1982-1992	19,900	170	1,300	$743
Hardwire/Battery	1992-Present	18,000	210	1,490	$568

Reference: April 2007 Report "U.S. Experience with Smoke Alarms and other Fire Detection/Alarm Equipment" by Marty Ahrens

NOTE:

This table does *not* show what NAHB claims it shows – that there are fewer fires with advanced-feature smoke alarms – because it does not show how many housing units are so equipped. (This is a recurring theme in many of the analyses performed by NAHB. Important variables needed to make the conclusions valid and place them in proper context are missing).

From this information we can see that as the requirements for smoke alarms changed, as well as other requirements over the years, that the newer stock has had fewer fires and fewer fire fatalities. Along with improvements to the power source, the *National Fire Code* has also increased the number of required smoke alarms in a one- and two- family dwelling over the years. In 1992 it required that all smoke alarms be interconnected.

When you consider the advances made in the requirements of smoke alarms and look at the results in reducing the number of fire fatalities, the solution is educating the public about the importance of working smoke alarms and practicing proper fire prevention.

NOTE:

NAHB would prefer an exclusive emphasis on a strategy of educating homeowners, which would not involve any requirements on them. But they have offered no evidence of the cost-benefit comparison for sprinklers or for an educational program on smoke

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alarms, let alone of a joint strategy to do both.

The most cost-effective means of reducing the loss life is through increasing the public's awareness on the use and maintenance of smoke alarms. According to NFPA reports an estimated 890 live could be saved annually if home were equipped with working smoke alarms. 65% of the reported fire fatalities from 2000-2004 occurred in homes were smoke alarms were either not present or were present but failed to operate. CPSC surveys have shown that while 88% of the households screened had at least one smoke alarm, 72% of these smoke alarms were battery powered only.

NOTE:

It probably is true that the *most* cost-effective strategy to reduce fire deaths is to build on smoke alarm successes. But that is not the *only* cost-effective strategy and it certainly is not the *most* effective strategy, i.e., the strategy that will produce the greatest reduction in fire deaths. This is nothing more than a bait-and-switch pitch dressed up with irrelevant, inaccurate or misleading statistics designed to confuse readers or confirm people in a position they already hold but not to make or support a serious case for their position.

The Solutions 2000 report issued by USFA clearly concludes that, "To effectively address the fire safety needs of any population, the three E's, **education, engineering, and enforcement**, must be addressed." The report explains that there are some fire risks that may be best dealt with through educational efforts, but others may require increased enforcement or engineering techniques. On its own, each of the three E's "exerts a synergistic effect on the others, however, and together they are much more effective than individually." Effective solutions for community risk reduction must include the three E's collectively, in order "to reduce the effects of fire, if not prevent them."

Our position is: Smoke alarms work well and have saved thousands of lives. Sprinklers (as the single most important engineering technique) will save thousands more lives and

billions of dollars in property. With these huge benefits – more than any other fire safety strategy can offer – sprinklers are well worth the money. There is nothing in this piece that seriously engages that position.

APSP-7. We would like for this Board to reject the implementation of the APSP-7 at least until the meeting in September comes to a conclusion in regard to what the ICC ruling. We look forward to working with the Board and other stakeholders regarding this process.

MR. CALHOUN: Ed Rhodes followed by David Thomas.

MR. RHODES: Mr. Chairman and Board members, good morning. My name is Ed Rhodes and I represent a number of fire service organizations throughout the state and you'll be hearing from them today also. I want to briefly discuss residential sprinklers and tell you that you'll hear probably conflicting testimony from both fire services and from the opponents of this proposal. You'll hear how modern technology and better construction practices make new homes safer for the consumers. Technology and construction has changed our profession and fire services from when I first started 35 years ago. Now, I was not around when horses pulled the fire wagons and equipment some of my colleagues would have you believe. Today residential structures that we respond to are more dangerous, construction of lightweight components that are prone to early collapse. We've faced daily challenges with fires that can double in size every 30 to 60 seconds. Keeping that last statement

in mind, let us add to this equation. In 2008, there was $325 million in property damage and contents loss in the Commonwealth of Virginia due to fire. The fire service on the other hand, saved over $6 billion in property and contents. There was 544 civilian casualties and 336 fire service casualties. In April of this year alone there were 26 civilian fire deaths in the state. Now, remembering the previous facts about doubling in time, the average time for evacuation from a residence is three minutes. Let me repeat that, three minutes to get out of the house. This is before the structure becomes uninhabitable. Now, add the fact that the average fire response time 6.9 minutes and that's an overall statewide average through both career and volunteer departments. I want to reiterate that fact so each of you can fully understand what we in the fire service are faced with on a daily basis with the current building practices. First the fire doubles in size every 30 to 60 seconds. Two, the escape time is three minutes if you're not physically challenged or an invalid. Third, the average fire department response time is 6.9 minutes, yet we in the fire service most understand the dynamics of the fire environment and the critical line we operate in. We're forced to make special decisions based on imperfect information and come up with a plan. All of this is time sensitive. When it's your house or your life or your

family's lives is in peril, do you want, would you not want all the protection afforded you no matter what the cost? What's the cost of someone's life? Given the fact that residential sprinklers have proven to be cost effective and affordable. We do not get the chance to do it over in the fire service. We get one try and it better be right or we get to live with it. In closing Mr. Chairman, the opponents use the same tactics they have used for 20 years. It will increase the costs, use a smoke alarm, carbon monoxide, sprinkler head problems, the DCR water quality regulations, even using wrong information on the website, smoke does not and never has set off a sprinkler. Which would you rather have, sprinkler head putting out 10 to 12 gallons per minutes or a fire fighter with a hose putting out a 100 gallons per minute or a nozzle in your bedroom window putting out 250 gallons per minute for a single room draining out the front door. Their arguments are old news.

Mr. Chairman and members of the Board, I implore you to reverse the decision of the Code and Standards Committee on residential sprinklers and let this proposal be properly vented by all stakeholders that are in this room. Remember, every argument, both for and against it have already been heard in the ICC hearing. Thank you.

MR. BARBER: Good morning Mr. Chairman and members of the Board. My name is James Barber and I'm the fire official in Albemarle County and Fire Marshal. Our county is not unlike some throughout the state in that we have 750 square miles and roughly 80 percent of that is rural. We have a combination department so we have paid firefighters and volunteers. We have volunteer firefighters that run out of ten stations. In our rural district our response time goal is to be on the scene within 8 minutes, that's our urban goal. In our rural the response time is 13 minutes. You've already heard that a fire grows and doubles in size every minute that it is in a free burning state. This means in the 10 to 13 minutes that it takes the fire department to arrive in Albemarle County, the fire has already had a chance to grow substantially. What I'd ask you to do is reverse the action before you today and to adopt the ICC recommendation. One of the assertions about sprinklers on homes with well water is that it would be unaffordable and too costly to try. The truth is that the 13D System that's for residential sprinklers calculates the water flow from two minutes. That's roughly 13 gallons per head per minute. If you extrapolate that out, you're talking about a water tank that holds 300 gallons and a pump that will pump the water through the system. The cost is going to

be held down on that because the pump and the tank don't have to be rated. It's not like the sprinkler system you have here where all the components must be rated. There's already a standard out there that's a compromised standard. I would ask you to make the residential sprinklers mandatory. Thank you.

MR. CALHOUN: Dave Bailey.

MR. BAILEY: Mr. Chairman and the Board, thank you for allowing us to speak and participate here. I'm speaking today as a resident of Powhatan County. In 1992 my wife and I built a home in Powhatan with no public water in my area we are on a well. In the contract I worked with my builder to set aside one week to have a residential sprinkler system installed. The Virginia Sprinkler Company installed the full 13-D System in 3 days. The full system costs me $3,020. My house has 2,100 square feet of floor area. So, the cost for the system was less than $1.50 per square foot. Obviously the insurance industry knows the benefit of sprinkler systems in buildings therefore, my insurance premiums have been reduced with a 13 percent sprinkler credit. Initially that equals to $86 a year in savings. So, to date my premium savings have paid half the cost of the system. Over the life of the house, the system will more than pay for itself. I've heard some discussion about maintenance of the

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Mr. Calhoun,

Given several national studies which support residential sprinkler systems, I am in support of maintaining the residential sprinkler provisions of the International Residential Code when this national model code is adopted here in Virginia.

With today's light weight construction and given the high heat release rates of today's furnishing and decorations, it is imperative to have active fire safety features in new homes. Based on a NIST study, the occupants of today's modern homes have only three minutes to evacuate. That is if they are capable of evacuating. The smoke alarms home builders are touting as the end all for residential fire safety will do nothing for those occupants who are too young or physically incapable of getting out of the house on their own. These population groups are the most at risk for home fire deaths, and must be better protected.

For this reason, I am asking the DHCD Board to retain the sprinkler requirements as adopted by the International Code Council in 2008. These systems are the only active fire protection available that will make an impact on home fire safety.

Sincerely,

Dana L. Main
26210 Townfield Drive
Port Royal, VA 22535

From: Eubank, Paula (DHCD)
Sent: Wednesday, July 01, 2009 1:45 PM
To: Hodge, Vernon (DHCD)
Subject: Public Comment: Residential Sprinklers Must be Adopted!!!

Paula N. Eubank
Associate Director of TASO
Division of Building and Fire Regulation
Virginia Department of Housing and Community Development
804.371.7172
paula.eubank@dhcd.virginia.gov

The Virginia Department of Housing and Community Development (DHCD) will be relocating its offices on July 9 and 10. Due to this occurrence, DHCD will be closed to business on these two days. The agency's new address will be:

Virginia Department of Housing and Community Development, Main Street Centre, 600 East Main Street, Suite 300, Richmond, Virginia 23219

From: Bowman, Brett R. [mailto:bbowman@pwcgov.org]
Sent: Wednesday, July 01, 2009 12:56 PM
To: Eubank, Paula (DHCD)
Subject: Residential Sprinklers Must be Adopted!!!

Steve Calhoun
Department of Housing and Community Development
501 N. Second Street
Richmond, Virginia 23219-1221

Mr. Calhoun,

Given several national studies which support residential sprinkler systems, I am in support of maintaining the residential sprinkler provisions of the International Residential Code when this national model code is adopted here in Virginia.

With today's light weight construction and given the high heat release rates of today's furnishing and decorations, it is imperative to have active fire safety features in new homes. Based on a NIST study, the occupants of today's modern homes have only three minutes to evacuate. That is if they are capable of evacuating. The smoke alarms home builders are touting as the end all for residential fire safety will do nothing for those occupants who are too young or physically incapable of getting out of the house on their own. These population groups are the most at risk for home fire deaths, and must be better protected.

For this reason, I am asking the DHCD Board to retain the sprinkler requirements as adopted by the International Code Council in 2008. These systems are the only active fire protection available that will make an impact on home fire safety.

Sincerely,

Assistant Chief Brett R. Bowman
Prince William County
Department of Fire and Rescue
703 - 792 - 6388

"Are you ready for a MAYDAY?"

Nulli
Secundus

CITY OF NEWPORT NEWS FIRE DEPARTMENT

FIRE ADMINISTRATION
2400 Washington Avenue • 6th Floor • Newport News, Virginia 23607
Phone: (757) 926-8404 • Fax: (757) 926-8602

Kenneth L. Jones, Fire Chief
kjones@nngov.com

July 7, 2009

Steve Calhoun
Department of Housing and Community Development
501 N. Second Street
Richmond, Virginia 23219-1221

Dear Mr. Calhoun:

This letter is submitted as a form of public comment to the proposed regulations that are about to be adopted by the Department of Housing and Community Development (DHCD). Please pass this information to the board for consideration. Given several national studies supporting residential sprinkler systems, it is incumbent upon the Chief Fire Officer of each community, tasked with the responsibility of protection of the lives and property of the citizens and the firefighters from the inherent dangers of structural fires, to support the use of sprinkler systems in all residential structures.

I am especially concerned with the prospect of sending firefighting personnel into harm's way in structures that utilize lightweight construction. This has become quite prevalent in today's residential communities. There is an inability of these structural elements to resist the ravaging effects of high head generated by the fire load produced by the furnishing and decorations found in homes today without being protected by a protective barrier, in conjunction with a home fire sprinkler system.

The effectiveness of these sprinkler systems, over the long term, will reduce the fire loss in the community and help save lives. Most fires are contained and or extinguished with the activation of one sprinkler head. Residential systems have been engineered to cost approximately $1.65 per square foot. The systems provide 24/7 protection to the occupants, especially those who are very young, the elderly, and those with special needs.

For this reason, I, as a member of the Virginia Fire Chief's Executive Board and the Fire Chief for the City of Newport News, am asking the DHCD Board to retain the sprinkler requirements as adopted by the International Code Council in 2008. These systems are the only active fire protection available that will make an impact on home fire safety.

Sincerely,

Kenneth L. Jones
Fire Chief, NNFD

Virginia Fire Prevention Association

P.O. Box 7745
Woodbridge, VA 22195

Thomas D. Fleury, Chairman
Board of Housing and Community Development
Main Street Centre
600 East Main Street, Suite 300
Richmond, VA 23219

July 7, 2009

RE: 2009 Code Adoption

Dear Mr. Fleury:

During the recent meeting of the Codes and Standards Committee, one of the members stated "I don't have enough information to make a decision," (regarding the sprinkler provisions contained in the IRC). The board has been peppered with statements and information from interest groups. Much of the information is not factual. In an effort to address the concerns addressed by the Home Builders Association of Virginia regarding residential sprinklers, the Virginia Fire Prevention Association has developed a position paper that addresses HBVA's *10 Reasons Why Mandating Fire Sprinklers Makes No Sense For Virginia,* point for point. I have attached our document, as well as Dr. John Hall's *Commentary on the NAHB Recommended State & Local Amendments to the 2009 International Residential Code (IRC).*

Please consider these documents in your deliberations. Thank you and the Board for your efforts in ensuring the safety and security of the citizens of the Commonwealth.

Sincerely,

Phil Paquette

Phil Paquette
President

Virginia Fire Prevention Association

July 7, 2009

Response to Home Builders of Virginia Statement Regarding Residential Sprinklers

The Home Builders Association of Virginia has made a considerable effort to stop the Virginia Board of Housing & Community Development from adopting the *2009 International Residential Code* as approved by the membership of the International Code Council. We feel that this is regrettable and feel obligated to respond to their objections point for point.

This is the Virginia Fire Prevention Association's response to The Home Builders Association of Virginia's *10 Reasons Why Mandating Fire Sprinklers Makes No Sense For Virginia,* available at their website www.hbav.com .

HBAV Assertion #1

> Statistics show today's better built homes are saving lives. From 1979-2003 the death rate per million persons from house fires dropped 58 percent, according to the U.S. Centers for Disease Control. That trend will continue as more new housing stock is built, stronger building codes are enacted and especially as smoke alarm maintenance by homeowners improves.

VFPA Reply

The reduction of fire fatalities has little to do with "better built homes." To the contrary, modern residential construction has shifted from tradition dimension lumber framing to lightweight engineered structural components. The performance of these structures in fire conditions demonstrates a significant reduction in fire safety.

- A recent Underwriters Laboratory study funded by the Department of Homeland Security, *Report on Structural Stability of Engineered Lumber in Fire Conditions* documented the striking differences between traditional and engineered systems. For example, a traditionally constructed floor system, without a drywall ceiling to protect its underside, withstood the test fire for 18 minutes. By comparison, a similar system using modern engineered wooden I-beams survived for about six minutes.
- Another study conducted by the National Research Council of Canada, concluded: "With the relatively severe fire scenarios used in the experiments, the times to reach structural failure for the wood I-joist, steel C-joist, metal plate, and metal web wood truss assemblies were 35 to 60 percent shorter than that for the [traditional] solid wood joist assembly."

The performance of lightweight components underscore the need for residential sprinklers in modern residential construction.

HBAV Assertion #2

Sprinklers are rarely needed for house fires. Sprinkler proponents claim that a residential system is reliable in 96-99 percent of all reported structure fires where the fire was large enough to activate the system. But reports from the National Fire Prevention Association (NFPA) show that the number of fires that occur in one- and two-family dwellings equipped with sprinklers are so few that they are not shown in studies done by the organization.

VFPA Reply

The effectiveness of residential sprinklers cannot be better demonstrated than by HBAV's assertion. Residential sprinklers are so successful, that fire incidents often go unreported.

HBAV Assertion #3

Sprinklers cause unintended damage. Statistics from the Virginia Fire Incident Reporting System show that 76.8 percent of all fires in Virginia from 2000 through 2008 either did not spread or were confined to an object or a room and contained. But when sprinklers detect smoke they set off every sprinkler in the house, not just in the room where the fire is occurring. In many homes that suffer a fire where working sprinklers exist there is more water damage to the home than fire damage.

VFPA Reply

HBAV's assertion is blatantly false and demonstrates a lack of understanding of residential sprinkler systems. They state "*When sprinklers detect smoke, they set off every sprinkler in the house.*"

1. Sprinkler heads are activate by heat, NOT smoke.
2. Only one head is activated.
3. They are designed to operate quickly enough that only one head is activated.

HBAV Assertion #4

Home insurance rates do not decrease with their use. Sprinkler proponents claim the cost of home insurance decreases when you install fire sprinklers. It's true that some states offer insurance credits for having fire sprinklers in the home. Using a conservative sprinkler cost estimate of $1.50 per square foot in a 2,300-square-foot home with an annual property insurance rate of $1,000, it would take approximately 35 years for a 10 percent credit to pay for the system. Insurance agents in the Richmond area say credits rarely are given above 3.5 percent. Throw in maintenance costs and it would take even longer for the credit to pay its due for the system. However, that does not offset the increased costs charged for potential water damage and flooding. In most cases sprinklers go off in areas of the home where fire is not occurring, causing more claims for water damage than fire damage. Virginia insurance agents say this drives the cost of insurance higher for people who have sprinkler systems.

VFPA Reply

This is the first instance in which we have heard the validity of a construction code safety requirement questioned based on the availability of an insurance discount. When code requirements for arc fault and ground fault protection were adopted, was the question of an insurance discount raised?

Again the assertion that sprinkler heads "go off" in areas of the home that are not involved in fire either indicates a lack of technical knowledge, or a deliberate attempt at obfuscation. Regardless of HBAV's assertion, a 2008 study by Newport Partners for the National Fire Protection Research Foundation using data from ten states identified insurance savings from 0-10%, with the average discount of 7%.

HBAV Assertion #5

> Smoke alarms potentially save more lives than sprinklers. A 2006 study by the U.S. Fire Association (USFA) on the presence of working smoke alarms in 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. USFA and NFPA data continue to show that the vast majority of home fire fatalities occur when there are no operational smoke alarms. The most recent NFPA report on smoke alarms estimates that more than 890 lives could be saved annually if every home had a working smoke alarm. From 2000-2004, 65 percent of the fire fatalities reported occurred in homes where smoke alarms were not present or were present and did not operate.

VFPA Reply

This fact has nothing to do with sprinklers, as the two are complimentary parts of a residential fire protection system. Additionally, HBAV's analysis was taken from the National Association of Home Builder's *NAHB Recommended State & Local Amendments to the 2009 International Residential Code.* Dr. John Hall whose work was cited by NAHB refuted their conclusions in *Commentary on the NAHB Recommended State & Local Amendments to the 2009 International Residential Code (IRC)* Hall, Jr. J. (May 6, 2009). Dr Hall's comments are attached to this document.

We hope that HBAV's recognition that providing residential smoke alarms to the needy who cannot afford them would save lives, will cause HBAV to adopt such a program as part of a public outreach campaign. The money spent on HBAV's campaign to block the adoption of the 2009 IRC as approved by the ICC membership would have been a great start for the program.

HBAV Assertion #6

> Sprinklers will harm efforts at providing affordable housing statewide. According to an August 2006 survey of home builders done by the National Association of Home Builders' Research Center, the average sprinkler system costs $2.66 per square foot to install in a new home. For the average home size considered to be affordable housing in Virginia – 1,800 to 2,200 square feet – the maximum cost would be approximately $5,850. In the Richmond area, about 710 families lose the ability to qualify for a new home mortgage with each $1,000 increase in the price of a new home. Mandating fire sprinklers would keep more than 4,100 families from being able to buy affordable housing in the Richmond area. A hard-wired, interconnected smoke alarm system installed through the whole house costs about $50 per alarm. You may have heard of the "Scottsdale study," which

McMahan, Alan (DHCD)

From: Thomas, David [David.Thomas@fairfaxcounty.gov]
Sent: Wednesday, July 08, 2009 6:21 AM
To: Hodge, Vernon (DHCD)
Subject: Board Decision on Home Sprinklers is Incorrect and Should be Reversed.

Mr.Hodge: I am writing, with request that you forward to the Board, the following comments regarding their elimination of the mandatory requirement for sprinklers in one and two family dwellings and townhouses, action taken at their June 22, 2009 meeting.
A. The IRC 2009 is correct as it stands with respect to home fire sprinklers.
B. Lightweight wood construction presents a severe danger to homeowners and to firefighters, which sprinklers are designed to abate.
C. Loss costs due to multiple unit fires (adjacent townhouses and patio homes burning at the same time) are continually mounting in my jurisdiction. Home fire sprinklers would prevent this problem from expanding further.
D. By changing the national model code in this respect, the Board calls down upon themselves responsibility for future losses due to lack of the presence of home fire sprinklers. Ultimately, no "sovereign immunity" will protect the Commonwealth, since the Commonwealth has fully and completely particiapated in the national model code process since the 1970s, and continues to do so. Virginia delegates supported the requirement at the model code level.
E. Data from Canada, recently published, indicates that floor collapse can occur anywhere from 325 to 480 seconds after fire initiation, with lightweight wood construction. This potential for collpase is devastating, and home fire sprinklers can help abate this problem.
I urge the Board to reconsider their decision of June 22, continue with the IRC sprinkler provision as it was originally passed at the model code level, and protect the citizens of the Commonwealth.

Yours truly,

David J. Thomas, MSCE, PE
Engineer IV, Fire Prevention Division
10700 Page Ave
Fairfax Va 22030
703-246-4819
FAX 703-691-1053

EXECUTIVE SUMMARY

On May 25, 2008, fire and rescue personnel from Loudoun County responded to a structure fire at 43238 Meadowood Court in Leesburg, Virginia. During the course of the incident, seven responders were injured. Of those injured, four firefighters received significant burn injuries, two firefighters sustained orthopedic injuries, and one EMS provider was treated for minor respiratory distress. Given the severity of the injuries and magnitude of the event, an independent Investigative Team was assembled to review the incident.

Specifically, the Team was tasked with reviewing "the events leading up to the incident, the incident operation(s), the firefighter MAYDAY(s), and incident mitigation."

The Department of Fire, Rescue, and Emergency Management – Fire Marshal's Office and the Virginia Occupational Safety and Health Compliance Program (VOSH) also performed separate, independent, investigations into the Meadowood Court incident.

This *Investigative Report* contains the results of the Team's comprehensive review and analysis. All of the information presented is factual and was validated by multiple sources prior to inclusion in this document. It is important to note that the Investigative Team had months to examine the incident and develop recommendations. In contrast, the first personnel to arrive on the scene had only seconds to make critical decisions and take action.

The Team determined that several major factors adversely affected the sequence of events on Meadowood Court, including:

- Supplemental Information
- Situational Awareness
- Strategy and Tactics
- Effective Firefighting Force
- Lightweight Building Construction and Materials
- Fire Behavior

Supplemental Information: Personnel in the Emergency Communications Center (ECC) obtained information from the 911 caller indicating that there was fire on the first floor and that it appeared nobody was inside the structure. This critical supplemental information was not provided to responding units or command officers.

Situational Awareness: The first arriving officer did not complete a full, 360° walk around/size-up of the structure nor did personnel observe the fire on the first floor as they entered the structure.

Strategy and Tactics: Based on the officers' perception of conditions, first-arriving crews initiated an offensive fire attack and primary search on the second floor of the structure, which allowed the fire to grow unchecked on the first floor.

Effective Firefighting Force: The first arriving units, Reserve Engine 6 and Tower 6, were at minimum staffing and responded with three personnel each. These units operated on scene for nearly six minutes prior to the arrival of a command officer or another tactical unit. During this time, personnel had numerous fireground tasks to complete, as quickly as possible. As a result, personnel were required to complete multiple tasks, which diverted their attention from their primary assignment.

Specifically, both apparatus operators were involved with laddering and ventilating the structure, leaving the pump panel unattended. In addition, both the Reserve Engine and Tower Officer were engaged in tactical operations, which diminished their ability to supervise, observe changes in the fire conditions, maintain overall situational awareness, and provide command with ongoing status reports.

Building Construction/Fire Behavior: The combination of lightweight building materials, vinyl siding, combustible sheathing, and the significant interior fire load on the first floor of the structure contributed to rapid fire spread. The fire quickly developed to the point of flashover, which trapped the personnel on the second floor of the structure.

The Team also determined several key factors that favorably affected the incident's outcome:

Firefighter Self-Rescue and Situational Awareness

- The Reserve Engine Officer recognized deteriorating interior conditions and rapidly led personnel out of the structure.
- The Tower Officer persevered under extreme circumstances to exit the structure.
- The Tower Firefighter maintained composure, in deteriorating conditions, and transmitted critical directions regarding ladder placement from the interior of the structure.
- The Reserve Engine Firefighter maintained composure and stayed with the crew during the exit from the structure.
- The four injured firefighters' Personal Protective Equipment (PPE) and Self-Contained Breathing Apparatus (SCBA) performed properly under extreme conditions, protecting them against more severe thermal or respiratory injuries.

Fireground Operations

- The first-arriving apparatus driver/operators placed ladders quickly, which provided a means of escape for interior personnel.

Command and Control

- The Incident Commander immediately acknowledged the firefighter MAYDAY.
- Command recognized the need to evacuate the structure.

Training

- All four of the firefighters operating inside the structure had successfully completed the Virginia Department of Fire Programs' MAYDAY Firefighter Down! curriculum.
- All four firefighters operating on the interior of the structure had participated in the Montgomery County (MD) Department of Fire and Rescue Services flashover simulator training program.

Building Construction

- The dimensional lumber floor joists supporting the second floor remained intact throughout the incident, which avoided a floor collapse, allowing firefighters to escape.

Finally, recommendations are provided throughout the *Report* in an effort to provide a framework to enhance and improve the Loudoun County Fire and Rescue System as well as protect responder and citizen safety.

National Fire Protection Association

Fire Prevention Field Office, 8518 N.W. 163rd Terrace
Miami Lakes, FL. USA 33016
phone: 305-364-0396 fax: 305-364-0795 email: mfigueroa@nfpa.org

July 6, 2009

Board of Housing and Community Development
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1221
Attn: Steve Calhoun

Re: Fire sprinkler requirement public commentary

Members of the Board of Housing and Community Development:

The mission of the international nonprofit NFPA, established in 1896, is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education. This letter is to oppose the action of the Codes and Standards Committee to allow voluntary installations as an option, and to encourage the adoption of fire sprinkler requirements in new homes.

Fire in the home poses one of the biggest threats to the people of your community. Nearly 400,000 home fires occur every year in the United States and, nearly 3,000 people, on average, die in fires that started at home. As in most states, the majority of fire deaths in Virginia in 2007 and 2008 occurred in residential properties, specifically one and two-family homes; according to Virginia State Fire Marshal's statistics. From 2004 to the present, one person was killed or injured by a fire every two days. Home fire sprinklers are a proven way to protect lives and property against fires at home.

These life-saving systems respond quickly and effectively to the presence of a nearby fire. When sprinklers are present, they save lives.

- If you have a reported fire in your home, the risk of dying decreases by about 80 percent when sprinklers are present.
- People in homes with sprinklers are protected against significant property loss—sprinklers reduce the average property loss by 71% per fire.

All model safety codes now require the use of home fire sprinklers in new one- and two-family homes. These requirements offer the highest level of safety to protect the people of your community.

- Home sprinkler systems respond quickly to reduce the heat, flames, and smoke from a fire, giving families valuable time to get to safety.
- Roughly 90% of the time, fires are contained by the operation of just one sprinkler.
- Each individual sprinkler is designed and calibrated to go off when it senses a significant heat change.

throughout the United States. Many "Habitat for Humanity" homes, which are built on very small budgets, are having these systems installed. In addition, there are published independent reports by the National Institute for Standards and Technology which clearly outlines the affordability and cost effectiveness of these systems.

For these reasons and for the safety of our public and firefighters alike, I would ask the Board of Housing and Community Development to reconsider the Codes and Standards Committee actions to effectively remove the provisions for residential sprinklers in one- and two-family homes, and to retain those provisions in the *Uniform Statewide Building Code* when the regulation is made final. With the Virginia code development process still in the early stages, much time exists for residents and staff to become properly informed, educated, and have any questions answered prior to the final adoption process. Virginia has always been responsive to the needs of firefighters and emergency service personnel, and the Fairfax County Fire and Rescue Department has taken an active part in the code development process. I look forward to this process which allows for consensus in building cost effective and safe building regulations.

If I or my staff can be of further assistance, please do not hesitate to contact me at 703-246-2546.

Sincerely,

Chief Ronald L. Mastin
Fire and Rescue Department

cc: Assistant Chief Daryl L. Louder, Business Services Bureau
Assistant Chief John J. Caussin, Jr., Personnel Services Bureau
Assistant Chief David L. Rohr, Operations Bureau
Deputy Chief Dereck A. Baker, Fire Prevention Division
Deputy Chief Keith H. Johnson, Training Division

Siding with Safety

Safe homes use fire-safe claddings, which include vinyl siding. Why does vinyl siding provide good fire performance? It is composed mainly of polyvinyl chloride, more commonly known as vinyl or PVC. Due to its chlorine base, vinyl siding does not ignite quickly and is inherently flame-retardant. Read on to discover more facts on vinyl siding's fire performance.

Since exterior cladding is not a factor in most fires, as 96% start on the inside of structures, vinyl siding and fiber cement are both specified as cladding options in several UL fire rated assemblies.

Harder to Ignite, Easier to Extinguish

All organic materials (that is, anything containing carbon) will ignite. But the higher the temperature a material has to reach before it flames, the safer it is.

PVC won't ignite, even from another flame, until it reaches about 730°F (387°C) and won't self-ignite until about 850°F (454°C). Those ignition temperatures are significantly higher than common framing lumber, which ignites from a flame at 500°F (260°C) and self-ignites at 770°F (410°C).

Also, ASTM D2863 tests show that rigid PVC's high Limiting Oxygen Index means that it needs unusually high amounts of oxygen to burn and stay burning. Rigid PVC (vinyl siding) will not independently sustain combustion in air with a normal concentration of oxygen (about 21%) – so it extinguishes more easily. >>>

VINYL SIDING INSTITUTE

America Sides with Vinyl.

DID YOU KNOW?

Most home structure fires originate in the interior of the home. Only 4 in 100 house fires start on the outside of the structure and fewer than 2 of 100 house fires originate with the exterior wall surface.

— National Fire Protection Association, Home Structures Fires, February 2007

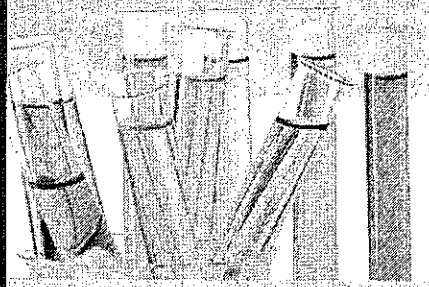
Independent Sources Side with Vinyl

- **The National Fire Protection Association's National Electrical Code recognizes the strong fire-safe characteristics of vinyl through its approved use as a residential wiring insulator. Millions of homes have been wired using safe vinyl-sheathed electrical systems for decades.[2]**
- **Underwriters Laboratories, Inc. (UL), includes certain vinyl siding as accepted products in fire-resistive construction.[3]**
- **ASTM D2863 tests prove that rigid PVC's high Limiting Oxygen Index means that it takes unusually high levels of oxygen to burn and stay burning.**
- **ASTM E162 tests indicate that PVC is among the materials with the lowest radiant panel index, which means it doesn't release a lot of energy when it burns.**

The Facts About Residential Fires

The manufacturers of vinyl siding are committed to keeping their products a low fire risk. The facts show that exterior cladding is involved in only a fraction of all residential fires. Indeed, most house fires start on the insides of homes and are contained within their structures of origin.

The National Fire Protection Association's (NFPA) February 2007 report, *Home Structures Fires*,[4] shows that fewer than 3% of all fires go beyond the structure of origin, and fewer than 2% of all home fires' source of origin is related to the exterior wall surface. In fact, only 4% of all residential fires start on the outside of the structure, but do not necessarily originate with the exterior cladding. The report does not cite any exterior wall coverings (including vinyl siding, brick and stucco) as the cause of residential fires.



What's the makeup of your cladding material? Vinyl siding features a chlorine base, making it inherently slow to ignite and flame retardant.

Slows Flames from Spreading

Results of ASTM E162-06 test, Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source, show PVC as one of the materials with the lowest radiant panel index – meaning it doesn't release a lot of energy when it burns and will not readily spread flames on its own.

Vinyl siding does not exhibit sustained flaming when tested in accordance with NFPA 268 Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source.

When any organic material burns, it releases smoke that contains many different combustion products – mainly gases, most of which are toxic. There is no research to substantiate claims that vinyl materials release unusually toxic combustion products.[5]

To learn more about how vinyl siding can help you side with safety – and do it beautifully – visit www.vinylsiding.org.

[2]Underwriters Laboratories (UL) BXUV.U354/BXUV.U356 Fire Resistance Rating – ANSI/UL 263. [2]2005 National Electrical Code, NFPA 70, Article 334. [3]Underwriters Laboratories (UL) BXUV.U501 Fire Resistive Rating – ANSI/UL 263 (2004). [4]National Fire Protection Association Fire Analysis and Research Division, *Home Structures Fires*, February 2007. [5]*PVC in Fire*, The British Plastics Federation, April 1996.

Minimum Requirements for Fire Protective Membrane Debated

In the last code cycle, which led to the publication of the 2009 International Residential Code (IRC), automatic fire sprinkler systems were added to R313 of the 2009 IRC for townhouses and one- and two-family dwellings (effective January 1, 2011). In recent months, the minimum requirements for a fire protective membrane for light-frame construction have been further raised by the fire service and it is expected that several code change proposals related to this topic will be debated at the upcoming ICC code development hearings in October, 2009 in Baltimore, Maryland. In single-family home construction, APA has long recommended the use of a single layer of ½-inch thick gypsum on the underside of all I-joists used in floor/ceiling assemblies over habitable spaces. This recommendation is based on the consideration of additional fire safety for both residents and fire fighters in accordance with an ASTM E119 fire test conducted by APA at the National Gypsum Association's fire laboratory. The test involved a fully loaded wood I-joist floor system consisting of 9-1/2-inch deep joists spaced 24 inches o.c. Complete details, and APA's findings, are reported in APA Technical Topic TT-015, Wood I-Joist Floors, Firefighters and Fire.

(RETURN TO TOP)

End of column

Date: July 27, 2009

To: Members of the Board of Housing and Community Development, Assembled in Public Hearing

Fr: David J. Thomas, PE (VA Registration No 0402 019474)

Subject: Consequences of the Codes and Standards Committee June 22 Action on Residential Sprinklers

In order that the members of the Board are apprised of the consequences of the Codes and Standards Committee June 22 decision to delete the mandatory IRC code requirement for sprinklers in single family and townhouse structures, I am enclosing information on actual fire tests of engineered wood floors, in basement fire scenarios.

Lacking sprinkler protection, the time to failure of engineered wood floors in basement fire scenarios is as follows:

Type of wood floor	**Time to collapse**
Solid wood joist (control)	740 seconds
Wood I-joist type A	490 seconds
Steel channel joist	462 seconds
Metal plate wood truss	469 seconds
Wood I-joist type B	382 seconds
Wood I-joist type B	380 seconds
Wood I-joist type B	414 seconds
Metal web wood truss	325 seconds

For engineered wood, time to collapse is from 5 minutes to 8 minutes. Fire department (best case) arrival is of the order of 5-6 minutes on scene. By the time fire department set

up occurs, the floor may well have collapsed. I enclose the original data table from the National Research Council of Canada, where the research was conducted.

Wood Floor Failures, Excerpted from RR-252, National Research Council of Canada, Study of Unprotected Floor Assemblies in Basement Fire Scenarios.

Table 8. Time to Failure of Unprotected Floor Assemblies

	Open basement doorway		Closed basement doorway	
Assemblies tested	**Test**	t_f(s)	**Test**	t_f(s)
Solid wood joist (235 mm depth)	UF-01	740	UF-02	1200
Wood I-joist A (302 mm depth)	UF-03	490	UF-09	778
Steel C-joist (203 mm depth)	UF-04	462	-	-
Metal-plate wood truss (305 mm depth)	UF-05	469	-	-
Wood I-joist B (302 mm depth)	UF-06	382	-	-
	UF-06R	380	-	-
	UF-06RR	414	-	-
Metal web wood truss (302 mm depth)	UF-07	325	UF-08	474

Note: In addition to the solid wood joist assembly, two engineered floor assemblies - one with the longest time and the other with the shortest time to reach failure in the open basement doorway scenario - were selected for testing with the closed basement doorway.

I urge that the Board reconsider the Codes and Standards Committee decision and that, in the published initial document of the USBC 2009 edition the Board remain with the IRC ~~residential sprinkler~~ mandate as it stands ~~in the nationally adopted IRC. The~~ consequences of the Codes and Standards Committee June 22 action are shown in the table above, and they are very grievous for the safety of citizens and firefighters.

N:\My Documents\DHCDBoardMemofor July 27, 2009.doc

Wood Floor Failures, Excerpted from RR-252, National Research Council of Canada, Study of Unprotected Floor Assemblies in Basement Fire Scenarios.

Table 8. Time to Failure of Unprotected Floor Assemblies

	Open basement doorway		Closed basement doorway	
Assemblies tested	**Test**	*t* ,(s)	**Test**	*t,(s)*
Solid wood joist (235 mm depth)	UF-01	740	UF-02	1200
Wood I-joist A (302 mm depth)	UF-03	490	UF-09	778
Steel C-joist (203 mm depth)	UF-04	462	-	-
Metal-plate wood truss (305 mm depth)	UF-05	469	-	-
Wood I-joist B (302 mm depth)	UF-06	382	-	-
	UF-06R	380	-	-
	UF-06RR	414	-	-
Metal web wood truss (302 mm depth)	UF-07	325	UF-08	474

Note: In addition to the solid wood joist assembly, two engineered floor assemblies - one with the longest time and the other with the shortest time to reach failure in the open basement doorway scenario - were selected for testing with the closed basement doorway.

Timelines:

Floor Assembly Type	Test	First Alarm	OD = 2 m^{-1}	FED=0.3-1 1st storey	FED=0.3-1 2nd storey	Structural Failure
Tests with open basement doorway						
Solid wood joist	UF-01	40	185	*205-235*	225-255	740
Wood I-joist A	UF-03	48	183	**205-213**	225-247	490
Steel C-joist	UF-04	30	195	**207-215**	*245-280*	462
Metal-plate wood truss	UF-05	40	190	*206-232*	*235-260*	469
Wood I-joist B	UF-06	45	170	198-211	*208-241*	382
	UF-06R	38	161	198-199	*207-241*	380
	UF-06RR	43	184	*203-216*	218-248	414
Metal web wood truss	UF-07	40	170	**192-207**	*230-255*	325
Tests with closed basement doorway						
Solid wood joist	UF-02	42	297	466-676	*362-501*	1200
Metal web wood truss	UF-08	50	360	*400-486*	*375-510*	474
Wood I-joist A	UF-09	44	319	329-484	*364-504*	778

1. Values determined using the measurements at 1.5 m height (for gas concentrations and 00) or 1.4 m height (for temperatures);
2. The number with the *italic* font **represents the calculated time for reaching the CO incapacitation** dose, while the number in bold represents the calculated time for reaching the heat incapacitation dose, whichever occurred first;
3. All values shown in the table are before fire suppression.

COUNTY OF PRINCE WILLIAM
1 County Complex Court (MC470), Prince William, Virginia 22192-9201
(703) 792-6800 Metro 631-1703, Ext. 6800, FAX 792-7691

DEPARTMENT O
FIRE & RESCUE

Kevin J. McGee
Chief

July 7, 2009

Mr. Steve Calhoun
Department of Housing and Community Development
501 N. Second Street
Richmond, Virginia 23219-1221

Dear Mr. Calhoun:

I am writing to express my support for maintaining the residential sprinkler provisions of the International Residential Code when this national model code is adopted in Virginia. Sprinkle systems are a proven reliable method to prevent citizen and firefighter deaths from fire and to reduce millions of dollars of property loss.

In Prince William County, there are two developers who install residential sprinklers in single-family homes. Both use the increased safety as marketing opportunities. I have spoken to homeowners who live in these houses with the confidence of the added protection the sprinkler systems offer, and I have spoken to a representative from the insurance industry about their support for residential sprinklers. In all cases, there is support for residential sprinklers.

Unfortunately, there are many houses that will be built in the upcoming years that will not enjoy the benefit of residential sprinklers without the adoption of the code as proposed. Lives will be unnecessarily placed at risk; property will be lost. This is all preventable through the expansion of the code to include residential sprinklers in single-family houses and townhouses, as they are now required in other forms of housing.

The compelling reasons for supporting residential sprinklers include, but are not limited to the flammability of construction materials and the contents of a dwelling. Consideration also must be given to the inability of the young and elderly, even if they are alerted by a smoke detector.

Fire and Rescue Departments will continue to try to compel occupants to reduce opportunities for fire through prevention activities, and we will do our best to respond in a timely fashion to calls for service, but neither of these activities will ever come close to being a substitute for the protection a family will enjoy by a residential sprinkler system.

I look forward to working with the home builders to be a part of the solution to the sad, catastrophic loss of life by fire that currently exists in our in our Commonwealth and great Nation.

Please feel free to call on me to assist with this endeavor.

Sincerely,

Assistance Chief C. Hadden Culp
Chief Fire Marshal
Prince William County, Virginia
#1 County Complex Court
Prince William, Virginia 22192

~~*The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.*~~

~~**AP101 Fire sprinklers.** An approved automatic fire sprinkler system shall be installed in new one- and two-family dwellings and townhouses in accordance with Section 903.3.1 of the *International Building Code*.~~

Add standard to Chapter 43 as follows:

NFPA 13D-07 Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes

Commenter's Reason: As stated in the original proposal, ASPE is a firm believer that residential sprinkler systems should be installed in all residential buildings to provide life safety. The fire deaths and statistic regarding the performance of NFPA 13D systems clearly justifies the requirements for residential sprinklers for all new residential buildings.

ASPE can agree with the IRC Fire Sprinkler Coalition regarding the delay in enactment of the code requirement. While we believe this should happen immediately, it is recognized that it could take time to complete the training and education of all parties involved. Therefore, we in effect are suggesting the combination of the two proposed code changes RB63 and RB64.

The purpose of the code is to provide life safety protection to everyone. To provide this protection, residential sprinklers are a necessary component in building construction.

Public Comment 2:

Ronny J. Coleman, Retired California State Fire Marshal, representing Fire Sprinkler Coalition, requests Approval as Modified by this Public Comment.

Replace proposal as follows:

SECTION R313
SPRINKLER PROTECTION

R313.1 Required Installation. Effective January 1, 2011, a residential fire sprinkler system shall be installed in one- and two-family dwellings and townhouses.

Exception: A residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with a residential fire sprinkler system.

R312.2 Design and Installation. Residential fire sprinkler systems shall be designed and installed in accordance with Section P2904 or NFPA 13D.

(Renumber subsequent sections)

Also RP3 - page 786

Delete IRC Appendix P without substitution:

~~APPENDIX P~~
~~FIRE SPRINKLER SYSTEM~~

~~*The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.*~~

~~**AP101 Fire sprinklers.** An approved automatic fire sprinkler system shall be installed in new one- and two-family dwellings and townhouses in accordance with Section 903.3.1 of the *International Building Code*.~~

Add standard to Chapter 43 as follows:

NFPA 13D-07 Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes

Commenter's Reason: It is important to point out that there was no comprehensive debate on this proposal at the hearing in Palm Springs. The IRC Fire Sprinkler Coalition (www.IRCFireSprinkler.org) and many others chose to forgo debate since it was clear, based on committee actions on prior proposals, that the committee would not accept any proposal having to do with residential sprinklers.

When RB64 was called to the floor, there were only 10 committee members present (other than the chairman), and 4 of these individuals were appointed by the National Association of Home Builders. Given NAHB's well-known policy of opposing residential sprinklers, passage of RB64 would have required a unanimous vote of the remaining 6 members. Such a requirement, the threshold of unanimity among committee members who don't have a pre-determined vote, to pass a code change is inconsistent with the concept of consensus code making, and it depreciates ICC's code-making process. Accordingly, the committee vote lacks merit and should be ignored.

We ask the ICC membership to support this public comment based on the overwhelming evidence that has been presented in support of residential sprinklers over the past few years. The reason statement provided with the original RB64 proposal and the reason statements provided with many other proposals this year clearly make the case that residential sprinklers represent the best way to achieve a sustainable and long-term reduction in residential fire losses.

We know that: 1) the residential fire problem is not limited to older homes, 2) the residential fire problem cannot be solved with smoke alarms, 3) more firefighters are killed fighting fires in dwellings than in any other occupancy, and 4) residential sprinklers represent a cost effective solution to America's residential fire problem. These conclusions are clearly documented in publicly available reports.

We also know that consumers are accepting residential sprinklers as an important feature in new home construction in increasing numbers. This comes as no surprise because the IBC requires EVERY other residential occupancy built today to have sprinklers, and it simply makes sense that renters who live in sprinklered apartments will want to move into sprinklered homes.

While NAHB suggests that sprinklers should remain a "choice" for new homeowners, the concept of choice has two significant flaws. First, it's common knowledge that major home builders won't offer sprinklers even if the owner wants them installed, so home buyers who want sprinklers are simply told that they're not offered as an option. Second, why should the first home buyer be given the right to choose whether a home gets a fire sprinkler system, on behalf of all future homeowners, their families, and the community who ultimately assumes responsibility for providing fire protection for unsprinklered properties? This simply makes no sense.

The fact that the National Association of Home Builders is the only national organization to oppose the adoption of residential sprinklers as a mainstream feature in new home construction is very telling, and we are optimistic that ICC's membership will make the decision that the time has finally come for all homes to be sprinklered. It seems that everyone agrees that we'll eventually get there, so what are we waiting for?

Final Action: AS AM AMPC 2 D

RB65-07/08

R325 (New), Chapter 43 (New)

Proposed Change as Submitted:

Proponent: Jim Jorgensen/Greg Reed, City of Lenexa, KS

1. Add new section as follows:

SECTION R325
AUTOMATIC SPRINKLER SYSTEM

R325.1 Fire protection systems. An automatic residential fire sprinkler system shall be installed in new townhouses in accordance with NFPA 13D.

2. Add standard to Chapter 43 as follows:

NFPA
13D-07 Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes

Reason: Townhouses present a unique fire protection and property protection issues for fore departments and owners of connected townhouses. With separate ownerships townhouses are uniquely affected by fires in adjacent units even if the fire does not breach the two hour walls separating the units. After a severe fire the structure is open to the elements and subject to damage from water intrusion and other effects. These detrimental effects contribute to ongoing damage of adjacent townhouses since the process for repair may take an extended period of time. Legal issues may further complicate the repair process. Adding sprinklers will minimize the extent of damage so that repairs are easier to complete and the time of exposure of adjacent units to adverse affects is minimized.

Significant documentation was provided RB114-06/07 to show that non-sprinkled dwellings are a major contributing factor to the amount of property damage and loss of life from fires. Sprinkling is now required for all multi-family dwellings and townhouses should be treated in a similar manner.

Cost Impact: The code change proposal will increase the cost of construction.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action: **Disapproved**

Committee Reason: The committee felt that there was insufficient effective or substantial reason to move the sprinkler requirements out of Appendix P where it is now. The committee agreed that if the code is going to mandate sprinklers for new construction that is should apply to all structures in the scope of the *International Residential Code* not just townhouses in a piecemeal approach.

Assembly Action: **Approved as Submitted**

Individual Consideration Agenda

This item is on the agenda for individual consideration because an assembly action was successful.

Final Action: AS AM AMPC____ D

BLUE RIDGE HOME BUILDERS ASSOCIATION

July 8, 2009

To the Virginia Board for Housing and Community Development:

As the Board of the Blue Ridge Home Builders Association, we hereby urge you to reject making mandatory in Virginia the pending recommended 2009 IRC code changes that would require the installation of fire sprinkler systems in all new one- and two-family homes and townhouses.

The nearly 300 local businesses that are members of the Blue Ridge Home Builders Association are all connected in some way with the construction or furnishing of new homes in central Virginia. And we are all similarly committed to ensuring that those residences are the safest, most soundly built, most marketable homes possible.

If we are learning nothing else in the current housing economy, we are learning that market price and perceived value are keenly important to buyers.

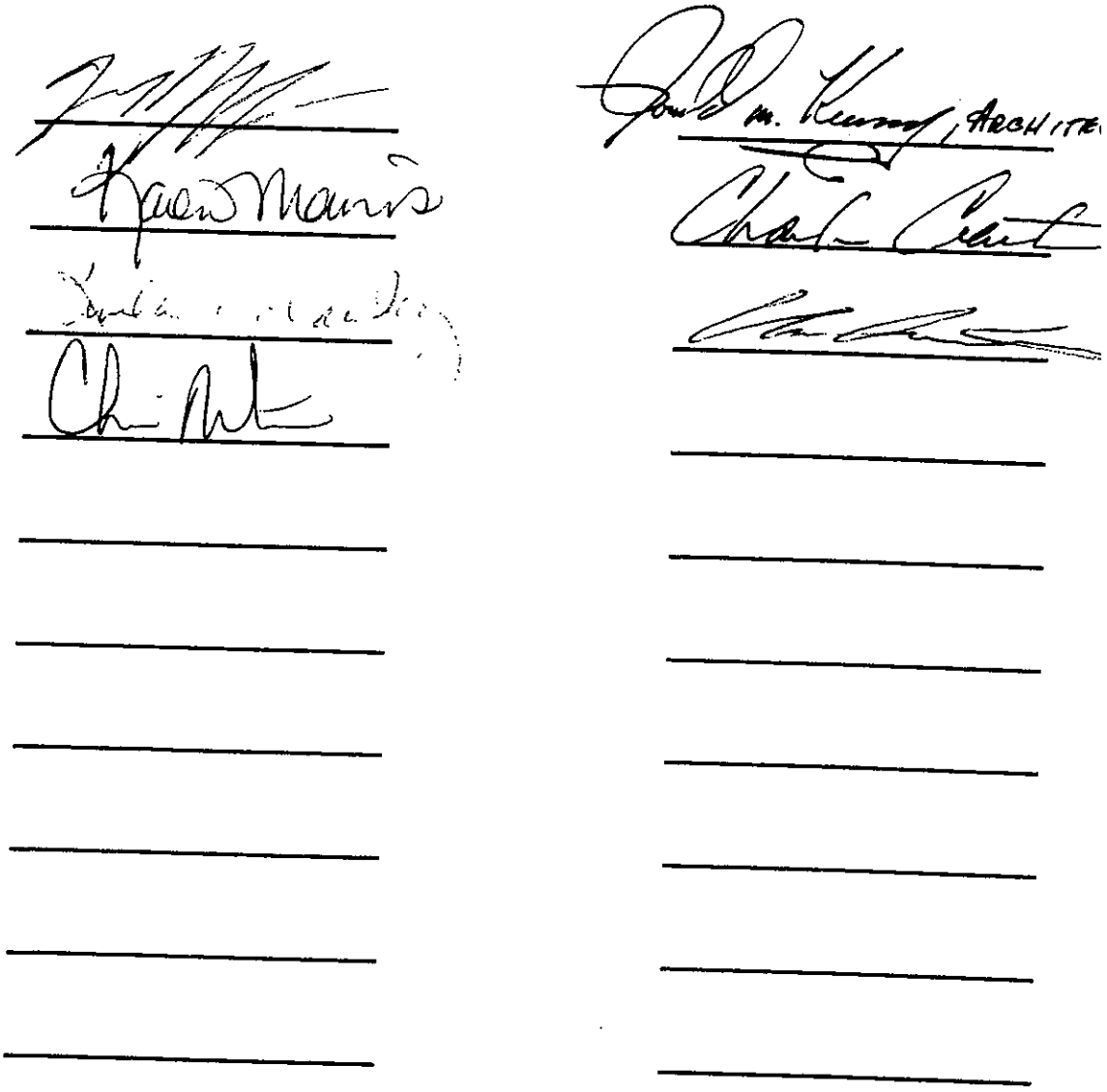
Residential fires in new homes are increasingly rare because existing electrical codes, materials and safety mandates provide growing protection from and early warning of a home fire. The minimal marginal safety gains that would accrue from residential sprinkler systems for a decreasing incidence of fires cannot possibly offset the significant costs to all new home buyers who will be forced to absorb them. For families who believe sprinklers are a reasonable trade-off in value for cost, such systems will still be available even if you reject making them mandatory. They can gain that protection based on their own decisions, not a state mandate.

In addition to our concerns about mandated costs and perceived values, we would note that many homes in our area are built outside of public service areas, where residential water resources come from individual wells and pump systems. The flow rates and pressures available in most of these homes would dramatically lessen the value of any in-home sprinkler system.

Our businesses depend on sound market-based decisions, both in how we operate our businesses and how we anticipate buyers' values and interests. Please allow buyers decisions about home sprinkler systems to remain voluntary.

Mailing Address: P.O. Box 7743, Charlottesville, VA 22906
Physical Address: 2330 Commonwealth Drive, Suite 100, Charlottesville, VA 22901
434.973.8652 Fax: 434.978.4927 www.brhba.org
Affiliated with the National Association of Home Builders and the Home Builders Association of Virginia

Signatures of the Board of the Blue Ridge
Home Builders Association, continued:



D² DAVID DIAMANTES
CODE TRAINING & CONSULTING

Mr. Tom Fleury, Chairman
Board of Housing & Community Development
501 North Second Street
Richmond, Virginia 23219

July 2, 2009

Dear Mr. Fleury:

I am writing regarding the decision of the Board's Codes and Standards Committee to make the installation of automatic sprinkler systems in R-5 occupancies an option. My objections regard both procedural and technical aspects of the proposal.

- Making sprinkler installation an option chosen by the buyer (or builder) reduces a safety provision to the same level as grade of carpets or cabinets. This already exists today, without a code provision. In effect, it guts the provision from the code.
- The Board has traditionally adopted the national model code with minimum technical amendments. Deleting the requirement for sprinklers effectively makes Virginia's construction regulations for residential structures less stringent, and effectively makes new residential buildings in the Commonwealth less safe than those in neighboring Maryland and Pennsylvania.
- Residential sprinkler technology is not new. These systems have been effectively installed and maintained for many years throughout the United States. A good deal of misinformation and even disinformation has been thrust into this discussion, to the detriment of the process. When one of the members of the Codes and Standards Committee stated during the meeting "I don't have enough information to make a decision," the vote by the Committee should have been postponed.

The codes process in the Commonwealth has been the model looked to by many other states. The International Residential Code was developed according to the International Code Council's code development process, with input from design professionals, building trade associations, manufacturers and safety professionals. Board action to delete this provision, puts it squarely at odds with the majority of building safety professionals in the United States. I encourage the Board to act on behalf of the citizens.

Sincerely,

David Diamantes

689 Laurel Wood Lane, Berryville, Virginia 22611 540-955-1989 ddiam@visuallink.com

Fire-Safe Cigarette Law to be looked at by Virginia Legislator's

By: Bill Smith

Fast Facts...

FACT:	Cigarettes are the **leading cause of home fire fatalities** in the United States, killing 700 to 900 people - smokers and nonsmokers alike - per year.
FACT:	Smoking-material structure fires killed 760 people and injured 1,520 others in 2003.
FACT:	Property losses from smoking-material fires total hundreds of millions of dollars each year.
FACT:	There were 25,600 smoking-material structure fires in the United States in 2003.
FACT:	Fires caused by smoking materials are actually on the decline, thanks in part to more stringent standards for fire-resistive mattresses and upholstered furniture, public education, and a dramatic decrease in the number of cigarettes consumed per adult in the United States.
FACT:	The risk of dying in a home structure fire caused by smoking materials rises with age. Between 1999 and 2003, two-fifths (38%) of fatal smoking-material-fire victims were age 65 or older.
FACT:	One-quarter of victims of smoking-material fire fatalities are not the smokers whose cigarettes started the fire: 34 percent are children of the smokers; 25 percent are neighbors or friends; 14 percent are spouses or partners; and 13 percent are parents.
FACT:	NFPA research in the mid-1980s predicted that fire-safe cigarettes would eliminate three out of four cigarette fire deaths. If cigarette manufacturers had begun producing only fire-safe cigarettes then, an estimated 15,000 lives could have been saved by now.
FACT:	Mattresses and bedding, upholstered furniture, and trash are the items most commonly ignited in smoking-material home fires.
FACT:	Between 1999 and 2003, almost half (43%) of fatal home smoking-material fire victims were sleeping when injured; one-third (32%) were attempting to escape, to fight the fire, or to rescue others.

Source: NFPA's Fire Analysis and Research Division, Updated: 8/06

Cigarettes sold in 21 states will be self-extinguishing after a strikingly high 15 states passed new laws this year to combat smoking-related blazes, the No. 1 cause of home-fire deaths.

A fire-safe cigarette has a reduced propensity to burn when left unattended. The most common fire-safe technology used by cigarette manufacturers is to wrap cigarettes with two or three thin bands of less-porous paper that act as "speed bumps" to slow down a burning cigarette. If a fire-safe cigarette is left unattended, the burning tobacco will reach one of these speed bumps and self-extinguish.

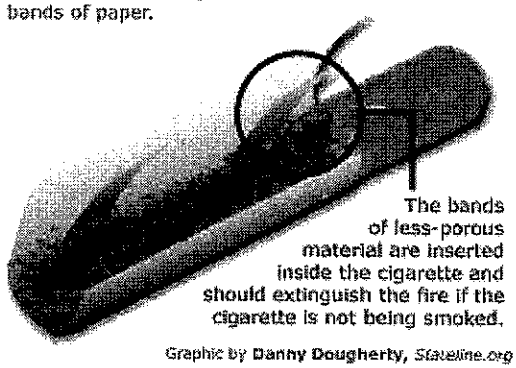
In 2006, at the urging of Chief Mary Beth Michos and Chief Kevin McGee of the Prince William County Fire & Rescue Department, the Virginia Fire Chiefs Association joined with the Coalition for Fire Safe Cigarettes and other groups interested in promoting the adoption of fire-safe cigarettes. The goal was to have fire-safe cigarette legislation adopted in Virginia in an effort to reduce deaths and injuries caused by smoking materials.

During two Virginia Fire Service Stakeholders Legislative Summit's held in 2007, support was garnered to draft and find sponsorship for legislation to make fire-safe cigarettes a reality in Virginia during the upcoming General Assembly session. Since those summits, support has been sought and obtained from Phillip Morris and R. J. Reynolds Tobacco Companies in addition to the stakeholder groups.

Stateline.org

A self-extinguishing cigarette

Twenty-one states – including 15 this year – have passed laws requiring all cigarettes sold to be "fire-safe." These cigarettes use two or three added bands of paper.



Graphic by **Danny Dougherty**, Stateline.org

Sources: Coalition for Fire-Safe Cigarettes and Philip Morris USA

It is important to understand what this law is and what it is not. This is not a law about an individual's right to smoke or where an individual can smoke. This law enhances the safety of cigarettes because they are a source of fires and it can be viewed as an enhancement to product safety much along the same lines as requiring airbags in automobiles.

Currently, five states have safe cigarette laws in effect and 16 others have passed similar laws and are approaching their effective dates. An estimated 52% of the population of the United States is protected by safe cigarette laws.

FROM NFPA PRESIDENT JAMES M. SHANNON

Fire-safe Cigarettes: Keep Fighting

As we launch a new advocacy campaign around home fire sprinklers, it is important to note that one of the most gratifying projects undertaken in recent years by the NFPA community is our highly successful coordination of the fire-safe cigarette campaign.

The campaign has progressed far more quickly than any of us could have imagined when we began three years ago. Our goal was to get all of the states to adopt legislation requiring that all cigarettes sold in the state be manufactured to fire-safe specifications. We chose the difficult route of seeking 50 state adoptions after decades of trying to get Congress to adopt a national bill, only to be trumped again and again by the powerful tobacco lobby in Washington.

With the enthusiastic support of the fire service, public health, consumer, and other safety advocates, this issue took off across the country. NFPA coordinated the campaign and provided legislative language, educational materials, public relations, and other support for this effort through a coalition that we organized.

The potential to save hundreds of lives and hundreds of millions of dollars annually in property losses inspired people all over the country to get behind this initiative. That effort created a juggernaut.

Less than three years after the announcement of the Coalition for Fire-Safe Cigarettes, 38 states have passed the legislation applying the fire-safe standard to all cigarette sales. The second-biggest cigarette manufacturer, R. J. Reynolds, has announced that all of its cigarettes in the United States will meet the standard by the end of 2009. Philip Morris, while not willing to go that far, is supporting our efforts to change the law state-by-state. There has also been tremendous movement internationally. Canada was an early adopter of fire-safe cigarette requirements, and now Australia and the European Union have taken action.

It is vitally important that we not let up on this campaign. Our goal of having a true national standard is in sight. But unless we get the job done in the next couple of years, we run the risk that states will, over time, succumb to the pressure to backslide on this advance. If that happens, we will lose this chance for permanent progress. If we reach the point where every cigarette sold in the United States meets the safer standard, however, there will be no turning back.

In a few years, after the laws of all of the states have been changed and taken effect, we expect to see both a significant drop in fire deaths and a measurable decline in property losses. Smoking-related fires are still the number-one cause of fire fatalities in the United States, accounting for between 700 and 900 of the 3,000 or more fire deaths every year, so this is a historic opportunity to move the country in a significant way toward fire safety. But the job isn't done yet.

As I write this, a dozen states—Alabama, Arkansas, Michigan, Mississippi, Missouri, Nebraska, Nevada, New Mexico, North and South Dakota, West Virginia, and Wyoming—still have not passed fire-safe cigarette legislation. If you live in one of those states, please get involved now. Take a look at the Coalition's website—www.firesafecigarettes.org—and contact your legislator with the compelling argument for your state to pass this law without further delay. We have gotten this far because so many people all over the country mobilized to pass legislation where they live. Now we have to complete the job.

PHOTOGRAPH BY DAVE YOUNT/NFPA

highly effective in multifamily dwellings. NFPA has no record of a multiple fatality in a fully sprinklered building where the system operated. The risk of dying in a home where a fire is reported decreases by about 82 percent when sprinklers are present. The cost of installing a sprinkler system in a new construction averages $1.61 per square foot.

Vitale remembers the exact moment she decided to fight for home fire sprinklers in Anne Arundel County. Her husband, Mark, a local firefighter, had come home following a shift that included battling a house fire that claimed the lives of two children. Outside the children's room, he told her, a smoke detector sat upside down on a shelf. There were no batteries in it. "He just sat there hugging our little boy, saying 'they didn't have a chance,'" she recalls.

Vitale, an attorney who describes herself as a "staunch Republican," began researching home fire sprinklers. She talked to the local fire service, to homebuilders and real estate representatives, and to other communities that had passed ordinances. She met with local public works officials to make sure water-supply issues were addressed. She was clear about her intentions with fellow council members, and she made sure the community at large knew about her sprinkler effort. It took her "several years" to research the issue and craft a bill, Vitale says, but her due diligence paid off. The bill was introduced last October—timing it with NFPA's Fire Prevention Week was deliberate, she says—and it passed three months later with no major amendments. Homebuilder opposition was minimal, she says. "They spoke in terms of economics, saying now's not the time, but I attributed their absence to being somewhat supportive of what we were trying to do," she says. "They can pack our council room with 300 people if they oppose something."

Vitale, Chief Ray, and others readily share tips and strategy with sprinkler advocates; their suggestions, and much more, are available at www.firesprinklerinitiative.com. For the fire service, says Ray, get your own house in order first; make sure the volunteer service and the union are behind the effort. Use local stories of home fire injuries or deaths to illustrate that every new sprinklered home is an opportunity to avoid stories such as these in the future. Know what the research says about how new, lightweight construction burns. "[New] homes burn faster, produce more heat and deadly smoke, and collapse more rapidly than at any time in our history," Ray told the council in November. "Modern construction methods and materials should be matched with modern fire protection systems."

On the legislative side, Vitale says, make sure you have the support of a county executive or mayor. Take your advocacy message directly to the community, and share burn research on old construction vs. new with homebuilders and real estate representatives. Seek out existing sprinkler legislation—such as that available on the sprinkler initiative website—to modify for use in your own community. "Know that you're not in this alone," urges Vitale. "For every point your opponents raise, you can have a counterpoint that supports the idea that sprinklers should be done in new construction without a second thought. And all of that information is out there."

The case for home fire sprinklers is timely and compelling. Around 80 percent of fire deaths in the United States occur in the home. The risk of dying in a home where a fire is reported decreases by about 82 percent when sprinklers are present.

Mike Chapman, a homebuilder in New Mexico, urges advocates to consider negotiating trade-offs if a community requires residential sprinklers. "You're getting the benefit of safer houses, so you can look at things like road widths, water requirements, and other infrastructure needs [as areas to save money]," he says. "If you can link sprinklers to a reduction of city expenditures, these kinds of efforts could be very successful."

It doesn't matter how you do it, Vitale says—just get it done. "We require sprinklers to protect everything else, so why not the same for one- and two-family homes?" she asks. "Building a home is more than selecting a grade of carpet, or deciding if you want solid cherry cabinets. Sprinklers are common sense."

SCOTT SUTHERLAND *is executive editor of* NFPA Journal.

COVER STORY

Illustration by Seth

The Case For Home Fire Sprinklers

NFPA's new advocacy campaign calls for sprinklers in every new one- and two-family home in the country. Here's how you can get involved.

NFPA Journal®, *March/April 2009*

By Scott Sutherland

Cover: The Case for Home Fire Sprinklers **Sidebars:** Education First | The History of Fire Sprinklers

On Janauary 5, John Robert Ray, chief of the Anne Arundel County Fire Department in Maryland, sat before the county council and explained why its seven members should vote in favor of a residential sprinkler ordinance. "Tonight you have the opportunity to tell all Anne Arundel County residents that their lives are equally important, rather than a matter of chance based on where they choose to live," Ray told the council. A state-mandated sprinkler ordinance for townhomes and condominiums had been on the books since 1992, but previous efforts in Anne Arundel to pass a similar measure for new one- and two-family homes had failed, largely due to opposition by homebuilders.

This time it stuck. That evening, the council voted 6-1 to adopt the ordinance, which requires sprinklers in all new one- and two-family homes, as well as in new, first-owner mobile homes and in certain renovations. Anne Arundel became the ninth of Maryland's 23 counties to enact such legislation, joining 82 cities and towns in the state that

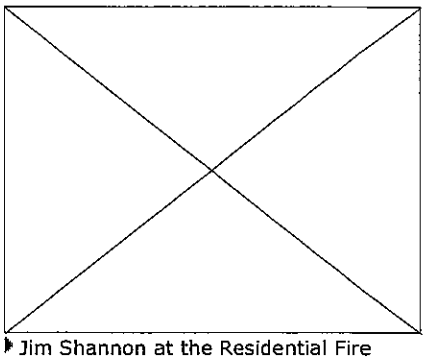
VIDEO

have similar laws.

"We had some opposition again from the homebuilders and real estate people, who said this wasn't a good time for the ordinance because it would add costs to new construction, and because they were already having a hard time selling new homes," Ray told NFPA Journal several weeks after the vote. "But I pointed out to them that those were the same arguments they used back in the 1990s, when the market was booming. It's always the right time to protect lives."

Anne Arundel County exemplifies the goals of "Fire Sprinkler Initiative: Bringing Safety Home," the NFPA advocacy campaign that officially launched in January. The Web-based initiative (www.firesprinklerinitiative.org) will provide materials and resources to people and organizations working for the adoption of requirements for automatic fire sprinklers in new one- and two-family homes. The effort is aimed at adoption on the local, county, and state levels, and can take the form of ordinances or model codes such as NFPA 1, Fire Code™, NFPA 101®, Life Safety Code®, NFPA 5000®, Building Construction & Safety Code® , or the International Residential Code (IRC), all of which include provisions requiring home fire sprinklers in one- and two-family dwellings.

On February 4, NFPA President James Shannon spoke to several hundred attendees at the Residential Fire Sprinkler Summit in Addison, Illinois. About 400 communities across the country have residential sprinklers in use, Shannon told the gathering. "Our goal is to increase that number exponentially over the next few years, and with that broad experience, rebut all of the specious arguments about residential sprinklers, their cost, and their effectiveness that have kept communities and states from adopting residential sprinkler ordinances," he said. "Our opportunity to achieve that common and worthy goal is greater than it has ever been before."



- Jim Shannon at the Residential Fire Sprinkler Summit
- More NFPA videos on Youtube.com

NFPA INITIATIVE LINKS

- Fire Sprinkler Initiative
- Fire Sprinkler Initiative Blog
- Fire Sprinkler Facts
- Fire Sprinkler Myths vs. Facts
- Fire Sprinkler Model Language
- Fire Sprinkler Form Letters
- Advocating for Home Fire Sprinklers
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NFPA CODES/STANDARDS

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- NFPA 101, Life Safety Code®
- NFPA 5000, Building Construction & Safety Code

EXTERNAL LINKS

- International Residential Code

Advocacy successes

As Shannon addressed the Illinois group, a bill supported by the initiative's opposition—chiefly homebuilder and real estate interests—was working its way through the Arizona state legislature. HB 2267 would prohibit communities in the state from passing ordinances requiring sprinklers in new, single-family detached homes. The only communities unaffected would be the handful that already have ordinances in place, including Scottsdale, which has had one since 1986. Despite opposition from more than 30 individuals and groups, including the Arizona League of Cities and Towns, the Arizona Fire Marshals Association, and the Arizona Fire Chiefs Association, the bill won endorsement in committee and was headed to the House floor. Similar anti-sprinkler motions are under consideration in North Dakota, Maine, and elsewhere.

NFPA and its advocacy campaigns are no strangers to adversity. The Coalition for Fire-Safe Cigarettes , launched in 2006 with the goal of passing fire-safe cigarette laws in all 50 states, faced a powerful foe in the well-funded, politically connected tobacco lobby. Three years later, however, 37 states have either implemented the law or passed legislation paving the way for a law, and nine more have legislation pending.

With the fire-safe cigarettes effort underway, NFPA in 2007 began a series of focus groups with the fire service, sessions designed to identify other issues requiring a coordinated effort to reduce home fire fatalities and injuries. Overwhelmingly, participants said they wanted to see NFPA back a home fire sprinkler initiative. The idea made sense; NFPA had been a founding member of the Home Fire Sprinkler Coalition a decade earlier, and related NFPA model codes had included home sprinkler provisions since 2006. In addition, a growing number of communities across the country were considering, and in many cases passing, sprinkler ordinances of their own. Last September, the International Code Council voted to require sprinklers in new one- and two-family dwellings, effective 2011, in the IRC, a move supported by NFPA. The following month, NFPA announced it would "coordinate a campaign to increase the number of homes protected by sprinklers."

"The inclusion of a home sprinkler requirement for new construction in all the model codes strengthens our advocacy position," says Lorraine Carli, vice-president for Communications at NFPA. "We have been very clear that our efforts to move this initiative forward include advocating for the adoption of any code, including the IRC, that contains a sprinkler provision."

The initiative is "exactly what's needed," says Cathleen Vitale, the Anne Arundel County council member who introduced the sprinkler bill that was adopted in January. "Education is a huge part of what these efforts are about," says Vitale. "The ability to have that information in a central location is a vital tool in the legislative process."

Getting it done

The case for home fire sprinklers is timely and compelling and supported by an array of NFPA research. Around 80 percent of fire deaths in the United States occur in the home, killing nearly 3,000 people every year. Sprinklers have been used for more than a century to protect commercial, industrial, and public buildings, and have proven highly effective in multifamily dwellings. NFPA has no record of a multiple fatality in a fully sprinklered building where the system operated. The risk of dying in a home where a fire is reported decreases by about 80 percent when sprinklers are present. The cost of installing a sprinkler system in a new construction averages $1.61 per square foot.

Vitale remembers the exact moment she decided to fight for home fire sprinklers in Anne Arundel County. Her husband, Mark, a local firefighter, had come home following a shift that included battling a house fire that claimed the lives of two children. Outside the children's room, he told her, a smoke detector sat upside down on a shelf. There were no batteries in it. "He just sat there hugging our little boy, saying 'they didn't have a chance,'" she recalls.

Vitale, an attorney who describes herself as a "staunch Republican," began researching home fire sprinklers. She talked to the local fire service, to homebuilders and real estate representatives, and to other communities that had passed ordinances. She met with local public works officials to make sure water-supply issues were addressed. She was clear about her intentions with fellow council members, and she made sure the community at large knew about her sprinkler effort. It took her "several years" to research the issue and craft a bill, Vitale says, but her due diligence paid off. The bill was introduced last October—timing it with NFPA's Fire Prevention Week was deliberate, she says—and it passed three months later with no major amendments. Homebuilder opposition was minimal, she says. "They spoke in terms of economics, saying now's not the time, but I attributed their absence to being somewhat supportive of what we were trying to do," she says. "They can pack our council room with 300 people if they oppose something."

Vitale, Chief Ray, and others readily share tips and strategy with sprinkler advocates; their suggestions, and much more, are available at www.firesprinklerinitiative.com. For the fire service, says Ray, get your own house in order first; make sure the volunteer service and the union are behind the effort. Use local stories of home fire injuries or deaths to illustrate that every new sprinklered home is an opportunity to avoid stories such as these in the future. Know what the research says about how new, lightweight construction burns. "[New] homes burn faster, produce more heat and deadly smoke, and collapse more rapidly than at any time in our history," Ray told the council in November. "Modern construction methods and materials should be matched with modern fire protection systems."

On the legislative side, Vitale says, make sure you have the support of a county executive or mayor. Take your advocacy message directly to the community, and share burn research on old construction vs. new with homebuilders and real estate representatives. Seek out existing sprinkler legislation—such as that available on the sprinkler initiative website—to modify for use in your own community. "Know that you're not in this alone," urges Vitale. "For every point your opponents raise, you can have a counterpoint that supports the idea that sprinklers should be done in new construction without a second thought. And all of that information is out there."

Mike Chapman, a homebuilder in New Mexico, urges advocates to consider negotiating trade-offs if a community requires residential sprinklers. "You're getting the benefit of safer houses, so you can look at things like road widths, water requirements, and other infrastructure needs [as areas to save money]," he says. "If you can link sprinklers to a reduction of city expenditures, these kinds of efforts could be very successful."

It doesn't matter how you do it, Vitale says—just get it done. "We require sprinklers to protect everything else, so why not the same for one- and two-family homes?" she asks. "Building a home is more than selecting a grade of carpet, or deciding if you want solid cherry cabinets. Sprinklers are common sense."

Scott Sutherland is executive editor of NFPA Journal.

FEEDBACK:
Send us your comments and questions

HBA VIRGINIA

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July 14, 2009

Board for Housing and Community Development
Main Street Centre
600 East Main Street, Suite 300
Richmond, Virginia 23219

Dear Board Members:

On behalf of the Home Builders Association of Virginia (HBAV), I would urge the Board to accept the recommendation of your experienced and qualified Codes and Standards Committee to make the installation of Sprinkler systems an option in Virginia, and to resist the unproven need to Mandate Sprinklers in all new 1 & 2 family dwelling units. HBAV is a 5,000 member organization of home builders and companies that provide products and services to the housing industry in Virginia. The statewide association is one of Virginia's largest business organizations.

I would begin our comments by informing the Board that, as of this date, NOT A SINGLE STATE IN THE NATION has adopted the Sprinkler Mandate. I would also share with you that three state legislatures (Texas, Idaho and North Dakota) have already passed legislation to prohibit the adoption of the Sprinkler Mandate by localities and that 11 other states are in the process of considering the similar legislation.

HBAV would also take this occasion to remind the Board that the housing industry is currently experiencing an historic downturn in starts/sales. In Virginia, annual new home starts have fallen from 49,800 units in 2005 to less than 18,000 in 2008. In 2009 in Virginia, new home starts are forecast to be less than 15,000 units.

It is also important to note that a very high percentage of the current start/sales that are occurring are new homes designed for modest income Virginians, such as first time home buyers. The cost of installing sprinklers in all new 1 & 2 family dwelling units, including workforce and first time homebuyer houses, is estimated to be $2.66 per square foot. That additional cost (approximately $5,000 per new home and double that amount for new homes served by water wells) could significantly reduce the number of buyers who could qualify to purchase a new home. This is not the appropriate time to consider such an expensive and unneeded mandate for new housing.

Furthermore, according to the U.S. Census Bureau, from 1979 to 2003, the death rate per million persons from house fires has dropped 58%, despite the fact that during that time millions of new homes were added to the nation's housing stock. That one statistic makes the case that this

Sprinkler mandate is not needed. It will only add to the cost of housing and likely result in a further delay in the recovery of the housing industry in Virginia.

Over 50 local businesses are typically involved in the acquisition, financing and construction of every new home in Virginia. Many state and national efforts have been enacted in recent months to put these local and often small businesses back on the job. This is not the time to create an impediment to the recovery of the housing industry, which the home building industry believes the Sprinkler Mandate would do. Right now, we need more Virginians back on the job, not more Virginians being adding to the unemployment line!

The membership of HBAV is also opposed to the Sprinkler Mandate because we fear the mandate will subject more homeowners to the risk of a house fire. HBAV strongly believes the cost associated with the installation of a sprinkler system ($2.66 per square foot and double that amount for new homes served by water wells), will force more Virginian's to seek less safe, existing or older housing rather than a more safe new home. Price does matter to those seeking shelter, especially to those seeking their first home.

Today's building codes already include many provisions and technology innovations designed to provide safety from fire. They include fire blocking, draft stopping, emergency escape and rescue openings, outlet spacing and capacity, fire walls and fire separation, modern heating systems and energy efficient housing and most importantly interconnected hard-wired smoke detection systems. Most older homes do not include this full list of current fire safety provisions. We sincerely fear the additional and undeniable new cost of the Sprinkler Mandate will force Virginians to choose less safe, less costly older housing.

This is the wrong proposal at the wrong time, and will result in very little benefit compared to the significant cost of installation and future maintenance. In fact, as outlined above, the Sprinkler Mandate could result in more loss of life from older home fires.

Once again, HBAV urges the Board to accept the recommendation of your experienced and qualified Codes and Standards Committee to make the installation of Sprinkler systems an option in Virginia, and to resist the unproven need to Mandate Sprinklers in all new 1 & 2 family dwelling units. We would also urge the Board to urge fire officials to better educate all Virginians of the need for working smoke alarms in existing housing.

Best regards,

Michael L. Toalson
Executive Vice President

July 15, 2009

Board for Housing and Community Development
Main Street Centre
600 E. Main Street
Suite 300
Richmond, VA 23219

RE: SPRINKLER MANDATE

Dear Members of the Board,

I am **STRONGLY OPPOSED** to the ICC vote to mandate sprinkler systems for all new one and two-family homes to be built in Virginia.

I URGE YOU TO VOTE "NO" and exercise your option to reject the sprinkler industry funded and fire official hijacked code-amendment process at the ICC Convention in Minneapolis. The following facts must be considered before casting your vote:

- Current existing codes in today's homes have proven statistically successful in preventing deaths from house fires
- Working smoke alarms save lives, while sprinkler systems will only minimize the extent of property damage in the rooms where fire is occurring, and increase property damage in rooms where fire has not yet spread
- Sprinklers react to heat, not smoke. Deaths from house fires are almost exclusively caused by smoke inhalation
- High costs to install and maintain sprinkler systems will further erode availability of affordable housing, while providing no definitive documented benefits

Many more compelling reasons to REJECT THIS MANDATE exist. I urge you to investigate ALL of the arguments, both pro and con, before you vote on this matter. I am certain that any reasonable review of the facts will lead you to conclude that this mandate is a very bad idea promulgated by an agenda-led coalition of well intentioned but misinformed fire officials and their sprinkler industry benefactors.

Sincerely,

Michael D. Newsome

McMahan, Alan (DHCD)

From: Eubank, Paula (DHCD)
Sent: Wednesday, July 08, 2009 8:51 AM
To: Hodge, Vernon (DHCD)
Subject: Fw: Residential Sprinklers

From: Beverly London <mc162kinley@yahoo.com>
To: Eubank, Paula (DHCD)
Sent: Wed Jul 08 06:30:13 2009
Subject: Residential Sprinklers

Ms. Eubank

I am writing to state that I oppose the mandating of sprinklers in new residences built in the Commonwealth of Virginia.

I have been in the building industry for 30+ years, while I've seen a lot of changes, not all of them were for the better. I am very much opposed to enacting any new code that would require sprinklers in new homes, my reasons:

1) Initial cost would add an unnecessary additional expense.
2) An additional system to maintain--most would not begin to know how to maintain a sprinkler system.
3) Lack of adequate water supply in many communities within the Commonwealth. I for one live in a home I built on a hill in the Town of Broadway--at times my water pressure is marginal--while when I built the home in 2003 I was the only home on this hill, that has changed and with those changes came my challenges in water pressure. How would those on a well system address an adequate water source--a reservoir and fire pump--another additional expense which I feel would prohibit some from owning their own home.
4) We are all responsible for our own well being--while I understand, to a point, the Fire Marshalls and fire companies desire to make their professions safer, I feel this mandate would only address a small portion of their many challenges. If the state wants to make their jobs safer then it's time to rid the landscape of mobile homes found in the trailer parks that dot the landscape. Sprinklers in our homes is NOT the answer. Operable smoke detectors are--if you can't get a homeowner to change something as simple as a battery (thank God new homes have to be hard-wired), what makes our government think they're going to maintain a sprinkler system?

When you think about it, there are many issues that will be brought into play with a residential sprinkler system: water quality--there are many rural areas that have a good deal of mineral deposits in their water source--I bought a home in Tenth Legion ten years ago--all the plumbing fixtures had to be replaced--why?, because the water system had compromised their integrity. The mineral deposits could be scraped from them.

Freezing in attics and crawlspaces--another issue--unless the system is properly installed, maintained AND serviced the initial cost is all but wasted.

This is not the time for MY Commonwealth to mandate residential sprinklers.

I'm afraid I'm limited in time to prepare my opinion and I apologize for this, but I am willing to assist in any capacity I can to further investigate and research all sides of this issue. You need only contact me for further input.

Sincerely,

July 6, 2009

Mr. Emory Rodgers
Deputy Director of Building & Fire Regulation
Department of Housing and Community Development
The Jackson Center
501 North Second Street
Richmond, Virginia 23219-1321

Dear Mr. Rodgers:

On behalf of the Virginia Water Well Association (VWWA), I would like to submit the following comments on the Department of Housing and Community Development's proposal of mandating residential fire sprinklers for new construction of one and two family homes in Virginia.

The VWWA discussed this issue thoroughly at their most recent Board meeting and unanimously concluded that mandating the installation of residential sprinklers was an extremely expensive way to try to protect homeowners particularly when hard-wired smoke detectors are much less expensive and have a proven track record of saving lives. We believe that--if enacted--this requirement will be particularly expensive for homeowners in rural areas that utilize a private water well for the potable water needs of that dwelling. Depending on the sprinkler system's demand when activated, the design of the private water system would need to include this additional demand, therefore creating even greater costs. While the costs for such a system would vary on the size of the home and number of floors, it is safe to conclude that we are talking a minimum of several thousand dollars for even the smallest homes.

While the members of the VWWA would likely stand to make more money with the passage of this regulation we truly do not feel it is in the best interest of homeowners--particularly in this economy--to require these systems at this time. That said, should there be homeowners who would like to install these systems and have the resources to do so, we believe it would be highly advantageous for the Department to issue optional guidelines that would provide the necessary direction for their installation.

Many thanks in advance for your consideration of our position.

Sincerely,

Jane Cain

Jane Cain
Executive Director

P.O. Box 1128, New Market, Virginia 22844
540.740.3329

Stephen Thomas
HOMES

7/14/09

To: Virginia Board of Housing and Community Development

Re: Residential Fire Sprinklers

Dear Members of the Board,

Before making a decision on whether or not to mandate residential fire sprinkler systems in Virginia, please read the following statistics and carefully consider the impact this will have on the cost of new housing in an already depressed housing market. Thank you in advance for your time and consideration.

Sincerely,

Stephen N. Thomas

President

10 Reasons Why Mandating Fire Sprinklers

Makes No Sense For Virginia

The International Code Commission (ICC), at its September 2008 meeting, voted to mandate the installation of fire sprinklers in all newly-constructed one and two-family homes. Because states have the option of removing some or all of the ICC codes when they adopt their building codes, Virginia may choose not to mandate installation of fire sprinklers.

3601 Mayland Ct. • Richmond, VA 23233 • Phone 804-672-6806 • Fax 804-672-1943
"Established 1979"

Statistics show today's better built homes are saving lives. From 1979-2003 the death rate per million persons from house fires dropped 58 percent, according to the U.S. Centers for Disease Control. That trend will continue as more new housing stock is built, stronger building codes are enacted and especially as smoke alarm maintenance by homeowners improves.

Sprinklers are rarely needed for house fires. Sprinkler proponents claim that a residential system is reliable in 96-99 percent of all reported structure fires where the fire was large enough to activate the system. But reports from the National Fire Prevention Association (NFPA) show that the number of fires that occur in one- and two-family dwellings equipped with sprinklers are so few that they are not shown in studies done by the organization.

Home insurance rates do not decrease with their use. Sprinkler proponents claim the cost of home insurance decreases when you install fire sprinklers. It's true that some states offer insurance credits for having fire sprinklers in the home. Using a conservative sprinkler cost estimate of $1.50 per square foot in a 2,300-square-foot home with an annual property insurance rate of $1,000, it would take approximately 35 years for a 10 percent credit to pay for the system. Insurance agents in the Richmond area say credits rarely are given above 3.5 percent. Throw in maintenance costs and it would take even longer for the credit to pay its due for the system.

However, that does not offset the increased costs charged for potential water damage and flooding. In most cases sprinklers go off in areas of the home where fire is not occurring, causing more claims for water damage than fire damage. Virginia insurance agents say this drives the cost of insurance higher for people who have sprinkler systems.

Smoke alarms potentially save more lives than sprinklers. A 2006 study by the U.S. Fire Association (USFA) on the presence of working smoke alarms in 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. USFA and NFPA data continue to show that the vast majority of home fire fatalities occur when there are no operational smoke alarms. The most recent NFPA report on smoke alarms estimates that more than 890 lives could be saved annually if every home had a working smoke alarm. From 2000-2004, 65 percent of the fire fatalities reported occurred in homes where smoke alarms were not present or were present and did not operate.

Sprinklers will harm efforts at providing affordable housing statewide. According to an August 2006 survey of home builders done by the National Association of Home Builders' Research Center, the average sprinkler system costs $2.66 per square foot to install in a new home. For the average home size considered to be affordable housing in Virginia – 1,800 to 2,200 square feet – the maximum cost would be approximately $5,850. In the Richmond area, about 710 families lose the ability to qualify for a new home mortgage with each $1,000 increase in the price of a new home. Mandating fire sprinklers would keep more than 4,100 families from being able to buy affordable housing in the Richmond area.

In rural areas of Virginia not served by public water supply systems, the cost to install a sprinkler system would DOUBLE to nearly $10,000. Larger pumps would have to be installed water wells, a minimum 300 gallon storage blatter would have to be installed and it is likely that a back up generator would be required for required sprinkler systems to function during times when the homeowners electricity had been interrupted.

The Sprinkler Mandate will force more Virginians to seek less safe older housing. The anticipated cost of the Sprinkler Mandate ($2.66 per square foot) will force many Virginians to abandon their hope for a new home and force them to seek older less safe housing. Today's Building Codes already include many provisions and technology innovations designed to provide safety from fire. They include fire blocking, draft stopping, emergency escape and rescue openings, outlet spacing and capacity, fire walls and fire separation, modern heating systems and energy efficient housing and most importantly interconnected hard wired smoke detection systems. Don't force Virginians to choose less safe, less costly older housing.

Sprinklers are much more difficult and time consuming to maintain than smoke alarms. Homeowners have a difficult time remembering to change the batteries in their smoke alarms once every six months. A sprinkler system requires much more maintenance than simply replacing batteries. Based on the problems with maintaining smoke detectors, it is easy to deduce that homeowners will not maintain sprinkler systems at the level required for them to be at maximum efficiency. More lives can be saved by educating the public to the importance of maintaining hard-wired, interconnected smoke alarms in proper operating condition than through mandating fire sprinklers.

Sprinklers can be damaged by extreme cold, causing water damage. Should a home lose power for several days, as occurred in some parts of the Richmond area during the early March snowstorm, the basins that hold water for sprinkler use can freeze and burst. Homeowners most likely would have to take measures to keep heat in the water basins, further increasing the cost that many rural Virginians can't afford.

Annual sprinkler installation costs will greatly exceed property losses nationwide and in any jurisdiction where they are mandated. For example, had this mandate been in place in 2005 the installation cost to builders would have been almost $10.2 billion based on an average square-foot home with a cost of $2.66 per square foot. The NFPA reported that the total home property loss – new and existing homes – due to fire in 2005 was less than $5.8 billion. The installation cost would have been nearly double the loss. As new homes continue to be better built, the difference between installation cost and property loss will continue to increase, and statistics show most people forced to have these installed will never use them in their home.

Bain-Waring
3002 Hungary Spring Road
Richmond, VA 23228
O.) 804-672-3994
F.) 804-672-2508

Board of Housing & Community Development
Main Street Center
600 E. Main Street
Suite 300
Richmond, VA 23219

Dear Sirs,

I am writing to strongly oppose the regulation that would require fire sprinkler systems in all new single family homes.

Our company builds all Energy Star and EarthCraft certified homes. We do not mind trying new and better ideas in housing. The thought of adding another pressure water system inside a dwelling is not a good idea. We currently have hard wired and battery operated smoke detectors in ample locations to meet safety needs of new homeowners. The initial cost of over $6000.00, plus maintenance and testing, is beyond most homebuyer's ability now and could lead to neglect of the fire sprinkler system. This may ultimately defeat the purpose of what has been proposed.

Moisture causes a home's biggest problem. We build to keep water out but also to supply water needs in homes. The failure of these systems leads to mold, mildew and unhealthy air quality in homes. To add another water system inside the walls is asking for more trouble. There will be more pipes for an inadvertant nail or screw to penetrate, fittings to fail or accidental discharges to ruin the inside of a home.

We struggle in this economy to get homeowners to pay $5000.00 more for a high-efficiency home that saves 30% now. Very few will pay a $6000.00 more for sprinklers, and the small percentage of those who do, will value it. To mandate sprinklers is not necessary and should not be added to a builder's requirements.

Sincerely,

MarkA. Waring
Vice-President
Bain-Waring

NFPA's Fire Sprinkler Initiative

04/20/2009

How cheap do sprinklers have to become before they're considered cost-effective?

The cost of residential fire sprinkler systems has been a major point raised by builders in the residential fire sprinkler battle. They often cite unknown studies pointing to how many people will not be able to afford a home if the residential (one and two-family) code requirement is adopted.

I recently sat next to an actuary during one of my many flights and engaged in conversation as I often do with my seat mates. Of course, the conversation turned to residential fire sprinklers when he asked what I do for a living. So began the opportunity to take advantage of a "teachable moment" as I explained the whole residential sprinkler issue to this person who, as many persons, had not even thought of this technology when making a home purchase decision.

The very first question he asked after he learned all about this life safety technology was, you guessed it; how much does it cost? I explained about the 1 to 1.5% of a home's cost and the research putting this cost at $1.61 a sq. sprinklered foot. Immediately his mathematical mind went to work and within seconds he said; "That would only translate into approximately $5.00 extra mortgage payment a month" After I got over my awe of his mathematical abilities without the use of a calculator I remembered reading somewhere someone say that the additional mortage amount would equal the cost of a "Big Mac" a month.

During one of the recent hearings, someone provided testimony begging the question posed by the title of this blog. I bring it to you here in its entirety and urge you to make similar analogies, if given the chance, when addressing the cost of residential sprinkler systems. The testimony follows:

"To really look at the issue of the cost impact on homes and whether sprinklers will impact the cost of affordable housing, there is a basic question that has to be asked, "What drives the price of a new home?" In many, if not most, markets, the answer to this question is not construction costs, but instead, what the market will bear, with sales prices rising and falling based on what buyers are willing to pay. In such markets, costs associated with mandatory sprinklers are absorbed into the price by adjusting other costs or features or builder markup.

Even if there is an increase in the cost of a home based on sprinklers, the impact on a monthly mortgage payment is negligible in an average home.

Consider a hypothetical $3,000 sprinkler system in a $300,000 home with a 6.5% mortgage, a 5% credit on a $2,000/year insurance bill, and a combined Federal/State income tax rate of 33%; the net cost of fire sprinklers, after mortgage related tax deductions, would be $4.37 per month. This represents a 0.23% increase in the monthly payment and roughly equates to the cost of a premium beverage at your local coffee shop
So, I pose the question to everyone listening to this program today, just how cheap do sprinklers have to become before they're considered cost-effective?"
Maria Figueroa
Posted at 10:52 AM | Permalink

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Listed below are links to weblogs that reference How cheap do sprinklers have to become before they're considered cost-effective?:

David A Chaplin and Eileen G Lepro
929 Homestead Drive, Salem, VA 24153

Steve Calhoun
Department of Housing and Community Development
501 N. Second Street
Richmond, Virginia 23219-1221

Mr. Calhoun,

We are writing this letter as a form of public comment and protest to the proposed regulations about to be adopted by the Board of Housing and Community Development. Please pass this information to the Board for consideration.

The effectiveness of residential sprinkler systems has been well documented since the first community required their use in 1969. The three decades of history in San Clemente, California, as well as decades of experience in other localities, has proven these systems are a reliable strategy which has a profound impact on fire injuries and deaths. The unintended consequence has also been a considerable reduction in property loss due to fires as well.

The arguments made by opponents to these systems are not based upon established fact, rather supposition and fear tactics which were the same arguments used to oppose residential smoke detectors. Contrary to unsubstantiated claims by the opponents of this model code change, the affordability of homes built with residential sprinklers is not an issue. Many Habitat for Humanity homes, which are built on very small budget, are having these systems installed. There are also published independent reports by the National Fire Protection Association and the National Institute for Standards and Technology which clearly outline the affordability and cost effectiveness of these systems.

Give the proven results and affordability of residential sprinklers, I am asking the Board of Housing and Community Development to remove the Virginia Home Builders Association proposal from the proposed regulations. In the months to come, there will be greater opportunity for the industry to come to the table in order to develop a workable proposal that improves the safety or our community's residents and firefighters.

Sincerely,

David Chaplin, CFPS (Certified Fire Protection Specialist)
David Chaplin

Eileen Lepro, MPH (Masters in Public Health)
Eileen Lepro

COMMONWEALTH OF VIRGINIA
COUNTY OF HENRICO

Division of Fire

EDWIN W. SMITH
CHIEF, DIVISION OF FIRE
(804) 501-4900
FAX (804) 501-4642

An Internationally Accredited Fire Service Agency

July 7, 2009

Mr. Tom Fleury, Chairman
Board of Housing and Community Development
Main Street Centre
600 East Main Street, Suite 300
Richmond, Virginia 23219

Dear Mr. Fleury:

I would like to express my concerns to you and the other members of the committee regarding proposed code changes to sections 2009 IRC R313.1 and 313.2 submitted by Mr. Toalson, representing the Home Builders Association of Virginia. These proposed changes would not require the installation of automatic fire sprinkler systems in townhomes and one and two family dwellings as required in the 2009 International Residential Code. I would like to specifically address the supporting statement that Mr. Toalson has provided.

In Mr. Toalson's "statement" he has seven questions. These questions are not facts, they are simply tactics used to place doubt in the minds of others. Since this is not a court trial, reasonable doubt should not be considered when making this decision. He also went on to state facts that he has received from the Department of Fire Programs regarding the number of fires over the past nine years and in one of the statements immediately following those statistics, he uses the words "maybe" and "might". These words are not affirmations of the data, only carefully selected words that detract from the actually facts that he has used himself. In his reference to other improvements in the codes, he uses a 20 to 30 year time line to measure the results. What if these steps do not provide the desired results, the implementation of the sprinkler codes, something that he confirmed to "*reduce deaths, injuries and property damage*" is now 20 to 30 years behind? Using his own numbers of an average of 30,000 new homes being constructed in Virginia annually, that would equal 600,000 to 900,000 homes not protected by something we both agree that will provide the desired results.

One of Mr. Toalson's questions asks "*Would better property maintenance and fire prevention enforcement and education achieve positive results as well...*" .He has a very valid point. In many industrialized nations that have lower fire loss, injury and death rates than the United States, mandatory home fire inspection programs exist. There are stiff criminal penalties for even having an accidental fire in some nations. Since the VSFPC specifically exempts dwellings from routine inspections, implementation of a

greater enforcement approach would require a much more controversial code and law changes. Where these are very effective approaches to the nations fire problems, I am not sure Virginia is ready for those steps.

Mr. Toalson's estimates show an annual cost of $90 to $150 million dollars to install fire sprinklers in new homes each year in Virginia. The VDFP statistics show that in 2008 there was almost $122 million dollars of property loss in residential fires. This does not reflect Virginia's portion of the cost for fire and burn injuries that totaled over $7.5 billion dollars nationally in 2005, based on information from the US Centers for Disease Control. This figure also does not consider the cost for localities to provide fire suppression services for those fires. It is easy to see that the cost of controlling these fires in Virginia would easily exceed the cost to install the fire sprinklers in new homes. The major difference is that the cost of suppression, education, enforcement and medical services as a result of these fires is shared by all of us through taxes, insurances costs, etc. The cost of the installation of a fire sprinkler system in a new home is only the responsibility of the homeowner. If a home buyer chooses to upgrade features or not, it really only affects themselves directly, where even an accidental fire in the same home also indirectly affects not only neighbors, but hundreds if not thousands in the area.

In as much as the installation of smoke detectors has done a great deal to reduce the fire and property loss numbers in the US, they are only one component in the detection and suppression of fires. I am reminded of the story about a man that is walking on the beach and he finds hundreds of starfish washed ashore and dying. When he stops to throw one back into the water someone asked him why was he doing that, there were too many to make a difference? The man replied, " It made a difference to that one!" Now is the time for us to make a difference, maybe to one person at a time. Maybe we can make a difference to 10 or even 100 people. But let's not forsake the few because we cannot prevent every fire that results in property loss, injury or death.

Please feel free to contact me if you have any questions or concerns.

Respectfully,

W. David Seay
Chief Fire Marshal

Department of
Fire and Life Safety

Stephen P. Kopczynski
Fire Chief/Director

York County
VIRGINIA

Fire and Rescue O
Prevention and Communi
Emergency Man

July 7, 2009

Mr. Steve Calhoun
Virginia Department of Housing
and Community Development
501 North Second Street
Richmond, Virginia 23219-1221

Dear Mr. Calhoun:

I am providing this correspondence to you, the Virginia Department of Housing and Community Development and the Virginia Board of Housing and Community Development regarding Uniform Statewide Building Code (USBC) regulations (specifically related to fire sprinklers) that are under consideration by the Board.

The effectiveness and life-saving capability provided by fire sprinklers has been well documented across the nation. Further, communities that have included residential sprinkler systems as part of their community's overall fire protection system have realized that these systems are reliable, cost effective, minimize potential property damage due to fire and, most importantly, have a profound impact on fire injuries and deaths. Unfortunately, opponents to such life-saving capabilities may not fully understand the technology of residential fire sprinklers, may have and/or use information that is not factual and, finally, may be primarily focusing on the cost factors (which may be inaccurate) versus the ultimate benefit of saving precious lives of human beings. In fact, the benefit and the low cost of residential sprinklers has been recognized as so important in some communities that they are now being installed in Habitat for Humanity homes where costs for construction are always a concern.

In the Fire Service, our departments routinely experience unnecessary property destruction, injuries and/or deaths due to fires in homes, so much of which could be avoided and/or significantly limited by residential sprinklers. Recognizing such, I urge the Board of Housing and Community Development to retain the sprinkler requirements as adopted by the International Code Council in 2008. If you decide otherwise, at the very least, reconsider the actions of your Codes and Standards Committee on this matter in order to provide additional opportunities for

301 Goodwin Neck Road • P.O. Box 532 • Yorktown, Virginia 23690 • (757) 890-3600 • Fax: (757) 890-3609
TDD (757) 890-3300 • Email: flsafety@yorkcounty.gov
A Hampton Roads Community

education, debate and consideration so that a proper and informed decision can be made duri the course of the USBC Regulation Update process.

Thank you for the opportunity to provide comment on this important matter in the interest saving lives in the Commonwealth of Virginia. I am most hopeful that the Board will give serious and thoughtful consideration.

Sincerely,

Stephen P. Kopczynski
Fire Chief

ese

Virginia Fire Chiefs Association, Inc.
P.O. Box 70907, Richmond, Va. 23255-0907

Phone: 888-818-0983
Web Site: www.vfca.us

July 7, 2009

Mr. Steve Calhoun
Department of Housing and Community Development
501 N. Second Street
Richmond, VA 23219-1221

Dear Mr. Calhoun:

On behalf of Virginia Fire Chiefs Association, I am pleased to include this letter as public comment to the Proposed Uniform Statewide Building Regulations under consideration by the Board of Housing and Community Development.

The fire loss in residential occupancies in this country is alarming, and manual firefighting methods are not the answer. The way to attack the problem is to limit the fire growth where it occurs in dwellings, and we have the technology to do that. Studies by the U.S. Fire Administration indicate that the installation of residential fire sprinkler systems can save thousands of lives, prevent a large portion of injuries, and eliminate hundreds of millions of dollars in property loss. The cost effectiveness of these systems has been proven to positively impact fire safety for the citizens of the community and the firefighters who respond to the calls.

Unfortunately, the arguments made by opponents against these systems are not based upon established fact, rather supposition and fear tactics which were the same arguments used to oppose residential smoke detectors. If they would thoroughly educate themselves on residential sprinkler technology, they would surely understand that developers and builders can achieve reduced construction costs while providing higher value homes for their customers and, at the same time, enhance public safety in the Commonwealth of Virginia.

Given the proven results and affordability of residential sprinklers, I am asking the Board of Housing and Community Development to remove the Virginia Home Builders Association's proposal from the proposed regulations. I am confident that in the months to come, there will be an opportunity for all stakeholders to come to the table in order to develop a workable proposal that improves the safety of our community's residents and firefighters.

Sincerely,

James A. Gray, Jr., President
Virginia Fire Chiefs Association

minutes to 8 minutes. Fire department best case arrival is of the order of 5 to 6 minutes on scene. By the time fire departments set up occurs, the floor may well have collapsed. I enclose the original data table from the National Research Council of Canada, where the research was conducted. I urge that the Board reconsider the codes and standards committee decision, and the published initial document of the USBC 2009 Edition, the Board remain with the IRC mandate as it stands. The consequences of the codes and standards committee June 22nd action are shown in the table above, and they are very grievous for the safety of citizens and firefighters. Thank you.

MR. CALHOUN: Rand Sompayrac.

MR. SOMPAYRAC: Good morning ladies and gentlemen. My name is Rand Sompayrac and I am the President of the Home Builders Association of Virginia. I want to thank you for the opportunity to comment to the 2009 proposed changes to the Virginia Uniform Statewide Building Code. As many of you know, the Homebuilders Association is one of the largest business associations in the state, with nearly 5,000 business member firms and this year, HBAV celebrated its 53rd anniversary. Today we brought several builders and associates with us. I would like to ask all of those builder associates in the room

today who are opposed to this mandate please stand. (Members standing). Over the next year this Board will consider many proposed changes to the USBC that relates to the method of construction and materials that are required to be used in the construction of new housing and new buildings in Virginia. This is a very important responsibility. Since the USBC was first adopted in 1972 HBAV has been an active participant in the process. In the most respectful manner possible, I would remind the Board that the Code of Virginia empowers you to adopt the USBC and directs you to protect the health, safety and welfare of residents of the Commonwealth, at the least possible cost. The Code of Virginia also directs you to adopt regulations that are reasonable and appropriate.

In that spirit, I would like to urge you to accept the recommendation of this Board's experienced and most qualified Codes and Standards Committee to make the installation of sprinkler systems an option in Virginia and to resist the unproven need to mandate sprinklers in all new one and two family dwelling units in Virginia. It's my understanding that currently not a single state in this nation has adopted a sprinkler mandate, and only one may be considering it. Only one. I would also remind you that the housing industry in Virginia is in the midst of a historic downturn. Housing starts are anticipated to

decline to less than 15,000 units statewide this year, down from almost 46,000 in 2005 and, those few new homes that are selling, fall into one category, lower cost, first time homebuyer category. In Virginia it's estimated that the proposed mandate will add an additional $5,000 of cost to the price of every new home that is served by public water systems and nearly $10,000 in cost for new homes that will depend on wells for the water supply. This is not a time to dictate by state regulations additional new costs to meet this mandate because the USBC already includes many provisions and technology innovations designed to provide safety from fire. That includes fire blocking, draft stopping, emergency escape and rescue openings, outlet spacing and capacity, fire walls and fire suppression, fire separation, modern heating systems and energy efficient housing and most importantly interconnected hard-wired smoke detection systems. Most older homes do not include this full list of current fire safety provisions. Many don't even include a working smoke detector. We sincerely fear that the additional and undeniable increase in costs of these proposed sprinkler mandates will force many Virginian's to chose less safe, less costly older housing.

Finally, HBAV would urge you to reject any notion or suggestion that modern housing is less safe, or

less appropriate to be constructed in Virginia. That is just false. Modern housing is trending toward Green Built Housing, some of the most popular and energy efficient housing in America. It is the future of housing today and should be embraced and encouraged by all. It will keep housing more efficient and safer. This proposed mandate is the wrong proposal at the wrong time, and will result in very little benefit compared to the significant cost and installation and future maintenance needs. Remember, from 1979 to 2003, the death rate from house fires dropped 58 percent.

MR. FLEURY: Would you wrap up please?

MR. SOMPAYRAC: Yes, sir. Once again, HBAV expressly urges this Board to accept the recommendation of this Board's own Codes and Standards Committee to make the installation of sprinkler systems an option in Virginia. Thank you for your time and consideration.

MR. CALHOUN: J. R. Tolbert.

MR. TOLBERT: Good morning Mr. Chairman. Thank you very much for having us here today to talk about this very important issue. My name is J. R. Tolbert and I'm the advocate for Environment Virginia. Environment Virginia is a statewide citizens funded advocacy organization working for clean air and clean water and preservation of open spaces. Today I stand

can be used and it's UL approved to use the signal to use the existing smoke and existing thermostat and existing communication and we can give these fire fighters a jump on these fires. Thank you.

MR. CALHOUN: John Conrad.

MR. CONRAD: Good morning, I'm John Conrad. I'm with Miller and Smith in McClean, Virginia builder and developer. I'm speaking to you this morning in hopes that I can be one small voice of reason that will allow you to reject the notion that residential sprinkler systems can be a mandatory component in new homes. During my career, I've seen any number of code revisions that have been enacted in order to make a home more safe. Smoke detectors in the home, some now have them in every bedroom. Bathrooms and exterior building and now we have them in kitchens, basements and garages. We have firewalls between units, fire protection stairs, and fire stopping petitions. Multi-family units and townhouses have fire retardant plywood on the roof and every type of residential construction we are obligated to plug every little hole to stop drafts from spreading the fire. My point is not to brief you on the aspects of building code but to demonstrate that there are many fire and safety measures that the home builders already have embraced, not necessarily because it's mandated but

because it makes sense. What does not make sense is the use of domestic sprinkler systems. All the things I just mentioned are rather inert, the homeowner doesn't need to do anything and the system will work. Yes, the battery backup on the smoke detector needs to be changed but if you don't make the change, the penalty will only be an irritating noise. Sprinkler systems on the other hand, if not maintained properly, will cause problems in the house. Look at where fire start, in the kitchens, bedrooms, furnace rooms. All areas that are protected by smoke detectors. You may ask what happens if the smoke detector goes off and no one is home, who will extinguish the fire. Is the sprinkler system, well, isn't the sprinkler program alleged to protect the lives, if no one is home, there's no need to protect. If someone is at home, they'll either extinguish the fire or vacate the dwelling and the smoke detector has done its job. On the other hand, when a sprinkler malfunctions when no one is home, the house will flood or if the sprinkler has a malfunction and someone is home, it causes a disaster. One of the basic axioms that I learned in my early career of homebuilding is not to introduce water pipes into an unheated attic; a recipe for disaster. A small pin hole can freeze and burst a pipe. Sprinkler systems must be checked yearly on the other hand and the way to check the system is to

introduce water pressure. I have seen sprinkler heads malfunction during the system checks and discharge filthy water all over the building. Many homes in Virginia are served by private wells and their well capacity is rated for domestic water use. What good would the sprinkler provide if the capacity of the well or pump could not keep up with the sprinkler system? Please ladies and gentlemen, don't allow the fear factor spread by others to cloud your judgment. Let's be satisfied with all the safety features that are now provided in a house and do not burden the homeowner with the constant threat that the sprinkler head or the power system will not function. Thank you.

MR. CALHOUN: Jayme Hill. Is Jayme Hill here?

MR. HILL: (No response)

MR. CALHOUN: Lynn Underwood.

MS. UNDERWOOD: I'm a building official for the City of Norfolk and also President of the VBCOA. I'm here this morning to assure you that Virginian's remain active in code development both at the national and state level. Before I do that, let me congratulate Governor Kaine and this Board for the achievement earned this week. CNBC has named Virginia its top state for business. One factor cited is a streamline regulatory

VBCOA values the relationship that we have with this Board and looks forward to working with each of you during the code change cycle. Thank you for your hard work and your dedicated service, your friendship and your continued support for the profession of building safety. Thank you.

MR. CALHOUN: Bill Long.

MR. LONG: Thank you Mr. Chairman and Board members, I'm Bill Long and I'm with Toll Brothers, a major national builder. We think the sprinkler provision should be an option, mainly because I've been a builder for over 40 years in the Commonwealth. I've been a member of the VBCOA 23 years. I've placed my concerns with all the other homebuilders and concerned about different factors in the homebuilding industry. Homebuilders try to build the most efficient and safe housing that we can on a limited amount of funds. We have to operate within those funding limitations. As has been mentioned before, the building code has changed and we have many things in new buildings now. We see a lot of deserted houses now. We have various components built into new buildings now and we've seen a lot of deserted houses now especially some of these town homes and you have to worry about protecting people on each side of that unit. Like we had storms through the area

last night and if their sprinkler systems, what do they do when no power and no water is available. What will protect the other homes? We're building homes with the best fireproof materials available but you have to be very concerned on these sprinkler systems. As I say, if there's a power problem or if it malfunctions. We make units as fireproof as best we can. It looks like we're trying to encroach the commercial code with the single family code, even though we have sprinkler systems proposed for single family dwellings. Whose going to inspect and maintain them down the road. How are they going to be inspected yearly? The average homeowner will have to let the fire marshal into the home. These are just some of the things that the Board needs to consider when you make this mandated. Thank you.

MR. CALHOUN: Keith Brower.

MR. BROWER: My name is Keith Brower. I'm the Chief Fire Marshal for Loudoun County. I'm here today representing the position of the Loudoun County Board of Supervisors who have asked you to enact residential sprinkler requirements as part of the 2009 code cycle.

In 1986 knowing the unparallel residential growth was eminent, the Loudoun County Board of Supervisor approved the creation of a consortium to study

be held down on that because the pump and the tank don't have to be rated. It's not like the sprinkler system you have here where all the components must be rated. There's already a standard out there that's a compromised standard. I would ask you to make the residential sprinklers mandatory. Thank you.

MR. CALHOUN: Dave Bailey.

MR. BAILEY: Mr. Chairman and the Board, thank you for allowing us to speak and participate here. I'm speaking today as a resident of Powhatan County. In 1992 my wife and I built a home in Powhatan with no public water in my area we are on a well. In the contract I worked with my builder to set aside one week to have a residential sprinkler system installed. The Virginia Sprinkler Company installed the full 13-D System in 3 days. The full system costs me $3,020. My house has 2,100 square feet of floor area. So, the cost for the system was less than $1.50 per square foot. Obviously the insurance industry knows the benefit of sprinkler systems in buildings therefore, my insurance premiums have been reduced with a 13 percent sprinkler credit. Initially that equals to $86 a year in savings. So, to date my premium savings have paid half the cost of the system. Over the life of the house, the system will more than pay for itself. I've heard some discussion about maintenance of the

system. We've had no leaks or any problems with any piping, sprinkler heads or any system components. The only maintenance I perform is to drain the system once each year but I don't have to but I do it throughout the year. I do it as well as to flush out any sediment that may have accumulated over the past year from the water in the pipes. This process is so easy, that my 11 year old son conducted the entire flushing procedure this year. Often people ask why I've done this and why I spent $3,000 to put the system in. Like many here, since 1976 I been involved and served with the Chesterfield Fire and EMS Department. Over those years, I have run thousands of fires and seen many fire deaths. That has included men, women and children. In 1992, when we built our home and we knew that we were going to have children and we weren't satisfied with the fact of about a 50 percent safety factor. With the residential sprinkler system, our chances jump up to 97 percent to help my family to survive a fire should we have one if I'm not there. So I'm going to urge you to protect future generations of children by voting to install these sprinkler systems. Thank you.

MR. CALHOUN: Mark Granville-Smith

MR. GRANVILLE-SMITH: Good morning, my name is Mark Granville-Smith. I'm currently vice president of the Northern Virginia Building Industry

Testimony at Virginia Board of Housing and Community Development
Residential Sprinkler Systems: July 27, 2009

Citizen: Dave Bailey
1039 Timber Trace Road
Powhatan, Va. 23139

MY HOME RESIDENTIAL SPRINKLER SYSTEM:

In 1992 I had a home built in Powhatan County. With no public water in my area, we are on a well. In the contract I worked with my builder to set aside one week to have a residential sprinkler system installed. The Virginia Sprinkler Company installed the full NFPA 13-D system in 3 days. The full system costs $3,020. My house has 2,100 square feet of floor area. So, the cost for the system was less than $1.50 per square foot.

HOME INSURANCE RATE IMPACT:

Obviously the insurance industry knows the benefit of sprinkler systems in buildings. Therefore, many provide a reduction for homeowners with residential systems. My insurance premiums have been reduced with a 13% Sprinkler Credit. Initially that equaled $86 a year in savings. So, to date premium savings have paid half the cost of the system. Over the life of the house, the system will more than pay for itself.

MAINTAINING THE SYSTEM:

I have not had any problems with our system. There have been no leaks or other problems with any piping, sprinkler heads, or any system components. The only maintenance I perform is to drain the system once each year. I do this to test the functioning of the alarm bell mounted on the back of my house, and to flush out any sediment that may have accumulated over the past year from the water in the pipes. This process is so easy, that my 11 year old son conducted the entire flushing procedure this year.

RATIONAL FOR INSTALLATION OF THE SYSTEM:

Since 1976, I have served in the Chesterfield Fire and EMS Department. Over these years, I have run thousands of fires and seen many fire deaths. These have included men, women, and (most disturbing) children. I have come to understand that almost all of these deaths are unnecessary.
In 1992, when we built our house, my wife and I knew that we were going to have children in our family. I know that even with good smoke detectors, my wife and children only have a 50% chance of surviving a house fire. But with a residential sprinkler system their chances jump up to 97%. I am determined that none of my family members will ever die in a fire. Therefore, every home I own, every hotel we stay in, and every vacation spot we stay in does now and will always have a fire suppression sprinkler system.

VIRGINIA SPRINKLER COMPANY, INC.

A VSC Company

P.O. BOX 986 • ASHLAND, VA 23005-0986
PHONE: 804-550-2945
FAX: 804-550-2966

CUSTOMER

INVOICE NUMBER
00021157
INVOICE DATE
06/15/92

UBMITTED
O

2B0062
David Bailey
5805 Elfinwood Rd.

Chester, VA 23831

PROJECT

AR0123
David Bailey Residence

Powhatan, Va

Cust. PO #	Job Number	Contr. #	Pmt. Terms
	AR0123		NET 30

ORIGINAL CONTRACT	3020.00	PERCENT COMPLETE	100.00
CHANGE ORDERS	.00	TOTAL WORK COMPLETED TO DATE	3020.00
REVISED CONTRACT AMOUNT	3020.00	LESS WORK PREVIOUSLY BILLED	.00
		AMOUNT BILLED THIS PERIOD	3020.00
		RETAINAGE PERCENT	.00
		LESS RETAINAGE AMOUNT	.00
		NET AMOUNT THIS INVOICE	3020.00

WORK PERFORMED THROUGH JUNE 1992.

SUBTOTALS	3020.00
SALES TAX	.00
RETAINAGE	.00
NET AMOUNT THIS INVOICE	3020.00

A003883

LIBERTYGUARD DELUXE HOMEOWNERS POLICY DECLARATIONS
LIBERTY MUTUAL FIRE INSURANCE COMPANY
BOSTON, MASSACHUSETTS

POLICY NUMBER H32-231-582835-908 6 **THESE DECLARATIONS EFFECTIVE** 08/08/98 AGENT: BROWDER A W

NAMED INSURED AND MAILING ADDRESS
DAVID E BAILEY
KATHERINE P BAILEY
TIMBER TRACE RD
POWHATAN VA 23139

RESIDENCE PREMISES INSURED:
LOT 9 BLOCK 8

POLICY PERIOD: 08/08/98 TO 08/08/99
12:01AM STANDARD TIME AT THE RESIDENCE PREMISES

FOR SERVICE CALL OR WRITE:
1107 ALVERSER DR
MIDLOTHIAN VA 23113
804-379-9246
CLAIMS: 800-746-7421

SECTION I AND II:	COVERAGES AND LIMITS UNDER YOUR LIBERTYGUARD HOMEOWNERS POLICY		
I:	COVERAGE A - YOUR DWELLING WITH REPLACEMENT COST		$149,20
	COVERAGE B - OTHER STRUCTURES ON RESIDENCE PREMISES		$14,92
	COVERAGE C - PERSONAL PROPERTY WITH REPLACEMENT COST		$111,90
	COVERAGE D - LOSS OF USE OF YOUR RESIDENCE PREMISES	ACTUAL LOSS	SUSTAINE
II:	COVERAGE E - PERSONAL LIABILITY (EACH OCCURRENCE)		$300,00
	COVERAGE F - MEDICAL PAYMENTS TO OTHERS (EACH PERSON)		$1,00

DEDUCTIBLE: LOSSES COVERED UNDER SECTION I ARE SUBJECT TO A DEDUCTIBLE OF $250

PREMIUM SUMMARY:	FORMS AND ENDORSEMENTS SHOWN ARE MADE PART OF YOUR POLICY		
HO 00 03 04 91	BASE COST FOR THE COVERAGES AND LIMITS SHOWN ABOVE		$ 66
HO 04 53 04 91	CREDIT CARD, FUND TRANSFER CARD, FORGERY AND COUNTERFEIT MONEY	$1,000	$
FMHO-886 02/94	VIRGINIA HOME PROTECTOR PLUS		$ 9
SECTION II COVERAGES EXTENDED:			
	COVERAGE E INCREASED LIMIT		$ 1
PREFERRED RISK RATING PLAN DISCOUNTS:	14.0%		
6.0%	INSURANCE TO VALUE CREDIT		-$
3.0%	INFLATION PROTECTION CREDIT		-$
5.0%	NEW OR RENOVATED HOME CREDIT		-$
PROTECTIVE DEVICE CREDITS:	13.0%		-$
13%	SPRINKLER CREDIT		
MULTIPLE POLICY DISCOUNT	5%		-$
NET PREMIUM			$ 5

OTHER ENDORSEMENTS MADE PART OF YOUR POLICY:

HO 01 45 04 91	SPECIAL PROVISIONS	HO 04 16 04 91	PROTECTIVE DEVICES
HO 23 37 04 91	AMENDATORY HOME DAY CARE	2330	CHNG FACSIMILE SIGNATU
2323	ANNUAL MEETING DATE	FMHO-679 03/86	INFLATION PROTECTION

VIHO 775 R3

COUNTERSIGNED 06/18/98

Barry L. Libman SECRETARY

Edward F Kelly PRESIDENT

AUTHORIZED REPRESENTATIVE

From a practical experience point of view, the smoke detectors were great. Two hundred town homes had sprinkler systems and I'm sure they worked when their needed but our experience with them wasn't too good. We had a Christmas tree fire and that wasn't too good. We had sprinkler head problems. There are some practical rules that can be more effective. I heard a question about education. These things are good and they're effective and probably the best way to do it. Finding out and getting information on prior history and why they would work well. By contrast, the house I live in now is built in 1959 and has no sprinkler system but does have a smoke alarm. The smoke alarm went off Christmas Eve and we got it put out. It's all about choice. I think a choice should be available. I think this should be a choice. I know people have talked about the cost benefit ratio and the free market. I would ask you to support this.

MR. CALHOUN: Sean Horne.

MR. HORNE: Good morning, my name is Sean Horne here representing the Roanoke Regional Homebuilders Association. We represent a membership of nearly 400 local members and firms to come here and share with you our concern about the significance and the negative impact of mandated fire sprinklers. To cut it short, I understand that you have received all of the

literature that the National Homebuilding Association and the Virginia Homebuilders Association has provided which shows the decline in home fires over the past 30 years despite the tremendous population growth in America. Many of the homes have become a lot safer through the cost effective code provisions that affect a lot of organizations. Our homebuilders association located in Southwest Virginia. We are mostly rural and rely heavily on well water. It is anticipated that new home costs, as stated earlier, for homes served by well water, would be $10,000 or more. Homeownership is out of reach for many people in Southwest Virginia. It's our belief that such a mandate will have a significant negative impact on the affordability of housing in Virginia. Additionally, homeowners with well water will have to deal with the issues for adequate storage, providing adequate flow and making sure the wells are capable of providing required flows. During dry years, such as 2008, water level at the wells could easily be too low to provide effective sprinkler system. Water tanks, pumps and generators would need to be purchased to help with these problems and that would double the cost of the sprinkler system yet again. We're asking that you not mandate fire sprinklers in Virginia and mandating it would be another hardship on homeowners and create a difficult time. Thank you.

important to understand is just as an example of how the education works. I think both sides have talked a lot about smoke detectors and we agree they do save lives. Smoke detectors have a finite life. I believe you have to replace them after 10 years. I deal with hundreds and hundreds of homeowners every year in my business and I've yet to find one that goes bad. We bring that to their attention all the time. So I would urge you to uphold the decision of the Code Standards Committee and to extend a hand of cooperation to my fellow firefighters to work together and dedicated to fire safety. Thank you.

MR. CALHOUN: Hadden Culp.

MR. CULP: Good morning Mr. Chairman and members of the Board, my name is Hadden Culp, Chief Firefighter from Prince William County, Virginia. I have many years of experience, that includes over 35 years here in the Commonwealth. I've had the unfortunate experience of participating in many, many hundreds of fires. I've stood in the front yard of people's homes who have lost everything. I've had the unfortunate experience of citizens who have passed away out of their houses were on fire and on one occasion, I carried one of my firefighters out of a house that was on fire. Many of these fires could have been prevented through the use of sprinklers. I can tell you a quick story about a fire that

some middle ground. I thank you again for the opportunity to be here today and for the great, great work you are doing. Thank you.

MR. CALHOUN: Tyler Craddock.

MR. CRADDOCK: Good morning, I'm Tyler Craddock representing the Virginia Chamber of Commerce. I urge you to support the recommendations of the Codes and Standards Committee for the sprinkler system's adoption and again mandating this in the family dwellings. Our greatest concern on imposing this mandatory provision on homeowners, how that will damage efforts to make more affordable housing and how that will effect economic development in Virginia. As you may know, the state supply of affordable housing, that choice is close to job centers and are a necessary component of economic development. Houses after all are where the employees and the job centers go at night. Unfortunately, if this proposal would increase the cost of housing in Virginia and it will. The National Association of Homebuilders estimate the cost of these systems adds about $2.66 per square foot and translate that into $4,500 for a 1,800 square foot home. Simply imposing a mandate would add $4,500 to the cost of a basic 1,800 square foot home and that has a definite effect on home affordability and its effect on the Commonwealth.

Housing starts in Virginia declined by 50,000 in 2005 to less than the anticipated 15,000 in 2009. The only part of housing that shows any signs of life are homes constructed in the price range typically known as workforce houses. Housing typically designed or marketed to first time homebuyers. This mandate at this time can decimate a sector of Virginia's housing industry. It's important to remember there are over 50,000 businesses typically involved in the acquisition and construction of new homes. I strongly encourage you to resist any mandate that would in anyway further affect the housing industry and endanger local development. Moreover, Virginia was ranked as the best state in the nation to do business with. The Commonwealth's weakest performance is in the cost of living and for consumers costs of housing. We're doing everything we can to make Virginia more competitive in respect to the cost of living and cost of doing business and other factors that would affect business. Please do not mandate this requirement and effect homeowners.

MR. CALHOUN: David Seay.

MR. SEAY: I'm David Seay the Henrico County Fire Marshal and a member of the Virginia Fire Prevention Association Fire Services. Some people believe that the reduction in fire fatalities in the United States is due to

say homeowners rates will increase because of water damage, mold and other related issues. We urge the board to let new customers decide for themselves. It is important that nothing prevents a homebuyer today from installing a sprinkler system in their home and as a builder, I can assure you that if the client wants a sprinkler system installed in their house, I'll have it installed in their house but it's their choice. Fire officials contribute to a lobbying effort. Fire officials have shown today that they can look forward to an impressive lobbying effort. They suggest they have an educational campaign to the homeowners and convince the customer that their fire officials are right and that their builders will be happy to install a lot of new things. If there's one thing I've learned in many years as a builder, the customers are smart. Homebuyers can figure out on their own if the increased cost in insurance will provide enough added safety features that would be worth the cost. They can also decide whether a fire has been addressed sufficiently through smoke detectors and other technology. We ask that the VHCD Board continue to allow homebuyers to make those choices for themselves. Thank you for your time.

MR. CALHOUN: Doug Kingma.

MR. KINGMA: Good morning. I'm Doug

Kingma. I'm from the Charlottesville Albemarle area. I'm very uncomfortable and I'm sure everyone else standing before you arguing about saving lives. I'm sure no one opposes that. I would like to suggest to you that we as a community have a finite number of resources and that deploying those resources in other ways will produce a better savings of lives than mandating fire sprinklers in new construction. We saw a few moments ago a demonstration of how many people had these sprinkler systems in their homes. If we put them in all new construction next year or the year after, we would still have a very small percentage of the population. I'd like to suggest that the finite resources we have be used more efficiently. Thank you.

MR. CALHOUN: Ed Altizer.

MR. ALTIZER: Good morning, I'm Ed Altizer and I'm the Virginia State Fire Marshal. I'm here speaking on behalf of residential sprinklers. A lot of what I would say has already been said. I'll give you a copy of my entire comments and I will have that information sent in. I got a couple of statistics and comments that have not been given I think and those are very important. In 2008, as has been reported, there were 85 related deaths, 59 percent or 47 were one or two family dwellings; 674 civilian and firefighter injuries; 51.5 percent – 348 were

Virginia State Firefighter's Association
P. O. Box 556
Kenbridge, VA 23944

July 7, 2009

Mr. Steve Calhoun
Virginia Department of Housing and Community Development
501 N. Second Street
Richmond, VA 23219-1221

Dear Steve:

Hope this letter finds you, Bill Shelton, and others doing just fine. I miss my relationship with your board and the staff and I count the years that I was on your board as an enjoyment in my life.

I am writing this letter of public comment on the proposed removal of the residential sprinkler provisions of the International Residential Code (IRC) when this national model code is adopted by the Commonwealth of Virginia. The Virginia State Firefighter's Association which represents some 13,000 members including both volunteer and career firefighters would like to go on record as being strongly opposed to the removal of the residential sprinkler provisions of the IRC.

The Virginia State Firefighter's Association believes that sprinklers in new residential and townhouses will definitely save lives in Virginia. Furthermore we believe that residential sprinklers will also save homeowners as well as the insurance companies money as damage to the structures will certainly be a lot less than what it is today when they experience a fire. Also many people are living longer lives and many are really becoming physically incapable of getting out of the house on their own in a timely manner. Homes of today are also being built of materials that burn much faster and certainly much hotter which compounds the problem to a level in Virginia that we have never seen before.

Given the relatively small cost on a square footage basis to the homeowner when the home or townhouse is constructed it is certainly money well spent not only to protect the home from damage but to protect the lives of the occupants. Also the average homeowner would pay for the cost of the sprinkler system installation in new construction in a very short period of time in savings on insurance premiums.

We would respectively request that the board maintain the residential sprinkler provisions of the IRC and we would also request that the public including the fire community be given a chance to speak to this subject in a well advertised public hearing with ample time for all speakers to be heard.

Thank you very much and best regards to you and others at DHCD.

Sincerely,

Virginia State Firefighter's Association

Dicky Harris

Richard W. Harris, Immediate Past President
harris@meckcom.net

Housing starts in Virginia declined by 50,000 in 2005 to less than the anticipated 15,000 in 2009. The only part of housing that shows any signs of life are homes constructed in the price range typically known as workforce houses. Housing typically designed or marketed to first time homebuyers. This mandate at this time can decimate a sector of Virginia's housing industry. It's important to remember there are over 50,000 businesses typically involved in the acquisition and construction of new homes. I strongly encourage you to resist any mandate that would in anyway further affect the housing industry and endanger local development. Moreover, Virginia was ranked as the best state in the nation to do business with. The Commonwealth's weakest performance is in the cost of living and for consumers costs of housing. We're doing everything we can to make Virginia more competitive in respect to the cost of living and cost of doing business and other factors that would affect business. Please do not mandate this requirement and effect homeowners.

MR. CALHOUN: David Seay.

MR. SEAY: I'm David Seay the Henrico County Fire Marshal and a member of the Virginia Fire Prevention Association Fire Services. Some people believe that the reduction in fire fatalities in the United States is due to

better building codes. Where better codes have contributed to this reduction is not the only reason we have seen the number of fire fatalities in the United States reduced by over 50 percent in the last 20 years. The information on smoke detectors in new and existing homes has been one effective tool. Fire safety and prevention and education to the public plays a major role in this reduction. With the increase in fire service capabilities and emergency medical services and critical care facilities and the ability to care for the number of burn injury patients has to also be considered. Even with the improvements in building codes, occupants still continue to die even in newer homes that were subject to the new and improved code. It is important to know that even with such a dramatic decrease in civilian fire fatalities, the number of injuries has not decreased by the same percent nor has the number of fire fighter fatality injuries. This would again support the idea that codes have not had as much to do with the overall number in intensity of fires in the United States. Additionally, residents with smoke detectors are passive fire protection devices. Their purpose is to alert building occupants of fires while they're small enough to combat or to exit for safety. Residential smoke detectors do nothing to aid in terms of distinguishing a fire. If the building is

unoccupied, the fire will continue to grow until it is noticed by someone from the outside. Smoke detectors alone do nothing to protect those that are unable to escape by themselves. The very young, the elderly, the mentally or physically impaired have a decreased chance of survival without some form of active fire protection or rescue. Firefighters must still respond to and extinguish fires that are merely detected by the smoke detector. Fire sprinklers decrease the size of the fire or have a positive reduction in the cost of extinguishing the fire. The cost is not always calculated in the direct cost. While additional units may be requested for fires in non-sprinkler buildings, the same units could remain in service to cover other emergencies if the building had been equipped with automatic sprinklers. The reduction in service demands will equate to a decrease service delivery cost to the locality and ultimately to the taxpayer. The very same options that apply in homes today. Like the old saying goes, it takes a community to raise a child. The protection of life and property is the responsibility of everyone including building officials, contractors, fire officials, fire emergency responders and to you to develop and adopt appropriate codes.

MR. FLUERY: Can you wrap it up please?

MR. SEAY: Yes, sir. The code process has

National Association of Home Builders
Recommended State & Local Amendments to the
2009 International Residential Code (IRC)

Issue: Automatic Fire Sprinkler System

2009 IRC Section R313

Recommended Amendment
Delete the Section in its entirety as shown below:

~~**R313 AUTOMATIC FIRE SPRINKLER SYSTEMS**~~
~~**R313.1 Townhouse automatic fire sprinkler systems.** An automatic residential fire sprinkler system shall be installed in townhouses.~~

~~**Exception:** An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.~~

~~**R313.1.1 Design and installation.** Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section P2904.~~

~~**R313.2 One- and two-family dwellings automatic fire sprinkler systems.** Effective January 1, 2011, an automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.~~

~~**Exception:** An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential fire sprinkler system.~~

~~**R313.2.1 Design and Installation.** Automatic residential fire sprinkler systems shall be installed in accordance with Section P2904 or NFPA 13D.~~

Reason:
The purpose of this amendment is to delete the reference of the mandatory requirement of residential sprinkler systems in all one- and two- family dwellings and townhouses. This change will provide the homeowner with the continued ability to choose whether or not a residential fire sprinkler system is appropriate for their situation.

NAHB strongly disagrees with the fire services perception of America's fire problem and the proposed solution to reduce the number of fire fatalities that occur each year. In 1977, less than 0.008% of the housing market was affected by structure fires. In 2005, that number was reduced to less than 0.002%. Over the past three decades, there has a substantial decrease in the number of residential structure fires in relation to the growth

of American housing. No one can predict when or where a fire will occur, but to require every home to be equipped with a residential sprinkler system based on the figures below is not cost-effective.

Consideration as to whether the requirement for fire sprinklers in dwellings be mandatory should remain a local issue. The sole purpose of an Appendix P in the 2006 International Code was to provide local jurisdictions with the means to adopt a code or standard that is applicable to their community. Not every jurisdiction agrees that radon resistant construction, patio coverings, and safety inspections of existing appliances need to be regulated or inspected in their jurisdiction. Contrary to the belief of some activists, several jurisdictions have decided that Appendix P (the provisions for residential sprinkler systems) is not applicable to their state or local jurisdictions. Of the 47 states that have adopted the International Residential Code, none have adopted the 2006 IRC with the inclusion of Appendix P. During the adoption prose in six states, there was a proposal put forth to include appendix P in the formal adoption of the 2006 IRC and the proposal was voted down every time.

According to the U.S. fire administration more than half states in America are below the national fire death rate of 13.6 per million and over the past ten years the number of one- and two- family dwelling fires, deaths and injuries have fallen (6%, 18% and 26% respectively).

While the fire service and sprinkler advocates acknowledge that the median age of a home is 32 years, the connection between fire deaths and the age of the home is elusive. For several years data has been collected for several relevant facts about fires. The cause of the fire, whether smoke alarms were present and were working, type of smoke alarm present, whether the fire was confined and did not activate the sprinkler system.

While there have been no studies conducted to investigate whether fire fatalities are less likely to occur in newer homes, there is supporting evidence of this in reports issued by NFPA regarding the performance of smoke alarms. According to these reports, there is a significant difference in the number of fatalities and the number of fires when the smoke alarm present. This includes information regarding smoke alarms that were either battery operated, hardwired with battery backup or hardwired. According to April 2007 Report "U.S. Experience with Smoke Alarms and other Fire Detection/Alarm Equipment" by Marty Ahrens, 65% of the reported residential home fire deaths occurred in homes where there was no smoke alarm present (43%) or did not operate (22%). Of the 35% fire fatalities that occurred when a smoke alarm was present and operated, it was reported that two-thirds of the non-confined home structure fires occurred in dwellings with battery operated smoke alarms with the remaining third evenly divided between homes with hardwired and hardwired with battery backup.

Source	Code Cycle Required	# of Fires	# of Fatalities	# of Injuries	Property Damage in Millions
Battery only	Before 1982	88,300	1,230	5,850	$2,353
Hardwired Only	1982-1992	19,900	170	1,300	$743
Hardwire/Battery	1992- Present	18,000	210	1,490	$568

Reference: April 2007 Report "U.S. Experience with Smoke Alarms and other Fire Detection/Alarm Equipment" by Marty Ahrens

From this information we can see that as the requirements for smoke alarms changed, as well as other requirements over the years, that the newer stock has had fewer fires and fewer fire fatalities. Along with improvements to the power source, the *National Fire Code* has also increased the number of required smoke alarms in a one- and two- family dwelling over the years. In 1992 it required that all smoke alarms be interconnected.

When you consider the advances made in the requirements of smoke alarms and look at the results in reducing the number of fire fatalities, the solution is educating the public about the importance of working smoke alarms and practicing proper fire prevention.

The most cost-effective means of reducing the loss life is through increasing the public's awareness on the use and maintenance of smoke alarms. According to NFPA reports an estimated 890 live could be saved annually if home were equipped with working smoke alarms. 65% of the reported fire fatalities from 2000-2004 occurred in homes were smoke alarms were either not present or were present but failed to operate. CPSC surveys have shown that while 88% of the households screened had at least one smoke alarm, 72% of these smoke alarms were battery powered only.

Staff Contact: Steve Orlowski - sorlowski@nahb.com 1-800-368-5242, ext. 8303

5

National Association of Home Builders Recommended State & Local Amendments to the 2009 International Residential Code (IRC)

Issue: Automatic Fire Sprinkler System

2009 IRC Section R313

Recommended Amendment
Delete the Section in its entirety as shown below:

~~R313 AUTOMATIC FIRE SPRINKLER SYSTEMS~~
~~R313.1 Townhouse automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in townhouses.~~

~~Exception: An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.~~

~~R313.1.1 Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section P2904.~~

~~R313.2 One and two family dwellings automatic fire sprinkler systems. Effective January 1, 2011, an automatic residential fire sprinkler system shall be installed in one and two family dwellings.~~

~~Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential fire sprinkler system.~~

~~R313.2.1 Design and Installation. Automatic residential fire sprinkler systems shall be installed in accordance with Section P2904 or NFPA 13D.~~

Reason:
NAHB strongly disagrees with the fire services perception of America's fire problem and the proposed solution to reduce the number of fire fatalities that occur each year. In 1977, less than 0.008% of the housing market was affected by structure fires. In 2005, that number was reduced to less than 0.002%. Over the past three decades, there has a substantial decrease in the number of residential structure fires in relation to the growth of American housing. No one can predict when or where a fire will occur, but to require all homes to be equipped with a residential sprinkler system based on the figures above doesn't make sense.

1. Should the requirement for fire sprinklers in dwellings be a local issue? The sole

HOME BUILDING ASSOCIATION OF RICHMOND

www.hbar.org

July 14, 2009

Virginia Board of Housing and Community Development
Main Street Centre
600 E. Main St., Suite 300
Richmond, VA 23219

Dear Board Members:

Soon you will consider whether to mandate installation of fire sprinklers in all new one and two-family dwellings in Virginia. The Home Building Association of Richmond urges you in the strongest possible terms to **vote against this mandate.**

There are many reasons we ask you to do this. HBAR has developed a fact sheet of "10 Reasons Why Mandating Fire Sprinklers Makes No Sense For Virginia," which is included with this letter. In the fact sheet you will read, among other things, that

1) The death rate from fires in homes declined by 58 percent from 1979-2003 because of better building code standards. Those standards continue to improve today.
2) A 2008 study by the National Fire Prevention Association shows that a person's chances of surviving a fire in a home without fire sprinklers but with working smoke alarms is more than 99 percent.
3) Sprinklers in homes in rural areas can cost double what they cost in urban areas.

Perhaps the most important thing the Board should consider is how unethically this proposal came before you. Last September the fire sprinkler industry paid for airfare and hotel rooms for more than 900 firefighters to fly to Minneapolis, home of the 2009 International Code Council (ICC) meetings, from across the country and vote specifically on this proposal. It is documented that the firefighters arrived Saturday, voted Sunday morning, and left immediately after the vote.

Why did the fire sprinkler industry resort to these unethical tactics to get this mandate from the ICC? In 2005 (the last year records are available), the fire sprinkler industry did sales of about $185 million. In 2008, with 895,000 homes being sold in that year – the lowest amount since at least 1990 – the industry would have done sales of almost $6 billion with this mandate in place.

Thank you for reading our material and considering our views.

Sincerely,

C. Warren Wakeland
Director of Government Affairs
Home Building Association of Richmond

Good morning. I am Warren Wakeland with the Home Building Association of Richmond. We're here today to urge the Board to reject the mandate from the International Code Commission concerning fire sprinklers for one and two-family dwellings.

Our association has already provided you with written comments on this matter, along with 10 reasons full of statistical data that prove why this is not necessary. The bottom line here is that all the data available shows it is not necessary or feasible to require every new home to have a sprinkler system.

Homes today are built better than ever and do not need fire sprinklers. Building code changes implemented since 1979 have caused a 58 percent decrease in the death rate per million persons from house fire, according to the US Centers for Disease Control and Prevention. New homes today have never been more safe, from fires or other potential hazards.

Most sprinkler systems never get the chance to extinguish fires or save lives. According to the National Fire Prevention Association, the number of fires that occur in one and two-family dwellings equipped with fire sprinklers is so small that they aren't even shown in their own studies. A January 2008 study by the same organization shows the survival rate of people in home fires is 99.45 percent where no sprinklers are present, but smoke alarms are.

Smoke alarms potentially save more lives than fire sprinklers. A 2006 study by the U.S. Fire Association showed that from 2001-2004, 88 percent of home fires that produced fatalities occurred in homes without working smoke alarms. The most recent NFPA study on smoke alarms shows that 890 lives could be saved each year if every home had working smoke alarms. The January 2008 NFPA study states, "Because there is evidence that working smoke alarms act so early that they convert what would have been a reported fire into a very small, unreported fire, the potential savings from universal working smoke alarms could be even larger."

While safety is the most important reason to consider in this issue, there are other variables that must also be taken into account. The cost of fire sprinklers in this economy and in relation to the additional protection they may or may not provide versus smoke alarms is a big factor for homebuyers.

An August 2006 survey of more than 2,500 builders nationwide done by the National Association of Home Builders Research Center showed that the average sprinkler system in a new home cost $2.66 per square foot to install. By this figure, a system would cost more than $5,800 in the average-sized new home built in 2008. That's for installation. What about maintenance? How much extra would a yearly maintenance contract cost for the system? If the homeowner refused to purchase the contract, could they maintain the system themselves? More important, would they? How many people change

the batteries in their smoke alarms every six months? Now imagine all the maintenance that goes with a sprinkler system.

On the other hand, a hard-wired, interconnected smoke alarm system in a home, run by the home's electrical system, costs about $50 per alarm. The only maintenance is changing the backup batteries.

What about affordable housing. An 1,800-square-foot, single-family detached home will cost about $215,000 in the Richmond area without sprinklers. A fully-installed sprinkler system for that home will cost about $4,800, driving the home's cost to almost $220,000. That doesn't sound like much, but consider that for every $1,000 in additional cost to a new home in this area more than 700 families are driven out of the market for that home. A sprinkler mandate would mean a lot of people won't be able to buy a new home. It means they are forced to have something in their home that the huge majority of them will never use.

Our association has no problem with this Board deciding that sprinklers should be an option a homebuyer may choose to have installed. Homebuyers should always have as much choice as possible as to what goes into their home. But the government should not require something in a home that has not been proven to save more lives or more property than a less costly, just as effective alternative. HBAR urges you to reject the mandate on fire sprinklers in all new one and two-family dwellings.

May 18, 2009

Virginia Board of Housing and Community Development
The Jackson Center
501 N. Second Street
Richmond, VA 23219

Re: Fire Sprinklers

Members of the Board:

I am writing today to urge you to NOT to mandate installation of fire sprinklers in Virginia. Codes that have mandated hardwired smoke alarms, improved electrical systems and tighter envelope construction have worked to dramatically reduce fire related injuries and deaths in newer construction. In fact, From 1979-2003 the death rate per million persons from house fires dropped 58 percent, according to the U.S. Centers for Disease Control. That trend will continue as more new housing stock is built, stronger building codes are enacted and especially as smoke alarm maintenance by homeowners improves.

Smoke alarms, not fire sprinklers, are the most effective and cost efficient method of protecting Virginia's families in their homes from the threat of fire. A 2006 study by the U.S. Fire Association (USFA) on the presence of working smoke alarms in 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. USFA and NFPA data continue to show that the vast majority of home fire fatalities occur when there are no operational smoke alarms. The most recent NFPA report on smoke alarms estimates that more than 890 lives could be saved annually if every home had a working smoke alarm. From 2000-2004, 65 percent of the fire fatalities reported occurred in homes where smoke alarms were not present or were present and did not operate.

The mandated use of fire sprinklers in new construction will make new homes even more expensive, and will drive families to purchase and live in older structures that do not have the current requirements for new construction, such as modern smoke detectors.

Sincerely,

Kevin M. McNulty
1300 Woodhugh Place
Colonial Heights, VA 23834

of time you're out of your house and consisting of repairs and having it rebuilt. People that have the sprinkler system if they're put out of their house by fire, they'll certainly be back in sooner than they would be without it. I'll stop there, thank you.

MR. CALHOUN: Kevin McNulty.

MR. MCNULTY: My name is Kevin McNulty and I'm Vice President of the Home Building Association of Richmond. I'm concerned about the proposal to add fire sprinklers. I do not believe that adding this equipment to your home, will make people significantly safer. Statistics can and have been presented which will show today's new houses are better built and produce fewer fire deaths than our nations older housing stock. This proposal will make new homes more expensive and place Virginia families into older homes which do not meet today's fire standards. Why not use our resources to address the real problem which is the lack of updated smoke detectors and have them in every bedroom of every home. Most statistics show 88 percent of fires in single family homes occur where there's no working smoke alarm. A recent report about smoke alarms estimates that 1 in 890 lives could be save annually if everyone had a working smoke alarm. From 2000 to 2004, 65 percent of the fire fatalities were reported in homes where smoke alarms were not

present or did not operate property. The cost does not outweigh the benefits. We can have a much greater impact for safety by using our resources to promote and educate the public on the maintenance of working smoke detectors. I urge you to make fire sprinkler systems an option in new home construction.

MR. CALHOUN: Warren Wakeland.

MR. WAKELAND: Good morning, I'm Warren Wakeland with the Home Building Association of Richmond with its 500 members. Much of what has been said is included in my written comments. I won't go into that specifically. There's a couple of details that I'd like to mention. The National Fire Prevention Association in January, 2008 showed that the survival rate of people of home fires is 99.45 percent where no sprinklers are present, but smoke alarms are. The same 2008 study stated and I'll quote, "Because there is evidence that working smoke alarms acts so early that they convert what would have been a reported fire into a very small, unreported fire, the potential savings from universal working smoke alarms could be even larger." Safety is a big issue on this subject but the cost is also a big issue for homebuyers. An August 2006 study of more than 2,500 homebuilders nationwide and the association of homebuilders research center showed that the average

sprinkler system in a new home cost $2.66 per square foot to install against almost $5,800 in the average size new home built in 2008. That's for installation. Maintenance is going to cost a little more. On the other hand, a hard-wired, interconnected smoke alarm system in a home, run by the home's electrical system, cost about $50 per alarm. The only maintenance you're going to find is changing the backup batteries. It's been mentioned that getting people to change the batteries is a tough thing. That's where education comes in and something this Board should look at, educating more people about changing the batteries while maintaining their system. When you talk about affordable housing, an 1800 square foot, single family detached home will cost about $215,000 in the Richmond area without sprinklers. A fully installed sprinkler system in that home will cost about $4,800 by today's terms, not in 1992. That will drive the cost almost to $220,000. A $5,000 increase doesn't sound like much to some people but it's a lot to consider because of every thousand dollars an additional cost to a new home in this area, you put more than 700 families out of the market for that home. A sprinkler mandate would mean a lot of people won't be able to buy a new home. We've heard that many older homes are not built as safely as today's homes. Our association has no

problem with this Board deciding that a sprinkler should be an option a homebuyer may chose to have installed. Homebuyers should always have as much choice as possible as to what goes into their home. The government should not require something in a home that has not been proven to save more lives and more property than a less costly, just as effective alternative and will not be used by a great majority of the homes in which they're installed. The Home Builders Association of Richmond would urge you to follow the recommendation of your Code and Standards Committee and make sprinklers an option for homeowners. Thank you.

MR. CALHOUN: Ray Pylant.

MR. PYLANT: I'm Ray Pylant, a building official for Fairfax County. I'm here to talk about a couple of ambiguities in Section 103.5 of the building code. Strangely this section talks about the, it doesn't say the code applies for new construction. The current code talks in the negative. It says the portions not being constructed, altered or repaired does not have to meet standards of new construction. Another portion of the section and it says that the materials may be replaced with material or equivalent with similar capacity. This refers to repairs that makes sense. If you have a rotten board, particularly in the back of your house, you can

leave you with a full copy of my remarks. One supporting statement in the Homebuilders Association of Virginia code change proposal found on page 212 of the codes and standards committee packet. The one sentence that does not use qualifying words like maybe and seems to, the one sentence that doesn't ask a question but rather makes a statement regarding residential sprinklers. The NFPA data and reports confirm that sprinklers do reduce deaths, injuries and property damage losses. Mr. Chairman, I believe they have that supporting statement right. It is the code change they have gotten wrong. Thank you for your time.

MR. CALHOUN: Mark Viani.

MR. VIANI: Mr. Chairman and members of the Board, I'm Mark Viani. I'm with the Northern Virginia Builders Association. A lot of what I was going to say has already been said. I'll try to keep my comments brief. I urge the Board not to make the fire sprinklers mandatory and leave it as an option. From my own personal experience, I have purchased two homes in Virginia in the last 10 years. Both of my purchases were not expensive homes. In both cases, we have done everything we could do to buy a house. Some didn't have an option. Where we had the option, we would ask about safety features. The townhouses we had internet and those systems work.

From a practical experience point of view, the smoke detectors were great. Two hundred town homes had sprinkler systems and I'm sure they worked when their needed but our experience with them wasn't too good. We had a Christmas tree fire and that wasn't too good. We had sprinkler head problems. There are some practical rules that can be more effective. I heard a question about education. These things are good and they're effective and probably the best way to do it. Finding out and getting information on prior history and why they would work well. By contrast, the house I live in now is built in 1959 and has no sprinkler system but does have a smoke alarm. The smoke alarm went off Christmas Eve and we got it put out. It's all about choice. I think a choice should be available. I think this should be a choice. I know people have talked about the cost benefit ratio and the free market. I would ask you to support this.

MR. CALHOUN: Sean Horne.

MR. HORNE: Good morning, my name is Sean Horne here representing the Roanoke Regional Homebuilders Association. We represent a membership of nearly 400 local members and firms to come here and share with you our concern about the significance and the negative impact of mandated fire sprinklers. To cut it short, I understand that you have received all of the

RB66-07/08

R101.2, R301.1.3.1 (New), R313 (New), R317.2, R317.2.4, R310.1, AP102 (New), Chapter 43 (New)

Proposed Change as Submitted:

Proponent: Rick Morris, AvalonBay Communities, Inc.

1. Revise as follows:

R101.2 (Supp) Scope. The provisions of the *International Residential Code for One- and Two-family Dwellings* shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above-grade in height with a separate means of egress and their accessory structures.

The provisions of this Code shall also apply to the construction, alteration, enlargement and replacement of townhouses not more than 4 stories above grade plane that are equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

Exception: Live/work units complying with the requirements of Section 419 of the *International Building Code* shall be permitted to be built as one- and two-family dwellings or townhouses. Fire suppression required by Section 419.5 of the *International Building Code* when constructed under the *International Residential Code for One- and Two-family Dwellings* shall conform to Section 903.3.1.3 of the *International Building Code*.

2. Add new text as follows:

R301.1.3 Engineered design. When a building of otherwise conventional construction contains structural elements exceeding the limits of Section R301 or otherwise not conforming to this code, these elements shall be designed in accordance with accepted engineering practice. The extent of such design need only demonstrate compliance of nonconventional elements with other applicable provisions and shall be compatible with the performance of the conventional framed system. Engineered design in accordance with the International Building Code is permitted for all buildings and structures, and parts thereof, included in the scope of this code.

R301.1.3.1 Townhouses four stories above grade plane. For structural design of townhouses four stories above grade plane, the structural provisions of the *International Building Code* for Group R-3 shall apply

3. Rename section and add new R313.1 as follows:

R313
FIRE PROTECTION SYSTEMS AND SMOKE ALARMS

R313.1 Fire protection systems. An approved automatic fire sprinkler system shall be installed in new townhouses in accordance with NFPA 13D, except as follows:

1. Where townhouses have separation walls designed based on R317.2, Exception 2, sprinklers shall be provided to protect exterior combustible balconies, decks, porches and ground floor patios located under such combustible projections. Exterior sprinklers and supply piping shall be protected from freezing where freeze protection is required by P2603.6. Where sidewall sprinklers are installed beneath exposed wood joists, sprinklers shall be permitted to be installed with deflectors located 1 inch (25 mm) to 6 inches (152 mm) below the joists, not to exceed a maximum distance of 14 inches (356 mm) below the deck.
2. Where townhouses with private garages have separation walls designed based on R317.2, Exception 2, fire sprinkler protection shall be provided in the garage. Sprinklers in garages shall be connected to a system that complies with NFPA 13D. Garage sprinklers shall be residential sprinklers or quick-response sprinklers, designed to provide a density of 0.05 gpm/ft^2. Garage doors shall not be considered as obstructions with respect to sprinkler placement.

(Renumber subsequent sections)

4. Revise as follows:

R317.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302 for exterior walls.

Exceptions:

1. A common 2-hour fire-resistance-rated wall is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. Electrical installations shall be installed in accordance with Chapters 33 through 42. Penetrations of electrical outlet boxes shall be in accordance with Section R317.3.
2. A common 1-hour fire-resistance rated wall is permitted for townhouses equipped throughout with an automatic sprinkler system installed in accordance with R313.1. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Where roof surfaces adjacent to the wall are at different elevations, the rated wall shall continue to the upper roof sheathing.

5. Revise as follows:

R317.2.4 Structural independence. Each individual townhouse shall be structurally independent.

Exceptions:

1. Foundations supporting exterior walls or common walls.
2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
3. Nonstructural wall coverings.
4. Flashing at termination of roof covering over common wall.
5. Townhouses separated by a common ~~2-hour~~ fire-resistance-rated wall as provided in Section R317.2.

6. Revise as follows:

R310.1 (Supp) Emergency escape and rescue required. Basements and every sleeping room shall have at least one operable emergency escape and rescue opening. Such opening shall open directly into a public street, public alley, yard or court. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

1. Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m2).
2. In dwelling units equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

7. Add new text as follows:

AP102 Fire flow. The fire-flow requirements for townhouses specified by IFC Appendix B, where adopted, shall be permitted to be reduced by 75% for buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

Reason: This proposal would add a requirement for residential sprinkler systems to be installed in all new townhouses constructed under the *International Residential Code*, and it includes a package of sprinkler incentives that will help offset the added cost of sprinklers, as well as improve design flexibility. If a reasonable package of incentives can be offered by the code, it simply makes sense for multifamily developers to provide these systems to protect new townhouses.

It is well known that sprinklers are the best tool for providing firesafety in residential occupancies, and the concept of the code providing incentives to encourage the use of these systems in residential occupancies is already in use in the IBC. In fact, the IBC's incentive package provided a basis for major multifamily builders to not oppose the IBC requirement for all residential occupancies to be sprinklered when that issue was considered several years ago.

By accepting this code change, sprinkler protection for townhouses would become reasonably affordable to the builders who build townhouses and to the homeowners who buy them. As a result, we could take a significant step forward in improving life safety and reducing property losses in residential occupancies for decades to come.

The following is an explanation of each new proposed section relating to this sprinkler alternative for dwellings:

1. *Revise Section R101.2:* Typical townhouse construction is no more than 4 stories above grade plane. Presently when a developer goes from 3 to 4 stories above grade, the project is then required to be designed under the IBC. Covering townhouses up to 4 stories above grade plane in the IRC provides a significant incentive for developers. The impact on 4-story buildings would be significant enough to warrant installing sprinklers in 2- and 3-story buildings, which will gain far less benefit from this change, when one considers the overall package. The overall gain of having all townhouses equipped with fire sprinklers makes the allowance of 4-story townhouses under the IRC a worthwhile investment in safety.
2. *Add new Subsection R301.1.3.1 to the "Engineered design" requirement.* This new subsection will address the structural design requirements for townhouses built under the IRC that are 4 stories above grade. The existing structural requirements in the IRC are based on a maximum 3 stories above grade, and by referencing the IBC, proper design is assured.
3. *Rename Section R313 and add new Section R313.1:* This provides a charging requirement for providing residential sprinklers in accordance with NFPA 13D for townhouses. The two exceptions deal with issues not addressed by NFPA 13D, one is outside combustible decks and the other is private garages. The combustible deck sprinkler requirement is consistent with a similar provision to IBC Section 903.3.1.2.1, "Balconies and decks". Most likely a dry sidewall sprinkler supplied by a wet pipe sprinkler system would be used to comply with this exception. The garage sprinkler criteria are based on NFPA 13R Section 6.8.3.3. Dry pendent sprinklers supplied by a wet pipe sprinkler system would most likely be used to protect garages.

4. & 5. *Add new Exception#2 to R 317.2 and revise Exception #5 to R317.2.4:* This is a similar one hour exception that was in BOCA Code Section 310.5 Exception #2 for multiple single-family dwellings. That section of Code read: "In multiple single-family dwellings that are equipped throughout with an approved automatic sprinkler system installed in accordance with Section 906.2.3 (NFPA 13D), the fire-resistance rating between each dwelling unit shall not be less than 1 hour and shall be constructed as a fire partition."

6. *Add new Exception to Section R310.1:* The IRC already allows elimination of escape windows in Groups R-1, R-2, R-4 and I-1 occupancies (IBC Section 1026, Exception 1) based on the installation of fire sprinklers. NFPA Life Safety Code, also contains an NFPA 13D related exception to the escape window requirement for one- and two-family dwellings in Section 24.2.2.1.2(2).
7. *Revise Appendix P101:* The reduction in fire flow is similar to allowances granted by the IFC.

Cost Impact: The code change proposal may increase or decrease the cost of construction, depending on the value of sprinkler incentives versus the cost of adding sprinklers to a particular building.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action: **Disapproved**

Committee Reason: The committee felt that there was insufficient effective or substantial reason to move the sprinkler requirements out of Appendix P where it is now. The committee agreed that if the code is going to mandate sprinklers for new construction that is should apply to all structures in the scope of the International Residential Code not just townhouses in a piecemeal approach. The issues of fire flow and not wanting a direct reference to the International Fire Code were also issues in the committee's decision.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

George Martin, Howard County, Department of Licenses & Permits, representing Maryland Building Officials Association (MBOA), requests Approval as Modified by this Public Comment.

Steven L. McDaniel, CPCA, New York State Building Officials Conference, requests Approval as Modified by this Public Comment.

Rick Morris, AvalonBay Communities, Inc., requests Approval as Modified by this Public Comment.

Replace proposal as follows:

1. Add new section as follows:

R313
FIRE SPRINKLER SYSTEM FOR TOWNHOUSES

R313.1 Townhouse Fire Sprinklers. An automatic residential fire sprinkler system shall be installed in townhouses.

Exception: A sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have a fire sprinkler system installed.

R312.2 Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with P2904.

(Renumber subsequent sections)

2. Modify AP101 as follows:

AP101 Fire sprinklers. An approved automatic fire sprinkler system shall be installed in new one-and two-family dwellings ~~and townhouses~~ in accordance with P2904 ~~NFPA 13D~~.

3. Modify exception as follows:

R317.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302 for exterior walls.

Exception: A common ~~2~~ 1-hour fire-resistance rated wall is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Chapters 33 through 42. Penetrations ~~of electrical outlet boxes~~ shall be in accordance with Section R317.3.

4. Modify exception 5 as follows:

R317.2.4 Structural independence. Each individual townhouse shall be structurally independent.

Exceptions:

1. Foundations supporting exterior walls or common walls.
2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
3. Nonstructural wall coverings.
4. Flashing at termination of roof covering over common wall.
5. Townhouses separated by a common ~~2~~ 1-hour fire-resistance-rated wall as provided in Section R317.2.

Commenter's Reason (Martin): In 1989 the State of Maryland enacted House Bill 658, "Sprinkler Systems – Installation in New Construction", that required dormitories, hotels, lodging or rooming houses, multifamily residential dwellings **and townhouses** to be sprinklered. Therefore, since 1990, townhouses in Maryland have been sprinklered and being so has not been detrimental to the homebuilding industry, but has been a major success to saving lives over the past 18 years.

To address reasonable fire protection and affordable housing, many Maryland jurisdictions over the years have permitted townhouse separation of one hour with sprinklers installed in accordance with NFPA 13D. Therefore, based on our past success with sprinklered townhouses with one hour separations between the townhouses, MBOA is in support of mandatory sprinklers in townhouses with one hour dwelling unit separations.

The modifications in Items #1 & #2 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (McDaniel): Our Building Officials Association believes that fair and reasonable sprinkler package should be provided in the IRC to encourage the installation of residential sprinkler systems in townhouse in the IRC. This public comment provides a good beginning with a sprinkler alternative that we believe meet these criteria.

To address reasonable fire protection and affordable housing, many other jurisdictions throughout the country over the years have permitted townhouse separation of one hour with sprinklers installed in accordance with NFPA 13D. Therefore, based on these past successes with sprinklered townhouses with one hour separations between the townhouses, our building officials association is in support of mandatory sprinklers in townhouses with one hour dwelling unit separations.

The modifications in Items #1 & #2 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (Morris) AvalonBay originally submitted RB66-07/08 because we believe that a fair and reasonable sprinkler package should be provided in the IRC to encourage the installation of residential sprinkler systems in townhouses in the IRC. Contrary to the Committee's published reason for disapproval of RB66, there are numerous state and local building code amendments to the IRC throughout the U.S. where townhouses are require to be sprinklered, whereas detached single family homes are not, because it is considered the "first step" in eventually getting all residential uses sprinklered. In fact, even though the committee also disapproved RB65 for the same reason as this code proposal (RB66), there was an assembly vote on RB65 and it passed, over the disapproval of the committee. Therefore, clearly the ICC membership does see merit in the rationale for mandatory sprinkling of townhouses.

This public comment simplifies the original RB66. It provides a good beginning for a townhouse sprinkler requirement that AvalonBay believes would meet code officials' and townhouse builders/developers' criteria as fair, reasonable and economical.

To address reasonable fire protection and affordable housing, many other jurisdictions throughout the country over the years have permitted townhouse separation of one hour with sprinklers installed in accordance with NFPA 13D. Therefore, based on these past successes with sprinklered townhouses with one hour separations between the townhouses, AvalonBay is in support of mandatory sprinklers in townhouses with one hour dwelling unit separations.

The modifications in Items #1 and #2 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Final Action: AS AM AMPC___ D

RB67-07/08

R302.1, Table R302.1, Table R302.1(2) (New), R317.2, R317.2.4, R317.2.5 (New), R309.7 (New), R313.2, R310.1, AP102 (New)

Proposed Change as Submitted:

Proponent: Tom Lariviere, Fire Department, Madison, MS, representing Fire & Life Safety Section of the International Association of Fire Chiefs (IAFC)

1. Revise as follows:

R302.1 (Supp) Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1(1); or for dwellings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D and Table R302.1(2).

Exceptions:

1. Walls, projections, openings, or penetrations in walls perpendicular to the line used to determine the fire separation distance.
2. Walls of dwellings and accessory structures located on the same lot.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
4. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.

TABLE R302.1(1) (Supp)
EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	1 hour with exposure from both sides	0 feet
	(Not fire-resistance rated)	0 hours	5 feet
Projections	(Fire-resistance rated)	1 hour on the underside	2 feet
	(Not fire-resistance rated)	0	5 feet
Openings	Not allowed	N/A	< 3 feet
	25 % Maximum of Wall Area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R317.3	< 5 feet
		None required	5 feet

N/A = Not Applicable

TABLE R302.1(2)
EXTERIOR WALLS – DWELLINGS WITH FIRE SPRINKLERS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	1 hour with exposure to the fire from the outside	0 feet
	(Not fire-resistance rated)	0 hours	3 feet[1]
Projections	Fire-resistance rated	1 hour on the underside	2 feet[1]
	(Not fire-resistance rated)	0	3 feet
Openings	Not allowed	N/A	< 3 feet
	Unlimited	0	3 feet[1]
Penetrations	All	Comply with Section R317.3	< 3 feet
		None required	3 feet[1]

1. For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler systems installed in accordance with NFPA 13D, as amended by R309.7, the fire separation distance for non-rated exterior walls and rated projections shall be permitted to be reduced to zero feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

2. Revise as follows:

R317.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302 for exterior walls.

Exceptions:

1. A common 2-hour fire-resistance-rated wall is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. Electrical installations shall be installed in accordance with Chapters 33 through 42. Penetrations of electrical outlet boxes shall be in accordance with Section R317.3.
2. A common 1-hour fire-resistance-rated wall is permitted for townhouses equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D, as amended by R309.7 and R317.2.5, up to an aggregate floor area of 28,000 square feet per building. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Where roof surfaces adjacent to the wall are at different elevations, the rated wall shall continue to the upper roof sheathing.

R317.2.4 Structural independence. Each individual townhouse shall be structurally independent.

Exceptions:

1. Foundations supporting exterior walls or common walls.
2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
3. Nonstructural wall coverings.
4. Flashing at termination of roof covering over common wall.
5. Townhouses separated by a common ~~2-hour~~ fire-resistance-rated wall as provided in Section R317.2.

3. Add new text as follows:

R317.2.5 Fire sprinklers for balconies, decks, porches and ground floor patios. Where townhouses have separation walls designed based on R317.2, Exception 2, sprinklers shall be provided to protect exterior combustible balconies, decks, porches and ground floor patios located under such combustible projections. Exterior sprinklers and supply piping shall be protected from freezing where freeze protection is required by P2603.6. Where sidewall sprinklers are installed beneath exposed wood joists, sprinklers shall be permitted to be installed with deflectors located 1 inch (25 mm) to 6 inches (152 mm) below the joists, not to exceed a maximum distance of 14 inches (356 mm) below the deck.

4. Add new text as follows:

R309.7 Fire Sprinklers. Private garages shall be protected by fire sprinklers, where:

1. The garage is in a townhouse having separation walls designed based on R317.2, Exception 2.
2. A garage wall has been designed based on Table R302.1(b), Footnote 1.

Sprinklers in garages shall be connected to a system that complies with NFPA 13D. Garage sprinklers shall be residential sprinklers or quick-response sprinklers, designed to provide a density of 0.05 gpm/ft^2. Garage doors shall not be considered obstructions with respect to sprinkler placement.

5. Revise as follows:

R313.2 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.

   Exception: In dwelling units equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

3. In a common area on each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

6. Revise as follows:

R310.1 (Supp) Emergency escape and rescue required. Basements and every sleeping room shall have at least one operable emergency escape and rescue opening. Such opening shall open directly into a public street, public alley, yard or court. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

1. Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m2).
2. In dwelling units equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

7. Add new text as follows:

AP102 Fire flow. As provided in IFC Appendix B, where adopted, the fire-flow requirements for one and two family dwellings and townhouses shall be permitted to be reduced by 50% for buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

Reason: Fire sprinklers are universally recognized as the most effective means of reducing America's fire losses and preventing firefighter deaths and injuries associated with firefighting operations. Both of these objectives are fundamental to the mission of the International Association of Fire Chiefs (IAFC). Through this proposal, the IAFC hopes to encourage more widespread use of residential sprinklers by establishing a package of sprinkler incentives in the IRC that will appeal to homebuilders and consumers.

The use of incentives to encourage the installation of fire sprinkler systems is traceable in model building codes for at least 80 years, and today, these incentives are woven into the text of nearly every ICC code. Likewise, in communities throughout the United States where residential sprinklers are required, incentives play a critical roll in developing and maintaining community support for sprinklers. Nevertheless, sprinkler incentives remain few and far between in the IRC, offering little to offset the cost of installing sprinklers or to enhance their value through building design options. Many stakeholders in the residential construction industry have made it clear that this must change before we'll see residential sprinklers in the mainstream of new home construction, and as an organization dedicated to public safety, IAFC chose to undertake the challenge of assembling a reasonable IRC incentive package to motivate the use of sprinklers. To identify incentives that would be seen by the homebuilding industry as having value, input was sought and received from the National Association of Homebuilders, and although NAHB was unable to consider endorsing this proposal prior to the code change submittal deadline, their input is reflected in the proposed text.

Overall, IAFC believes that the package of incentives contained in this proposal will significantly enhance the safety of buildings constructed in accordance with the IRC, and ultimately, we expect to see more homes protected by fire sprinklers once these revisions are published in the IRC. Although individual items in this package may be viewed by some as too liberal, while others will say that they are not liberal enough, IAFC believes that each of the suggested changes is reasonable and justifiable for a sprinklered dwelling.

The following discussion provides justifications for each of the 7 parts of this proposal.

1. ***Modify existing Section R302.1 and add a new Table R302.1(b):*** This change provides a significant financial and design incentive for residential sprinklers. From a financial perspective, the proposal permits cost reductions related to exterior wall construction and, in the case of a planned community, could result in more developable lots. From a design advantage perspective, the proposal permits homes to have larger footprints without triggering fire-rated exterior walls and permits more flexible use of windows on walls facing property lines.

   From a firesafety perspective, the proposed requirements generally put the code back where it was in 2000 and 2003, so there is essentially no concession compared to how homes have been built under the IRC since the code was first published in 2000. In 2006, the IRC's fire separation distances for non-rated exterior walls were increased from 3 feet to 5 feet for the purpose of coordinating the IRC's residential separation distances with those in the IBC (Code Change G128-03/04). History shows that residential sprinklers reliably limit fire spread to the room of origin, and with such protection, allowing the code to revert to a 3-foot separation distance provides a reasonable compensation for sprinklers. Certainly, the probability of a favorable outcome in the event of a fire is much better for a sprinklered building with a 3-foot separation versus a nonsprinklered building with a 5-foot separation, so encouraging sprinklers is a preferred approach.
2. ***Revise the exceptions to R317.2 and R317.2.4:*** Because residential sprinklers will slow fire growth and often completely extinguish a fire, the fire challenge to townhouse separation walls is expected to be significantly delayed, reduced or eliminated. Precedent for this incentive exists in Section 310.5 Exception 2 of the BOCA code, which read: "In multiple single-family dwellings that are equipped throughout with an approved automatic sprinkler system installed in accordance with Section 906.2.3 (NFPA 13D), the fire resistance rating between each dwelling unit shall not be less than 1 hour and shall be constructed as a fire partition." Clearly, the overall level of safety and best chance for a favorable outcome in the event of a fire is through the use of fire sprinklers with a 1-hour wall versus no sprinklers and a 2-hour wall.
3. ***Add a new Section R317.2.5:*** This revision provides a limitation on the incentive described in Part 2 above. Because NFPA 13D systems are being recognized to a limited degree for property protection, as well as life safety, it was considered appropriate to ask for sprinklers to protect combustible exterior projections sometimes associated with outdoor fires, typically associated with a barbecue grill on a deck. Similar requirements are established by the IBC in Section 903.3.1.2.1 for NFPA 13R systems. Often, this type of protection is provided by dry sidewall sprinklers connected to a wet pipe sprinkler system.
4. ***Add a new Section R309.7:*** This revision provides a limitation on the incentive described in Part 2 above. Because NFPA 13D systems are being recognized to a limited degree for property protection, as well as life safety, it was considered appropriate to ask for sprinklers to protect sprinklers to protect garages. Design criteria suggested for sprinklers was derived from NFPA 13R Section 6.8.3.3, which addresses sprinkler protection for garages in buildings protected by NFPA 13R sprinkler systems. Often, this type of protection is provided by dry pendent sprinklers connected to a wet pipe sprinkler system.
5. ***Revise Section R313.2:*** The value of smoke alarms with respect to life safety is well recognized. Nevertheless, code requirements associated with how many smoke alarms must be installed in a dwelling and where they must be located were developed without respect to the presence of fire sprinklers. It is widely known that the addition of fire sprinklers to a dwelling will provide a significant improvement to life safety and property protection versus having smoke alarms alone, so eliminating a minimal number of smoke alarms as part of a package to gain sprinklers is a reasonable approach.

   Contrary to what one might expect as a result of reducing the number of smoke alarms, the proposed revision could actually improve the performance of smoke alarms because it will require that a minimum of one smoke alarm be located in the common area on each floor. Currently, the code only requires smoke alarms outside of sleeping areas, often satisfied by installing a smoke alarm in the hallway outside of bedroom doors. The number of alarms will only be reduced in cases where there is more than one sleeping area on a floor.

   Given that fires often start in kitchens and living rooms, installing a smoke alarm in a more central area, as required by this proposal, may well result in more effective detection of fires in these areas. Plus, with the code still requiring smoke alarms in each bedroom, connected to common area smoke alarms, waking effectiveness and protection of bedroom areas will not be impacted by this proposal.
6. ***Add a new Exception to Section R310.1:*** This part of the proposal will, on its own, provide enough incentive to get a home sprinklered in some cases. Homebuilders and homeowners often want greater flexibility to use a variety of window types and configurations to provide required light and ventilation (it should be noted an exception to the emergency escape window requirement is unlikely to result in rooms without windows or doors because rooms will still require light and ventilation to comply with R303.1 and it seems unlikely that homeowners would choose to forgo natural light in bedrooms). For example, by allowing side-hinged windows, smaller windows or strategically positioned windows that wouldn't meet the current escape window requirements, there are potential gains in energy efficiency and wind resistance versus traditional hung windows with friction seals used to meet escape provisions.

   To those who might regard egress windows as a safety feature that should not be equated to sprinkler protection, consider that the IRC already allows elimination of escape windows in Groups R-1, R-2, R-4 and I-1 occupancies (IBC Section 1026, Exception 1) based on the installation of fire sprinklers. It simply makes no sense that sprinkler protection should be considered as providing adequate safety without escape windows in fraternities, apartments, hotels, adult care, child care and assisted living facilities, among others, but not in one- and two-family dwellings. In fact, even the NFPA Life Safety Code, a document with a pure life safety focus, provides an exception to the escape window requirement for one- and two-family dwellings [2006 NFPA 101, Section 24.2.2.1.2(2)] based on the installation of fire sprinklers in accordance with NFPA 13D. Recognizing the high level of safety that will be provided in homes that have both smoke alarms and sprinklers, providing adequate time for occupants to escape a fire using the normal means of egress, and with so much code precedent and a high incentive value, it makes sense to extend the sprinkler allowance for escape windows to include one- and two-family dwellings and townhouses.
7. ***Add a new Section AP102:*** The reduction in fire flow simply calls attention to an allowance already permitted by the IFC.

Cost Impact: The code change proposal will decrease the cost of construction.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action: **Disapproved**

Committee Reason: The committee felt that without mandatory language requiring sprinkler systems in the body of the code the trade off's offered by this code change don't belong. Further, the issues of outside wall protection and attic protection were a concern with this proposal. There was additional concern about trading off needed passive protection. Overall, he committee felt that there was insufficient effective or substantial reason to move the sprinkler requirements out of Appendix P where it is now. Keeping this in the appendix makes it available to jurisdictions that wish to take advantage of it and just because it is in the Appendix doesn't mean the provisions are hidden.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Robert F. Loeper, Jr., President, representing Region VII Chapter of ICC, requests Approval as Modified by this Public Comment.

George Martin, Howard County, Department of Licenses and Permits, representing Maryland Building Officials Association (MBOA), requests Approval as Modified by this Public Comment.

Steven L. McDaniel, CPCA, New York State Building Officials Conference, requests Approval as Modified by this Public Comment.

Rick Morris, AvalonBay Communities, Inc., requests Approval as Modified by this Public Comment.

Replace proposal as follows:

R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1(1); or for dwellings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, Table R302.1(2). These provisions shall not apply to walls, projections, openings or penetrations in walls that are perpendicular to the line used to determine the fire separation distance. Projections beyond the exterior wall shall not extend more than 12 inches (305 mm) into the areas where openings are prohibited.

Exceptions:

1. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
2. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections no exceeding 4 inches (102 mm).
3. Foundation vents installed in compliance with this code are permitted.

TABLE R302.1(1)
EXTERIOR WALLS

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	(Fire-resistance rated)	1 hour with exposure from both sides	0 feet
	(Not fire-resistance rated)	0 hours	5 feet
Projections	(Fire-resistance rated)	1 hour on the underside	2 feet
	(Not fire-resistance rated)	0	5 feet
Openings	Not allowed	N/A	< 3 feet
	25 % Maximum of Wall Area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R317.3	< 5 feet
		None required	5 feet

N/A = Not Applicable

TABLE R302.1(2)
EXTERIOR WALLS – DWELLINGS WITH FIRE SPRINKLERS

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	(Fire-resistance rated)	1 hour with exposure to the fire from the outside	0 feet
	(Not fire-resistance rated)	0 hours	3 feet[1]
Projections	Fire-resistance rated	1 hour on the underside	2 feet[1]
	(Not fire-resistance rated)	0	3 feet
Openings	Not allowed	N/A	< 3 feet
	Unlimited	0	3 feet[1]
Penetrations	All	Comply with Section R317.3	< 3 feet
		None required	3 feet[1]

1. For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler systems installed in accordance with Section P2904, the fire separation distance for non-rated exterior walls and rated projections shall be permitted to be reduced to zero feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

R310.1 Emergency escape and rescue required. Basements and every sleeping room shall have at least one operable emergency and rescue opening. Such opening shall open directly into a public street, public alley yard or court. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

1. Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m2).
2. In dwelling units equipped throughout with an automatic sprinkler system installed in accordance with Section P2904.

Commenter's Reason (Bartell/Loeper): ICC Region 7 unanimously believes that fair and reasonable sprinkler alternatives should be provided in the IRC to encourage the installation of residential sprinkler systems. This public comment provides a good beginning with these two (2) sprinkler alternatives that we believe meet these criteria.

To address reasonable fire protection and affordable housing, there have been many jurisdictions over the years that have permitted the elimination of the bedroom emergency window (which is called the "secondary means of escape" under the NFPA 101, "life Safety Code") in accordance with NFPA 101 Section 24.2.2.1.2 without any detriment to the safety of the occupants in these sprinklered dwellings. This window exception for sprinklers in one and two family dwellings has been in the Life Safety Code since the 1981 edition (over 9 editions and 27 years). In fact, in those jurisdictions that have permitted the use of this exception the great majority of bedroom designs have included the use of windows that meet the emergency window criteria and this exception has typically been used to accommodate specific design features or unusual circumstance. This truly does afford additional flexibility to the homebuilder or homeowner to utilize other types of windows and design features without the encumbrance of the minimum opening and height above the floor requirements, and, without any detriment to the safety of the occupants of these sprinklered dwellings.

In addition, the exterior wall provisions for sprinklered dwellings, is also a reasonable fire protection compensatory feature to provide and also addresses the affordable housing issue.

Additionally, the modifications in this public comment referencing Section P2904 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (Martin): In 1989 the State of Maryland enacted House Bill 658, "Sprinkler Systems – Installation in New Construction", that required dormitories, hotels, lodging or rooming houses, multifamily residential dwelling **and townhouses** to be sprinklered. Therefore, since 1990, townhouses in Maryland have been sprinklered and being so has not been detrimental to the homebuilding industry, but has been a major success to saving lives over the past 18 years.

In addition to the sprinkling of the above-noted residential occupancies by the State of Maryland, as of this year 79 out of 157 Maryland jurisdictions have mandatory sprinkling of one-and two family dwellings.

To address reasonable fire protection and affordable housing, many Maryland jurisdictions over the years have permitted the elimination of the bedroom emergency window (which is called the "secondary means of escape" under the NFPA 101, "life Safety Code") in accordance with NFPA 101 Section 24.2.2.1.2 without any detriment to the safety of the occupants in these sprinklered dwellings. This window exception for sprinklers in one and two family dwellings has been in the Life Safety Code since the 1981 edition (over 9 editions and 27 years). In fact, just because jurisdictions permit this exception does not mean in the great majority of bedroom designs that no window is provided. It only provides additional flexibility to the homebuilder or homeowner to provide other types of windows that they desire without the encumbrance of the minimum opening and height above the floor requirement.

In addition, the exterior wall provisions for sprinklered dwellings, is also a reasonable fire protection compensatory feature to provide and also addresses the affordable housing issue.

Therefore, based on our past success with sprinkling one-and two dwellings in over half the jurisdictions in Maryland over the past 18 years, MBOA is in support of this public proposal to provide further incentives to encourage sprinkling of dwellings in the IRC.

The modifications in this public comment to reference Section P2904 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (McDaniel): Our Building Officials Association believes that fair and reasonable sprinkler alternatives should be provided in the IRC to encourage the installation of residential sprinkler systems in the IRC. This public comment provides a good beginning with two (2) sprinkler alternatives that we believe meet these criteria.

APPENDIX B

FIRE-FLOW REQUIREMENTS FOR BUILDINGS

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION B101
GENERAL

B101.1 Scope. The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

SECTION B102
DEFINITIONS

B102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIRE-FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m^2), used to determine the required fire flow.

SECTION B103
MODIFICATIONS

B103.1 Decreases. The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

B103.2 Increases. The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

B103.3 Areas without water supply systems. For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the fire code official is authorized to utilize NFPA 1142 or the *International Wildland-Urban Interface Code.*

SECTION B104
FIRE-FLOW CALCULATION AREA

B104.1 General. The fire-flow calculation area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B104.2 Area separation. Portions of buildings which are separated by fire walls without openings, constructed in accordance with the *International Building Code*, are allowed to be considered as separate fire-flow calculation areas.

B104.3 Type IA and Type IB construction. The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

Exception: Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

SECTION B105
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings. The minimum fire-flow requirements for one- and two-family dwellings having a fire-flow calculation area which does not exceed 3,600 square feet (344.5 m^2) shall be 1,000 gallons per minute (3785.4 L/min). Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5 m^2) shall not be less than that specified in Table B105.1.

Exception: A reduction in required fire flow of 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system.

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.1.

Exception: A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.

SECTION B106
REFERENCED STANDARDS

ICC	IBC	International Building Code	B104.2, Table B105.1
ICC	IWUIC	International Wildland-Urban Interface Code	B103.3
NFPA	1142	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3

TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS[a]

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)[c]	FLOW DURATION (hours)
Type IA and IB[b]	Type IIA and IIIA[b]	Type IV and V-A[b]	Type IIB and IIIB[b]	Type V-B[b]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m^2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. The minimum required fire flow shall be allowed to be reduced by 25 percent for Group R.

b. Types of construction are based on the *International Building Code*.

c. Measured at 20 psi.

APPENDIX C
FIRE HYDRANT LOCATIONS AND DISTRIBUTION

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION C101
GENERAL

C101.1 Scope. Fire hydrants shall be provided in accordance with this appendix for the protection of buildings, or portions of buildings, hereafter constructed.

SECTION C102
LOCATION

C102.1 Fire hydrant locations. Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets.

SECTION C103
NUMBER OF FIRE HYDRANTS

C103.1 Fire hydrants available. The minimum number of fire hydrants available to a building shall not be less than that listed in Table C105.1. The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table C105.1 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted.

SECTION C104
CONSIDERATION OF EXISTING FIRE HYDRANTS

C104.1 Existing fire hydrants. Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.

SECTION C105
DISTRIBUTION OF FIRE HYDRANTS

C105.1 Hydrant spacing. The average spacing between fire hydrants shall not exceed that listed in Table C105.1.

Exception: The fire chief is authorized to accept a deficiency of up to 10 percent where existing fire hydrants provide all or a portion of the required fire hydrant service.

Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C105.1.

TABLE C105.1
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS[a, b, c] (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT[d]
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more[e]	200	120

For SI: 1 foot = 304.8 mm. 1 gallon per minute = 3.785 L/m.

a. Reduce by 100 feet for dead-end streets or roads.

b. Where streets are provided with median dividers which can be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.

c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.

d. Reduce by 50 feet for dead-end streets or roads.

e. One hydrant for each 1,000 gallons per minute or fraction thereof.

APPENDIX D

FIRE APPARATUS ACCESS ROADS

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION D101 GENERAL

D101.1 Scope. Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the *International Fire Code*.

SECTION D102 REQUIRED ACCESS

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds (34 050 kg).

SECTION D103 MINIMUM SPECIFICATIONS

D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm). See Figure D103.1.

D103.2 Grade. Fire apparatus access roads shall not exceed 10 percent in grade.

Exception: Grades steeper than 10 percent as approved by the fire chief.

D103.3 Turning radius. The minimum turning radius shall be determined by the fire code official.

D103.4 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4.

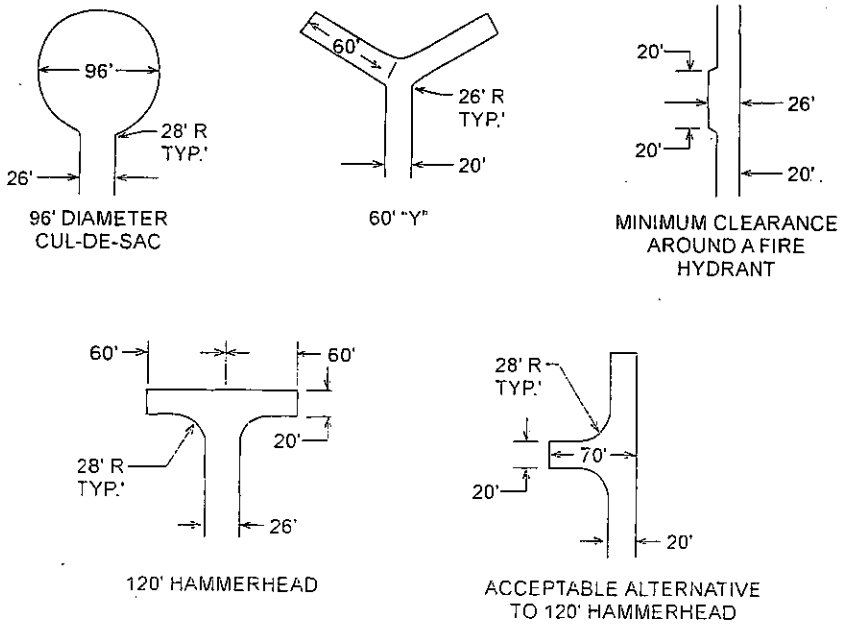
TABLE D103.4
REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0–150	20	None required
151–500	20	120-foot Hammerhead, 60-foot "Y" or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
501–750	26	120-foot Hammerhead, 60-foot "Y" or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
Over 750	Special approval required	

For SI: 1 foot = 304.8 mm.

D103.5 Fire apparatus access road gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. The minimum gate width shall be 20 feet (6096 mm).



For SI: 1 foot = 304.8 mm.

FIGURE D103.1
DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools or when a key box containing the key(s) to the lock is installed at the gate location.
7. Locking device specifications shall be submitted for approval by the fire code official.

D103.6 Signs. Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING—FIRE LANE signs complying with Figure D103.6. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.

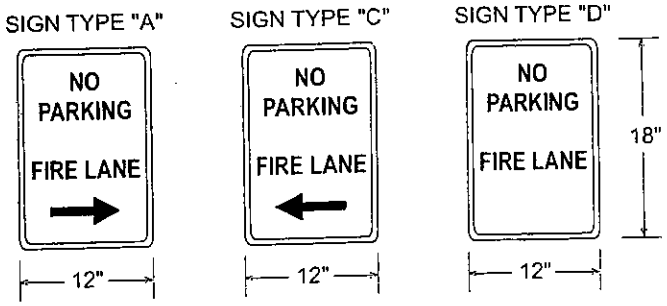


FIGURE D103.6
FIRE LANE SIGNS

D103.6.1 Roads 20 to 26 feet in width. Fire apparatus access roads 20 to 26 feet wide (6096 to 7925 mm) shall be posted on both sides as a fire lane.

D103.6.2 Roads more than 26 feet in width. Fire apparatus access roads more than 26 feet wide (7925 mm) to 32 feet wide (9754 mm) shall be posted on one side of the road as a fire lane.

SECTION D104
COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

D104.1 Buildings exceeding three stories or 30 feet in height. Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have at least three means of fire apparatus access for each structure.

D104.2 Buildings exceeding 62,000 square feet in area. Buildings or facilities having a gross building area of more than 62,000 square feet (5760 m^2) shall be provided with two separate and approved fire apparatus access roads.

Exception: Projects having a gross building area of up to 124,000 square feet (11 520 m^2) that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems.

D104.3 Remoteness. Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

SECTION D105
AERIAL FIRE APPARATUS ACCESS ROADS

D105.1 Where required. Buildings or portions of buildings or facilities exceeding 30 feet (9144 mm) in height above the lowest level of fire department vehicle access shall be provided with approved fire apparatus access roads capable of accommodating fire department aerial apparatus. Overhead utility and power lines shall not be located within the aerial fire apparatus access roadway.

D105.2 Width. Fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7925 mm) in the immediate vicinity of any building or portion of building more than 30 feet (9144 mm) in height.

D105.3 Proximity to building. At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet (4572 mm) and a maximum of 30 feet (9144 mm) from the building, and shall be positioned parallel to one entire side of the building.

SECTION D106
MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENTS

D106.1 Projects having more than 100 dwelling units. Multiple-family residential projects having more than 100 dwelling units shall be equipped throughout with two separate and approved fire apparatus access roads.

Exception: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with approved automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2.

D106.2 Projects having more than 200 dwelling units. Multiple-family residential projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus access roads regardless of whether they are equipped with an approved automatic sprinkler system.

SECTION D107
ONE- OR TWO-FAMILY RESIDENTIAL DEVELOPMENTS

D107.1 One- or two-family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with separate and approved fire apparatus access roads and shall meet the requirements of Section D104.3.

Exceptions:

1. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.3, access from two directions shall not be required.
2. The number of dwelling units on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the fire code official.

From: Joel Cagle [jcagle@bland.org]
Sent: Tuesday, July 07, 2009 3:51 PM
To: Hodge, Vernon (DHCD)
Cc: whowlett@bland.org; jd.mitchell@vfpa.org
Subject: Residential Fire Sprinklers

Mr. Hodge:

It is my understanding that the Code Committee for the Board of Housing has decided to eliminate the requirements entirely for residential sprinklers in the upcoming code.

I just wanted to take a moment and respectfully ask, that if this is true, that the Board please reconsider this decision. This is such a great, important, and controversial code that has the possibility to impact us all, not just in our jobs, but at home in our own private lives; that to just wipe it off the table in it's entirety at this stage is startling.

I understand that this issue has almost everyone pushing or pulling everyone else in different directions trying to sway their thinking from one side to the other. It is a tender subject that each Department involved has a different opinion on.

It is my wish that the Board please reconsider placing the residential sprinklers back on the table for discussion. It is my hope that some sort of middle ground can be obtained that will for the present, please the interested parties and give this code section a chance to breath and see how it plays out. If what is adopted does not work, it can always be modified in the future.

Thank you for your time.

Respectfully,

Joel K. Cagle, CBO
Building Official
County of Bland
P.O. Box 510; Bland, VA 24315
Office: 276.688.4622
Cell: 276.620.4001
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replace that board. Strangely, some people have determined this to mean however. If you have a house that burns down, you can replace it board by board to conform to whatever code or lack thereof may have existed at the time the house was originally built and call it repair. You cannot repair something that does not exist. Unless the house burns down and no longer exists, and you replace it, I can't call that anything other than construction. I would like to make this purely an administrative clean up of the language in the code. You may find some opposition to that. Thank you.

MR. CALHOUN: Charles Werner.

MR. WERNER: Mr. Chairman and members of the Board, thank you for the opportunity of allowing me to come here and speak today. There's many different statistics that have come before you today which would make your job very tough in trying to weight through this and try to figure out what's the best way to go. My name is Charles Werner and I'm with the City of Charlottesville, I'm the Fire chief in Charlottesville and here on behalf of the Virginia Fire Chief's Association. I'd like to take a little bit of a different stance that I think is different from most of the conversations that you heard. One of the things I'd like to say is that there are statistics that are very compelling on both sides of the isle. My suggestion is

that we don't move forward with the proposed amendment as it is today, the option. I say sit down and actually have a dialogue and conversation with some cooler heads and sit down and try to agree with what statistics we can agree on and really dive into this matter. I believe that sprinklers do save lives and will save lives and there's enough statistics that show that. At the same time, I also understand the expense and the issue to the housing people that have brought that information to you today. I think we have seen through the years and if you look back at all these issues, and these concern me and we've heard from Loudoun County, the volunteer aspect doesn't work. The same thing can be true if you look at smoke detectors. If you say smoke detectors are optional today, there wouldn't be smoke detectors in homes. The problems we have in the fire service and the nation as a whole, the big thing about complacency. We quickly forget the issues that happen and in many cases, we always believe fires are going to happen to someone else and that's the mentality that we're in. We hear about fire deaths but I would urge the Committee to deny the proposal and say let's put this back on the table and have a discussion and come back with a proposal that, and even though there may be some compromises and look at what are the outcomes we're trying to achieve and see if we can find

To address reasonable fire protection and affordable housing, there has been many jurisdictions over the years that have permitted the elimination of the bedroom emergency window (which is called the "secondary means of escape" under the NFPA 101, "life Safety Code") in accordance with NFPA 101 Section 24.2.2.1.2 without any detriment to the safety of the occupants in these sprinklered dwellings. This window exception for sprinklers in one and two family dwellings has been in the Life Safety Code since the 1981 edition (over 9 editions and 27 years). In fact, just because jurisdictions permit this exception does not mean in the great majority of bedroom designs that no window is provided. It only provides additional flexibility to the homebuilder or homeowner to provide other types of windows meeting the light and ventilation requirements under the IRC Code Section R303 without the encumbrance of the minimum opening and height requirement above the floor of Section R310.2.

In addition, the exterior wall provisions for sprinklered dwellings, is also a reasonable fire protection compensatory feature to provide and also addresses the affordable housing issue.

In addition, the modifications in this public comment to reference Section P2904 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (Morris): After reading the Committee's published reason for disapproval and then watching the video of the actual public testimony on RB67-07/08 at http://www.ircfiresprinkler.org/resources.htm, I find the Committee's reason for turning down this reasonable sprinkler alternative package that was submitted by the International Association of Fire Chiefs, illogical and without reasonable merit. Based on the IAFC's written supporting statement and the public testimony give in support of this code proposal vs. the opposing testimony, there was more than adequate justification to approve this code proposal. This code proposal (RB67) does NOT mandate sprinklers, but only provided fair and reasonable "trade-offs" when sprinklers are installed.

AvalonBay believes that fair and reasonable sprinkler alternatives should be provided in the IRC to encourage the installation of residential sprinkler systems in the IRC. This public comment provides a good beginning with two (2) sprinkler alternatives that we believe meet this minimum criteria.

To address reasonable fire protection and affordable housing, there have been many jurisdictions over the years that her permitted the elimination of the bedroom emergency window (which is called the "secondary means of escape" under NFPA 101, "Life Safety Code") in accordance with NFPA 101, Section 24.2.2.1.2 without any detriment to the safety of the occupants in these sprinklered dwellings. This window exception for sprinklers in one and two family dwellings has been in the Life Safety Code since the 1981 edition (over 9 editions and 27 years). In fact, just because jurisdictions permit this exception does not mean in the great majority of bedroom designs that no window is provided. It only provides additional flexibility to the homebuilder or homeowner to provide other types of windows that they desire without the encumbrance of the minimum opening and height above the floor requirement.

In addition, the exterior wall provisions for sprinklered dwellings, is also a reasonable fire protection compensatory feature to provide and also addresses the affordable housing issue.

In addition, the modifications in this public comment to reference Section P2904 will coordinate the IRC Committee approved code proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Public Comment 2:

Crystal Feiser, representing West Virginia Code Officials Association, requests Disapproval.

Commenter's Reason: The Committee's action to disapprove this and all proposals to mandate sprinklers in the body of the IRC is correct and should not be overturned. The decision to require sprinklers should be left up to state and local jurisdictions. Appendix P can be adopted, if so desired. West Virginia will be forced to amend or delete the fire sprinkler requirements for the following reasons: water line size, pressure and lack of water availability.

Final Action: AS AM AMPC____ D

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RB68-07/08

R313.1 (New), Chapter 43 (New)

Proposed Change as Submitted:

Proponent: Sean DeCrane, Fire Department, Cleveland, OH, representing International Association of Fire Fighters, Local 93

1. Add new text as follows:

R313.1 Fire protection systems. One and two family dwellings that incorporate lightweight truss or engineered lightweight material such as wooden I-beams, cold form steel or trusses in the floor or ceiling areas shall have the floors/ceilings assemblies protected by a thirty (30) minute fire-rated barrier.

Exception: Where the building is protected with a sprinkler system designed to NFPA 13D.

(Renumber subsequent sections)

2. Add standard to Chapter 43 as follows:

NFPA
13D-07 Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes

Reason: On August 13, 2006 a Wisconsin fire fighter was killed, and a second fire fighter injured, when the floor they were operating on collapsed sending them into the basement. One fire fighter fell directly into the room of origin and was killed, the second fire fighter landed on the opposite side of a block wall and survived by shielding herself and making an escape through a rear window. They checked the floor to ensure it was safe and solid, just prior to collapse they heard a loud crack. T

The floor they were operating on was unprotected lightweight construction that collapsed without warning. In the ensuing investigation, the National Institute for Occupational Safety and Health released report F2006-26. One of the recommendations is to "modify current building codes to require that lightweight trusses be protected with a fire barrier". This should not only pertain to truss construction. There are additional forms of construction that can be determined to be lightweight, cold form steel, bar joists, wooden engineered I-beam, etc., the recent trend in residential construction is to use products that are financially beneficial. It is the belief of many of us in the fire service that as the industry engineers products to a more finite point we are losing our safety factors.

In April, 2005, NIOSH released their report "Preventing Injuries and Deaths of Fire Fighters due to Truss System Failures". In their release they recommended the placement of a labeling system on buildings to indicate the type of construction. While this recommendation will probably not be acceptable to residents of a one or two family home, we can mandate that they increase the protection of the construction type to provide increased safety to the residents and the responding fire fighters.

1. National Institute for Occupational Safety and Health Report F206-26. July, 2007.
2. National Institute for Occupational Safety and Health Alert, "Preventing Injuries and Deaths of Fire Fighters due to Truss System Failures".

Cost Impact: This code change proposal will increase the cost of construction.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action: Disapproved

Committee Reason: The committee indicated that the proposed language lacked the proper technical definition of lightweight materials. Further, the committee raised some issues with crawl spaces as they applied to the proposed text as it addressed floor or ceiling areas. There was insufficient technical justification specifically no time differences provided as they apply to lightweight trusses and lightweight material including wooden I-beams and cold formed steel or trusses to support this proposal.

Assembly Action: None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Sean DeCrane, Fire Department, Cleveland, OH, representing International Association of Fire Fighters, requests Approval as Modified by this Public Comment.

Replace proposal as follows:

R313.1 Fire protection systems: One Family and Two Family Occupancies incorporating designed lightweight materials such as trusses or engineered lightweight material (including but not limited to wooden I-Beams, cold-form steel or light gauge bar joist trusses) in the structural floor or ceiling areas, shall protect the floors/ceilings areas with a barrier exhibiting a thirty (30) minute fire resistance on the underside of the floor/ceiling system.

Exception: If the underside of a floor system is a crawl space where no combustible materials are stored.

(Renumber subsequent sections)

Commenter's Reason: On August 13, 2006 a Wisconsin fire fighter was killed, and a second fire fighter injured, when the floor they were operating on collapsed sending them into the basement. One fire fighter fell directly into the room of origin and was killed, the second fire fighter landed on the opposite side of a block wall and survived by shielding herself and making an escape through a rear window. They checked the floor to ensure it was safe and solid, just prior to collapse they heard a loud crack. T

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In their report 2007-12 released May 16, 2008, NIOSH recommended "Ensure fire fighters are trained for extreme conditions such as high winds and rapid fire progression associated with lightweight construction". They further stated, "In this era of new lightweight construction, training procedures covering strategy and tactics in extreme operations conditions, such as high winds and lightweight building construction (i.e. materials and design) are needed for all levels of fire fighters. Lightweight constructed buildings fail rapidly with little warning, complicating rescue efforts. The potential for fire fighters to become trapped or involved in a collapse may be increased. There are twenty-nine actions for fire fighters can take to protect themselves when confronted with buildings utilizing lightweight building components as structural members. They range from looking for signs or indicators that these materials are used in buildings (such as, newer structures, large unsupported spans, and heavy black smoke being generated) to getting involved in newer building code development".

On September 27, 2007 NIOSH released report 2006-24. The first recommendation of the report read "Ensure that fire fighters and incident commanders are aware unprotected pre-engineered I-joist floor systems may fail at a faster rate than solid wood joists when exposed to direct fire impingement, and they should plan interior operations accordingly". The discussion of the recommendation is quite lengthy but identifies the

DHCD Fire-Safety Presentation

July 2009

Paul K. Whitney

* As of 2009 there were 130 million U S homes
  & 300,000 New Home Bldg Permits projected to be issued
* If all new construction were sprinkled – effect is ¼ of 1%
  of total homes @ a cost of ($2,000 x 300,000 = $600 million)
* Most new homes are statistically not high-risk.

*Flo2Stop is a UL 985 approved residential, ventilation-control device that is connected to existing thermostats.

*It also uses existing smoke-detectors, CO-detectors and other alert signals to notify by text message or email the owner/occupant/property manager/or others, allowing verification on site before fire trucks roll, and giving fire-fighters the earliest possible advantage.

*Easily reset by occupant to avoid false alarms. Internal program won't read battery chirps or power spikes – avoiding false alarms.

*Flo2Stop is a low voltage, intelligent device that can be installed by electricians, HVAC technicians, security technicians, and property- maintenance staff.

*The red "ready" light, gives the occupant a constant reminder of the importance of the smoke detector.

*Cost for thermostat control only is $160 (no monthly charge)
Cost for UL Security zone application is $225
Cost with text messaging capability is $290 (no monthly charge)
Installation estimate $50 to $100, subject to local labor costs

*Applications: multi-family, single family, state and federal housing, property managers, college & university-especially older-off-campus risks, assisted care facilities, military housing.

*That $600 million spent in the sprinkler example above could affect 2,068,965 high-risk homes, as opposed to the 300,000 new lower-risk homes. This is 7 times more coverage.

Flo2Stop can easily be retrofitted into older households.

say that everyone appreciates the work that the fire departments do in our lives and has done for decades in the Commonwealth of Virginia and the United States. I'd like to say that we as builders build the safest houses possible. We try everyday from the day we start construction we build as safe a house as possible to keep our employees safe and the clients that buy our houses. In conversations with many builders in our area, we are confused why it just cannot be an option. We are in the service industry and we sell homes to people that want to buy them. We put in what the people want to buy. So we're asking that this be an option and we'd be opposed to the sprinklers. Thank you.

MR. CALHOUN: Paul Whitney.

MR. WHITNEY: Good morning. My name is Paul Whitney and I spent 25 years doing fire restoration and rebuilding buildings after fires. Some years ago I started a research project and I've written a book on household fires. That book is listed on the FEMA book list and there's only two in the country that speak to this. As a result of doing all these autopsies on burned buildings, I started noticing a pattern in fire construction and one of them is that we are ventilating these fires in the early stages. Some have more ventilation than others but as a result of that, there's been some projects that have been

developed that connects and working towards filling these gaps in the technology that we have now. We have the sprinkler on one hand and we have very little on the other. This technology is very simple and when you use the existing circuit for the smoke detector in your home and will connect to your thermostat, go out on a phone line and make an email or a text message. For mass housing or for single family, you now have a way to respond. This little device costs .30 cents a square foot. It does an enormous job for a very small cost. I have not had anyone argue with the logic of slowing down ventilation during a fire. What I'm hoping is that we get some consideration to use the technology and there's going to be many people show up in the marketplace to do this. If we can start interrupting the early ventilation cycle in these fires, it will allow the fire fighters more time. This is easily programmed to oscillate in two minutes depending on what the owner wants to do with the notification. They now have the ability to understand what's going on in these houses in the earliest fire stages. There's a reset button on it for the convenience of the homeowner and there's a number of ways this thing can be utilized to have an enormous option here. In this case, in 25 years doing autopsies on these fired homes. We can use carbon monoxide detectors, this little signal devise

can be used and it's UL approved to use the signal to use the existing smoke and existing thermostat and existing communication and we can give these fire fighters a jump on these fires. Thank you.

MR. CALHOUN: John Conrad.

MR. CONRAD: Good morning, I'm John Conrad. I'm with Miller and Smith in McClean, Virginia builder and developer. I'm speaking to you this morning in hopes that I can be one small voice of reason that will allow you to reject the notion that residential sprinkler systems can be a mandatory component in new homes. During my career, I've seen any number of code revisions that have been enacted in order to make a home more safe. Smoke detectors in the home, some now have them in every bedroom. Bathrooms and exterior building and now we have them in kitchens, basements and garages. We have firewalls between units, fire protection stairs, and fire stopping petitions. Multi-family units and townhouses have fire retardant plywood on the roof and every type of residential construction we are obligated to plug every little hole to stop drafts from spreading the fire. My point is not to brief you on the aspects of building code but to demonstrate that there are many fire and safety measures that the home builders already have embraced, not necessarily because it's mandated but

Current Trends in HVAC Operations
July 2009
Paul K. Whitney

* New residential design for "Green Homes" intake 10-15% outside fresh air for environmental air quality. Commercial mechanical code requires shut-off for 5 ton systems – this code doesn't apply to residential.

* Residential HVAC systems are currently designed to operate during fire conditions; even when the equipment starts the fire.

*Residential HVAC installers are using up to 20% flexible duct with low melt & burn point which is an easy point for the fire to breach.

* Residential HVAC installers are using vinyl and vinyl coated canvas connectors for transitions and sound deadening splices – again, easy breach point.

* Efficiency studies are currently revealing and average 16% leakage for residential duct systems. Examples: Open splices, loose connectors, slipped duct clamps, and plastic ties in a bind or misaligned. – again, easy fire breach point.

*New residential applications for high-efficiency HVAC systems are designed to "change" or "turn-over" the entire air volume per zone/air handler in as little as 16 minutes. The average fan is 1500cfm. Example: In 8 minutes, half the air volume in the area will be pushed toward the fire by the HVAC system aiding in the expansion of the fire.

*Residential fires double in size every 20 seconds (NFPA data)

*The Flo2Stop give firefighters a definite time advantage, and slows the spread of smoke, contaminants, and fire gasses in the early stages of the fire.

system. We've had no leaks or any problems with any piping, sprinkler heads or any system components. The only maintenance I perform is to drain the system once each year but I don't have to but I do it throughout the year. I do it as well as to flush out any sediment that may have accumulated over the past year from the water in the pipes. This process is so easy, that my 11 year old son conducted the entire flushing procedure this year. Often people ask why I've done this and why I spent $3,000 to put the system in. Like many here, since 1976 I been involved and served with the Chesterfield Fire and EMS Department. Over those years, I have run thousands of fires and seen many fire deaths. That has included men, women and children. In 1992, when we built our home and we knew that we were going to have children and we weren't satisfied with the fact of about a 50 percent safety factor. With the residential sprinkler system, our chances jump up to 97 percent to help my family to survive a fire should we have one if I'm not there. So I'm going to urge you to protect future generations of children by voting to install these sprinkler systems. Thank you.

MR. CALHOUN: Mark Granville-Smith

MR. GRANVILLE-SMITH: Good morning, my name is Mark Granville-Smith. I'm currently vice president of the Northern Virginia Building Industry

Association. No one from our building industry would discount the value of human life. Arguing that sprinklers won't reduce the chance of death or injury is nonsense. In fact, there is any number of ways to reduce the chance of death of injury due to fire. What criteria should be used? Clearly, the code requires the consideration of costs as well as health and safety for the homebuyers. There are two issues that strike me most interesting through these discussions were; cost is truly an issue when confronted with fire prevention and safety on both sides. Our fire officials have ranked their highest priority in most effective fire prevention method as public education and awareness. However, our current Board of Supervisors recently has cut the budget of the fire department so they have an urgent awareness. They have to focus on public awareness and education programs. Given these facts, there are better more cost effective ways to deal with this issue than mandating sprinklers in every home. Builders are being unfairly characterized as putting the dollar ahead of safety. Did our local government officials cut the education funding because they weren't concerned about fire safety, of course not. Smoke detectors were a home run in terms of saving lives as well as being cost effective. Sprinklers are not. It should be optional. An interesting fact is I'm a boater and

I enjoy it and the Coast Guard requires boats 17 feet or longer to have a fire extinguisher on the boat even if it's made out of aluminum. We've never offered fire extinguishers in the kitchens and garages might be a solution or partial solution to this issue. There are a number of other options or solutions and I'll give them to you in my written comments. Thank you.

MR. CALHOUN: James Dawson.

MR. DAWSON: Mr. Chairman and members of the Board, good morning. I'm James Dawson and I'm the fire marshal for Chesterfield County. I'm asking you to pull the code changes submitted by the Homebuilders Association concerning residential sprinklers. I submitted a previous written statement outlining my concerns about the process, the Codes and Standards Committee used to approve the change. I believe the Committee is very short sighted to remove a provision of a nationally recognized model code with only 30 minutes of discussion when the issue was debated for more than 8 hours at the International Code Council Hearing. In addition, the Committee's discussion included more questions about sprinklers and no discussion on the merits of these systems. I'd also like to point out something about this supporting statement presented by the Homebuilders Association in their proposed changes. In that statement,

Rodgers, Emory (DHCD)

From: Jason Gill [JGill@ecfp.com]
Sent: Friday, July 31, 2009 10:42 AM
To: Rodgers, Emory (DHCD)
Subject: Residential Sprinklers

Good morning Mr. Rodgers,

It was all I could do the other day not to get up and speak my mind on home sprinklers after hearing both sides do nothing more than spew propaganda. You guys said you'd take written comments, so here's mine:

1) A sprinkler system is definitely more of a problem for rural areas due to wells and I understand the concern of cost, however, isn't this exactly the folks that need this sort of protection? These are the homes that take the FD longer to get to and usually have no hydrants nearby. Its almost a guaranteed total loss.
2) This "option" the builders so amorously promote... well, how many of them actually have a listed and priced option for a sprinkler system in their spec homes? They most certainly have a $3,500 add for a lawn sprinkler system, but I'd be willing to bet almost none of them have the "option" for a fire sprinkler system, which by the way costs about the same and can be installed by the plumbers, so no need to seek specialized contractors.
3) The builders' cries that they build affordable housing and that sprinkler systems would make starter homes less affordable fall on def ears here. When was the last time any one of those builders built and delivered a detached, single family dwelling for under $200k? They enjoyed 50%+ margins on houses for over ten years and never complained that they were making too much money. Ultimately, they're concerned that sprinkler systems will lower their margin. It's very simple. Builders make money on labor, not material costs. Subcontracts are essentially material costs since they're fixed. Builders enjoy high margins because they employ most of the workforce on a site. The subcontractor's pricing is only minimally marked up, thereby reducing the builders profit margin. I get it. Its capitalism and I'm okay with that, but let's not cry poverty over this.
4) I agree that sprinklers should be optional on single story homes. There's less chance for entrapment and collapse.
5) I believe the correct way to go about this is to model the requirement after the commercial construction code. Sprinklers should only be required where a fire would put people or adjacent properties at risk. There should be height/story limitations, area limitations, separation requirements and construction type/feature trade-offs. For example, I believe a single story home should never be required to have a sprinkler system so long as the bedroom windows are easily exitable to a grade level not exceeding 7' below. I believe sprinklers should be required in homes exceeding 1 story, over 2,000 sf, within 40' of an adjacent non-sprinklered home and of combustible construction. Non combustible construction built under IRC should not require sprinklers.
6) Lastly, if this truly remains an "option," why even write it in the code at all? Currently its an option, that's why very few homes have it. If it remains an option, it will never be marketed and definitely not installed.

This is just my two cents.

Respectfully,

Jason Gill
Design Manager

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