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Governor

James S. Cheng
Secretary of
Commerce and Trade

COMMONWEALTH of VIRGINIA

William C. Shelton
Director

DEPARTMENT OF
HOUSING AND COMMUNITY DEVELOPMENT

MEMORANDUM

TO: Board of Housing and Community Development Members

FROM: Emory Rodgers, Deputy Director, Division of Building and Fire Regulation EMR

DATE: March 5, 2010

SUBJECT: Report – Residential Sprinkler Information

DHCD staff is pleased to provide you with a variety of fire data reports and other related information regarding one and two-family residential sprinklers. There has been a package of code changes submitted to mandate sprinklers for townhomes with incentives and a code change by the homebuilders to require a fire extinguisher in kitchens.

The 2009 regulatory cycle started in March of 2009 and the stakeholders have been meeting since then to achieve consensus on as many code changes as possible. In June and December of 2009 the Codes and Standards Committee met and approved a number of code changes and also denied some.

Staff has scheduled work group meetings with the stakeholders from February to the end of April with the goal being to obtain consensus on most of the submitted code changes. The results from these meetings will then be submitted to the Codes and Standards Committee in May for their decisions as to what would then constitute the final regulations for the BHCD to approve at the end of June or July, 2010.

When board members are contacted by stakeholders with proposals and information on any of our active code changes, please refer them to the agency so we can invite them to participate in the appropriate work group to vet their ideas with the other stakeholders. By doing so any stakeholder would then have the opportunity to provide written and oral comments that will be made available to the members of the Codes and Standards Committee at the two planned May committee meetings. In previous Codes and Standards Committee meetings, the Chairman has also recognized and allowed some stakeholders to make short statements on specific code changes usually from questions asked by committee members.

As staff receives new information and data from the work group meetings or that is sent to us, these materials will be assembled and presented to the board members.

NFPA e-ACCESS
Your accessible route to fire and life safety information for people with disabilities.

The content of articles contained in e-ACCESS solely reflect the personal opinions of the authors or contributors and do not necessarily represent the official position of NFPA

March, 2010
Volume 2, Issue 4

Allan B. Fraser, Coordinator
NFPA e-ACCESS
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Circulation: Over 23, 000

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"Who Put the "Dis" in "Disability?"

By Allan B. Fraser, CBI, CPCA, Sr. Building Code Specialist, NFPA

"Disability" is an interesting word. I began thinking a lot about it just before the holidays. Where did it come from? What does it really mean and maybe more important, what does it imply, directly or subtly?

Let's start with the root word, "ability."

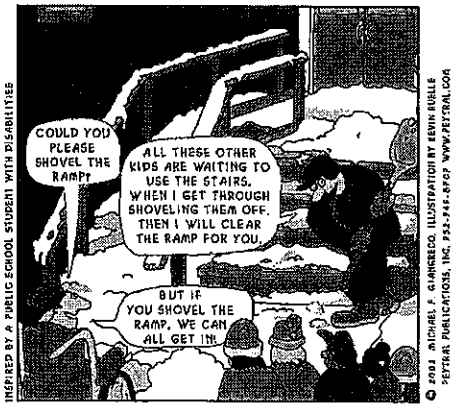
According to the *Merriam Webster Online Dictionary*, it dates back to the 1300's. It is defined as "the quality or state of being able; *especially* a physical, mental, or legal power to perform; competence in doing; a skill; a natural aptitude or acquired proficiency."

Professor Stephen W. Hawking

The word certainly applies to some very skilled and well-known individuals. Singers Stevie Wonder and Andrea Bocelli, theoretical physicist Stephen Hawking, Congressmen Anthony Coelho and James Langavin are all well known for their abilities and deservedly so even though they all have some significant disabilities.

Now what about the word "disability"?

Merriam Webster Online Dictionary indicates that the word "disability" dates back to the mid 1500's. It is defined as "the condition of lacking capacity, ability, or qualification for the purpose or end in view by illness or injury; physically or mentally impaired in a way that substantially limits activity especially in relation to employment or education; inability to pursue an occupation because of a physical or mental impairment; lack of legal qualification to do something; a disqualification, restriction, or disadvantage."



CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!

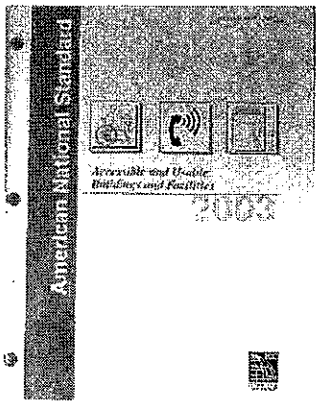
Reprinted with permission of Michael F. Giangreco

Not a very positive word and as a simple definition I'm not sure that it can be properly applied to any of the amazing individuals above. They all work and are well known for their skills. They are all financially well off. I

would certainly not consider any one of them to be at a disadvantage to their peers in their respective professions. So to what purpose would we choose to use the word "disability" to describe any of them? But we do.

While many well intentioned people have worked tirelessly for decades to provide equal opportunity for everyone, we may have inadvertently worked against that purpose by our choice of words.

In May, 1959, the American Standards Association, acting on the request of The President's Committee on Employment of the Physically Handicapped, called a general conference of those groups vitally interested in the problem. This conference recommended the initiation of a project to develop a standard to make buildings and facilities in the United States useable and accessible, and this recommendation was subsequently approved by the Construction Standards Board. The President's Committee on Employment of the Physically Handicapped and the National Society for Crippled Children and Adults were designated co-sponsors, and the latter agreed to assume the secretariat. That standard, A117.1, which is still maintained is the only ANSI consensus standard for making buildings and facilities usable and accessible.



Fifty years ago we recognized that all Americans didn't have the same opportunities open to them. They didn't have a level playing field on which to pursue their dreams and ambitions or even to navigate the built environment. We concluded that this simply wasn't right. Government as well as various private organizations set out to do something about it. But from the beginning we were using what I call "loaded" phrases such as "physically handicapped" and "crippled children" while we were trying to embrace and include this community. Today, we have a generally accepted style of writing about people with disabilities. It's referred to as "People First" language.

Today it is both technically correct and non-offensive to say that "he uses a wheelchair." It really is a drastic improvement from the way we used to describe the same individual by saying "wheelchair-bound" or "he's confined to a wheelchair". We've always said "the child with a broken leg", but we used to call one who uses leg braces "a crippled child". Robert Burton's understood the power of words. "From this, it is clear how much more cruel the pen may be than the sword." In *The Anatomy of Melancholy* published in 1621.

Similarly it is considered proper to use the phrase "people with disabilities." While it does put the person ahead of the "disability," it still isn't right in my humble opinion. As a society, we have mistakenly taken a mindset that divides us into two groups, "able bodied" and "disabled." The fact of the matter is that we all have been or will be part of the "disabled" group for some period in our lives. I think the word "disabled" simply continues to imply an inferior status and I would like to suggest another approach.

"Multiple Intelligences – New Horizons", written by Howard Gardner (1993) introduced the theory of multiple intelligences (MI) which he first developed in the early 1980s. As the title indicates, he believes that human cognitive competence is better described in terms of a set of abilities, talents, or mental skills, which he calls *intelligences*. In his book he notes that "all individuals possess each of these skills to some extent; individuals differ in the degree of skill and in the nature of their combination."

Professor Howard Gardner

- Linguistic Intelligence - (Word Smart): means that you are good at writing, reading, spelling, and talking. You have an easy time using words.
- Logical-Mathematical Intelligence - (Number smart): means that you are good at math and using numbers. You are also good at riddles and using computers.
- Spatial Intelligence - (Picture smart): means that you are good with images and have an eye for detail. You can paint, draw, build, and design things.
- Musical Intelligence - (Music smart): means that you are good at patterns, tempos, rhythms, and

sounds. You are probably good at singing or playing a musical instrument.

- Bodily-Kinesthetic Intelligence - (Body smart): means that you are good at moving your body. You might be good at sports or dancing. You also might be good at crafts like sewing, carving, or building models.

- Interpersonal Intelligence - (People smart): means that you are good at understanding other people and their feelings. You might be a good leader.

- Intrapersonal Intelligence - (Self smart): means that you understand yourself very well. You are aware of your own feelings, ideas, and dreams.

Think about Stevie Wonder and Stephen Hawking. We describe them noting their skills. Wouldn't it be wonderful if we could simply refer to all people based on their abilities or intelligences? Then maybe we could take the "dis" out of "disability".

Residential Fire Sprinkler System: A Lesson Learned

By Bill Scott, Founder & President of Abilities Unlimited, Inc.

It was a little after 11: 00 p.m. when I finally decided to transfer out of my wheelchair and go to bed. I left my wife, cousin, and son talking in the family room after an eventful evening that included my car battery dying on the way home from a party. My cousin, Geoff, had gotten my car started with a boost from his car battery and when we got home, he connected his battery charger to my car to charge it for a few hours.

I wasn't in bed more than 20 minutes when I heard a loud explosion, and instantly, I knew what had happened. From force of habit, someone had closed the garage door and the hydrogen gas build-up in the enclosed space resulted in an explosion that started a fire in the garage. While my cousin and son attempted to put out the fire, my wife, Susan, called 911. They wanted her to stay on the phone, but she told them she had to get her husband up into his wheelchair and out of the house … a decision for which I am eternally grateful.

My cousin and my son, also named Jeff, coincidentally, did manage to keep the fire from spreading, and the fire department arrived quickly and had everything under control within minutes. Susan had gotten me out of the house and across the street to safety, and aside from the damage to my car, all ended well.

According to NFPA statistics,

- About 79% of all people who die in fires die in their homes.
- 77% of all structure fires occurred in residential properties.
- A residential fire occurs every 79 seconds.
- Nationwide, a civilian fire death occurs every 156 minutes.

I was fortunate for a number of reasons. I was not at home alone and I was not asleep.

Even as a wheelchair user, I am physically capable of providing assistance with transferring from the bed into my wheelchair (clothing optional in an emergency).

My wife and I lived in a single story, ranch-style home with only one step at the entrances which were ramped.

Although my son was present, he is an adult, and there were no small children in the house.

The location of the fire did not block the paths to the two remaining exits.

Making a Decision

Several years later when Susan and I decided to go forward with building a new home, the events of the night of the explosion and fire in the garage stayed with me. There were several things we wanted in our new home that were non-negotiable, and highest on that list was a fire sprinkler system. Since there wasn't one in our previous home, we had several questions that required some research before making a decision.

Is a fire sprinkler system expensive?

According to Jim Ford, Assistant Chief/Fire Marshall Scottsdale – Rural/Metro Fire Department, in residential properties, recent designs and technical improvements have allowed the installation cost to average between $0.55 and $0.75 per square foot for typical homes. Estimates suggest that when a home is under construction, a home sprinkler system could cost approximately 1% of the total building price – that's less than most upgrades like carpeting, fire places, covered patios and window treatments.

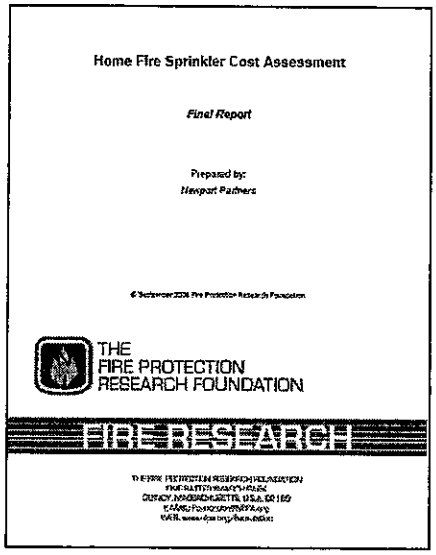
If there is a fire in one room, will the sprinklers be activated throughout the whole house?

Sprinklers are individually activated by the heat from a fire, so when one fire sprinkler activates to control a fire, the entire sprinkler system does not activate. Residential fires are usually controlled with one sprinkler. A study conducted in Australia and New Zealand covering 82 years of automatic sprinkler use found that 82% of the fires which occurred were controlled by two or fewer sprinklers.

Do fire sprinkler systems actually save lives, or just property?

Although property losses are 85% less in residences with fire sprinklers compared to those without them, fire sprinklers do save lives. In the City of Scottsdale, AZ residential fire sprinkler systems have been mandated by municipal ordinance since January 1, 1986. Over the 15 year period between January 1986 and January 2001 there were 598 home fires in the City of Scottsdale. Of the 598 home fires, 49 were in single-family homes with fire sprinkler systems. There were no deaths in sprinklered homes. 13 people died in home fires without sprinklers[1].

The NFPA has no record of a multiple death fire in a completely sprinklered public assembly, educational, institutional or residential building where the system was properly operating.


Home Fire Sprinkler Cost Assessment

Final Report

Prepared by:
Newport Partners

THE FIRE PROTECTION RESEARCH FOUNDATION

FIRE RESEARCH

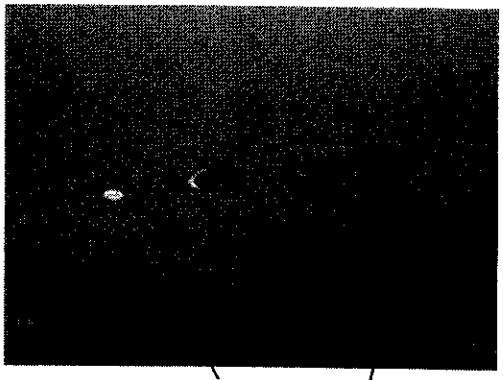
Will a smoke alarm serve the same purpose as a fire sprinkler system?

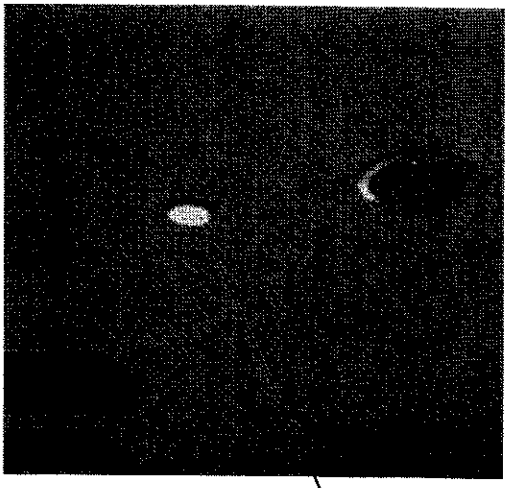
Millions of Americans have installed smoke alarms in their homes in the past few decades, and they do serve a very useful purpose. But a smoke alarm can only alert the occupants to a fire in the house ... it cannot contain or extinguish a fire. Residential fire sprinkler systems can!

Will the Installation of fire sprinklers provide discounts on insurance premiums?

Insurance from homeowner underwriters will vary depending on the type of coverage. The discounts now range between 5-15%, with a projected increase in available discounts.[2]

When we looked at the pros and cons of a residential fire sprinkler system in our new home, the decision was easy ... with one last caveat. It had to look nice! We didn't want those ugly sprinklers sticking out of our ceiling like you see in many restaurants or hotel rooms. We were very pleased to find that sprinklers for home use can be mounted inconspicuously and flush with walls or ceilings. The sprinkler itself is covered with a cap that comes in designer colors to fit in with most any décor and is installed to conceal the recessed sprinkler from view.


Covered Fire Sprinkler & Smoke/ Fire Alarm


Close-up Sprinkler

A Lesson Learned

The incident with the explosion and fire in the garage was a wake-up call for my wife and me. We realized how very fortunate we were that the house was not seriously damaged and, most importantly, no one was harmed. If the fire fighters had not arrived and acted as quickly as they did, the fire might easily have spread to the rest of the house resulting in significant damage, and possibly the total loss of our home. While not a requirement to have sprinklers in the garage area, our new home does. We now have extended that protection to all of the areas throughout our new home.

Our research showed us there is really no down side to having a fire sprinkler system in your home, especially if it is new construction. Not only is it a proven safety feature of major proportion, it's also cost effective, unobtrusive and aesthetically appealing. But most importantly, it can save your home and your life.

[1] (From: 10-04-2008 AZ Republic Article)
[2] (Source: U.S. Fire Administration)

Abilities UNlimited, Incorporated was founded in 1988 to provide professional disability related consulting services with an emphasis on compliance with the Americans with Disabilities Act (ADA) and the Fair Housing Amendments Act (FHAA).

They have worked with numerous public and private sector clients to help them better understand how the ADA & FHAA influences their facilities, services, and programs. AUI's goal is to give our clients the tools and knowledge that is needed to integrate all people into the mainstream of corporate and community activities.

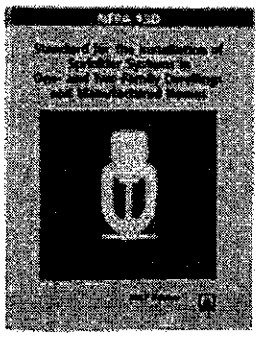
FIRE SPRINKLER INITIATIVE
Bringing Safety Home

About NFPA's Fire Sprinkler Initiative

Fire sprinklers save lives and NFPA is committed to doing all we can to bring this higher level of safety home.

- Roughly 84% of all civilian fire deaths in 2007 resulted from home structure fires.
- If you have a reported fire in your home, the risk of dying decreases by about 80% when sprinklers are present.

Sprinkler advocates across the country have asked for a coordinated effort to encourage the use of home fire sprinklers. NFPA has launched that effort through the "Fire Sprinkler Initiative®: Bringing Safety Home."The Fire Sprinkler Initiative, a project of the National Fire Protection Association, is a nationwide effort to encourage the use of home fire sprinklers and the adoption of fire sprinkler requirements for new construction. The initiative includes a variety of proven, effective ways that home fire sprinkler advocates can communicate the impact of sprinklers.



This Web site provides resources for the fire service and other sprinkler advocates who want to demonstrate the need for home fire sprinklers in their community. Tools and field resources available here help advocates talk with local elected officials and others about the life-saving impact of sprinklers.

In addition, the site contains information to help home fire sprinkler advocates navigate the legislative process to get sprinkler ordinances introduced and passed in their communities and allow them to come together to share their ideas, successes, and tools with other advocates across the country.

http://www.firesprinklerinitiative.org/

The Fine Art of Listening

By Neil McDevitt, CEPIN Program Director

Anthropologists have often noted that tightly-knit groups of people will listen to each other before they listen to "experts". You can see this in politics when Democrats or Republicans bemoan the impartial Congressional Budget Office reports. You'll see it as a fire prevention officer visits a school and kids will say, "That's not what my dad told me!" You'll see it at the firehouse kitchen table when firefighters get the latest newsletters from NFPA and other regulatory bodies. It's exactly the same behavior you'll see from people with disabilities.

For all the differences between them, the two communities of disability and firefighting actually have a great deal in common. There's an inherent mistrust of outsiders in both groups. They share a language that is difficult for outsiders to decipher, and they don't necessarily like anyone else telling them what to do or what's best for them.

All of these factors make people with disabilities a particularly challenging group for fire and life safety educators to address. Obviously people with cognitive disabilities render most of the prepared "scripts" that fire and life safety educators use ineffective.

For almost 7 years, I was one of the few people in the United States with a unique view on this issue. I was born deaf and have profound hearing loss in both ears. I was also a volunteer firefighter with the Fire Department of Montgomery Township, a combination department just north of Philadelphia, PA. While I'm aware that many fire departments have members with disabilities who perform administrative duties, I actually received my FF1 designation and performed active fire suppression work as a volunteer.

The most rewarding experiences for me have been when deaf students from the Pennsylvania School for the Deaf come to our firehouses for fire prevention activities. The teachers often schedule them at the end of the school year as "rewards" for good behavior from their students. What was especially challenging for me was realizing that every group of students has different levels of functional needs. Some of the students were just deaf. Others were deaf with significant cognitive disabilities. One student was deaf, blind, and had cognitive and mobility disabilities.

Neil McDevitt helps a Pennsylvania School for the Deaf student use a hose line.

Most fire and life safety educators I know just don't know how to effectively communicate or tailor their program to meet these needs and as a result, there is a significant gap in fire and life safety among people with disabilities.

There's another similarity between firefighters and people with disabilities. Studies have shown that firefighter training is geared towards a hands-on approach. This also tends to be true of people with disabilities. In fact, it may be an even more significant need for people with disabilities. The standard script does not work when a person cannot use their legs to use an escape ladder or when a person cannot hear verbal commands from firefighters. Hands-on training and drills help identify critical areas of need and where the approach needed to be modified to accommodate them.

Perhaps the best practice is to have people with disabilities take on an active role within your department and become active an ambassador in fire prevention to the disability community. I know it's not always feasible for a person with a disability to take on a front-line position but that doesn't mean that they can't receive the same training and understand the issues critical to fire prevention and fire safety.

When communities that rely on volunteer firefighters see those numbers start to dwindle it may be advantageous to explore how people with disabilities, who have traditionally been kept out of the fire service, can help. For example, a person with mild cognitive disabilities who can excel at a repetitive task can assist in refilling SCBA cylinders. A person with visual impairments can become a scribe and help the incident commander keep track of radio communications. The scope of involvement is limited only by the creativity and resource requirements that the department has. The only critical requirements for this to work are an open line of communication and a clearly defined understanding of the role and its associated safety requirements.

The payoff is huge! Instead of viewing people with disabilities as a separate group or a unique group, they can become partners in the fire prevention and life safety education efforts. Instead of a department being short-handed at fire scenes, you now have people who are ready, willing, and able to help. Perhaps more importantly, they've become your #1 ambassador to a severely under-served community and can spread the message of fire prevention with their own "war stories", talking about the sights, the sounds, the horrors, and the victories instead of boring newspaper clippings.

As a volunteer firefighter in suburban Philadelphia, McDevitt is one of a handful of emergency responders in the country who are also profoundly deaf. In addition to hands-on fire and rescue experience with the Fire Department of Montgomery Township, he has provided fire safety presentations to deaf children and adults and given non-verbal communication classes to firefighters,

police officers and emergency medical technicians (EMTs).

Mr. McDevitt was originally involved with the Community Emergency Preparedness Information Network (CEPIN) as one of its leading subject matter experts in developing the CEPIN course. In addition, Neil brings 10 years of project management experience as a Senior Information Security Specialist with Prudential Financial. He is a graduate of Gallaudet University and lives in Montgomery Township, Pa. with his wife and two children.

"Remembering When" Scholarship Conference

NFPA Public Education trainers Terry Campbell and Pat Mieszala dramatize a fire and fall safety presentation for an older adult in the home during the "Remembering When" Scholarship Conference held last fall in Boston. Close to 70 scholarship winners from across the country, representing fire departments and agencies who mainly reach out to older adults through home visits, participated.

Collaboration and Preparedness: Is the Cart Before the Horse?

By Chris Littlewood, Project Coordinator, St. Petersburg College

The importance of collaboration in disaster preparedness is gaining more attention. Within the special needs community, communicating with all possible players in emergency management is essential to mitigating the effects of a disaster. I find a central question is do you collaborate to better prepare the community or do you prepare yourself in order to better collaborate? Well in one sense, it is like the age old question: "Which comes first the chicken or the egg?" Conversely, collaboration is very important at a community level, but absolutely nothing is more important than self-preparedness for an emergency or a disaster.

The National Response Framework, DHS, and FEMA define special needs using a functional approach. The five functional areas of special needs individuals include maintaining independence, communication, transportation, supervision and medical care. These areas establish a person's baseline ability to function without assistance before, during, and after an incident (emergency or disaster). The point being, every person's functional needs are different and since each individual knows his or her own needs best, self preparedness is paramount.

Although self preparedness is critical, I find it interesting that when people come together to talk about the importance of collaboration as part of emergency preparedness, some of the same individuals have done little or nothing to prepare themselves, whether he or she is a person of special needs or not. In other words those key to the success of mitigating disasters through collaboration have forgotten how important self-preparedness is. This is NOT always the case. However, an argument could be made that everyone could do better in the self-preparedness department. I know. I ask.

Whenever I give a presentation or discuss the concept of collaboration for disaster preparedness, I ask all of the participants, "What have you done to prepare?" They immediately start to respond with how they have initiated community involvement between emergency responders and the general public or special needs populations. I stop them. Again I ask, "What have YOU done to prepare?" The group smiles.

Many responses are usually right on target and are good examples of what everyone should do to prepare themselves to mitigate a disaster. However, too often, eyebrows raise, notes are taken when others respond, and looks of panic and guilt come

across many members of the emergency responder community and the special needs community. I'm guilty too. We can all do so much better.
Again, the point is this, in a disaster or an emergency those affected are all in it together, but each person's individual level of preparedness can help or hinder the situation. Preparing for emergencies or disasters may save your life or the life of a family member. So, what are the essentials of self-preparedness? For starters, a flashlight, off the shelf emergency kit, and some water is not enough.

By definition of a disaster, resources are overwhelmed. Therefore, it is best to be prepared to be absolutely self-sufficient for a minimum of 72 hours, including food and medical supplies and everything required to meet your functional needs. Just like effective collaboration hinges on asking questions within your community, effective self-preparedness centers on asking questions about your own needs.

Houston, TX., September 2, 2005 Approximately 18,000 hurricane Katrina survivors are housed in the Red Cross shelter.

Try answering the questions in this top ten list and always keep in mind how the answers are affected by any special needs you may have:

1. Are you as prepared at work or school as you are at home for a disaster?
2. Are you as prepared if you are in your vehicle when disaster strikes?
3. Have you established with your family and/or caregiver a list of meeting places if you are apart when disaster strikes?
4. Have you established multiple forms of communication (especially if you have a special need in this regard) if there are no telephones?
5. Have you or any family member with special needs registered with local emergency management?
6. What do you count on to meet your functional special needs (wheelchair, car, computer, caregiver) and how will you function if that is not available?
7. Do you have multiple evacuation plans?
8. Do all family members have a single emergency contact?
9. What basic items would it be nice not to have to live without if you must face a disaster (a special snack, picture, your pet)?
10. Do you have extra of everything you use in the next 72 hours?

***This list is not intended to be used in place of the self-preparedness steps that are outlined by: www.ready.gov .

Suggestions and details provided there and by FEMA are **STRONGLY** recommended. This top ten list of questions are simple questions to ask yourself in order to prepare your kit, plan, and be informed.

People often talk about preparing the general public and special needs populations separately for disasters. If you look at the definition of special needs almost everyone can somehow become part of a special needs group.

Therefore, truly special needs populations should always be part of the preparation process. Special needs populations are always part of the general public. Collaborate with everyone in your community for better preparedness, but always self-prepare first. Self-preparedness is the horse that leads the collaborative community cart to safety.

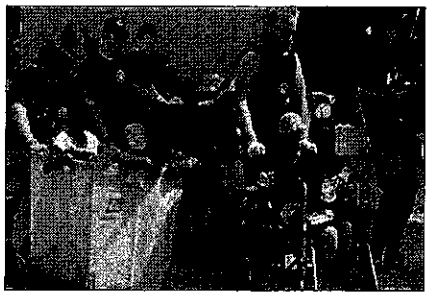
Chris is a project coordinator with the Center for Public Safety Innovation and the National Terrorism Preparedness Institute at St. Petersburg College. He has been an adult educator for more than fifteen years with an emphasis on technology and public safety. He believes in friendly advocacy and self advocacy for ALL people with varying special needs and disabilities. Since Chris has a moderate to severe hearing loss himself, he is always involved with the deaf, late-deaf, and hard of hearing communities at all levels. The importance of inclusion of EVERY special needs group in emergency planning is profoundly important to Chris. He has developed curriculum and facilitated courses for police officers, military personnel, government employees, and the general public. His background includes interactive course design, including accessible training for special need populations and people with disabilities. Chris also has an extensive background in various civilian law enforcement roles.

IHPC 2010

INCLUSIVE HURRICANE PREPAREDENESS CONFERENCE

April 28-29, 2010 | Biloxi, MS

The *Inclusive Hurricane Preparedness Conference* will bring together emergency management and disability stakeholders from states throughout the Gulf Coast and the Eastern Seaboard to discuss the latest issues in preparing and responding to vulnerable populations during hurricanes.



The conference will focus on relationship building and the benefits of integrating disability organizations in hurricane planning and preparedness stages. Speakers from national, state and local government agencies and organizations will focus on programs that have worked in their communities as well as continued shortfalls and challenges that they experience.

What You Will Learn

- Developing Demographic Pictures of Disability Communities
- Accessible Sheltering
- Evacuation Planning for Disability Communities
- Building Community Partnerships
- Utilizing Social Networks During Emergencies

Speakers Include:

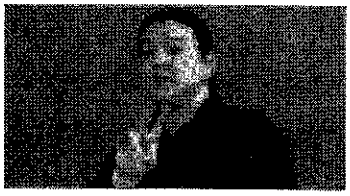
- Mike Womack, Director, Mississippi Emergency Management Agency
- Marcie Roth, Senior Advisor on Disability Issues, FEMA
- Tina Robinette, Deputy Fire Marshal, State of South Carolina
- Lt. General Russel Honore, Commander Joint Task-Force Katrina
- Paul Timmons, Chairman, Greater New Orleans Disaster Recovery Partnership
- Mark Sloan, Coordinator, Harris County, TX Office of Emergency Management
- Jenifer Simpson, Senior Advisor for Government Affairs, American Association of People with Disabilities
- Judith Barrett, Executive Director, Ability1st
- And Others…

Click here for more information

Lt. General Russel Honore, Commander Joint Task-Force Katrina speaking at NOD/EPI enABLEus Conference Sept. 2009

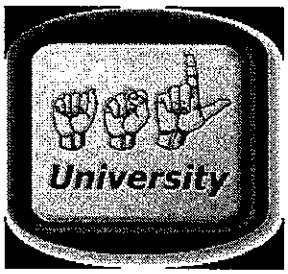
Accessible Information for People with Hearing Loss in Times of Disaster.

By Dave Cisneros, Deaflink, Inc.



In times of disaster, accessibility for people with a hearing loss, both hard of hearing and deaf, is mostly a matter of getting them the correct information in a manner in which they will clearly understand and getting them that information in a timely manner.

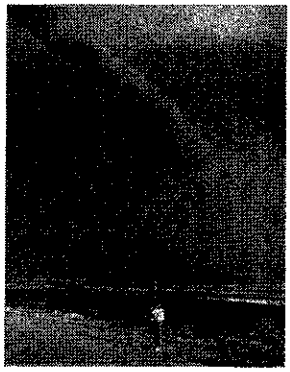
For a hard of hearing person or a late-deafened person, that can be as simple as providing closed captioning on the television. But what about for a deaf person who's primary language is American Sign Language (ASL) which has no roots in English.



ASL is a conceptual Language that uses no English syntax. According to Gallaudet University the majority of Deaf have a 2nd to 3rd grade reading comprehension level of the English language.

Imagine you're at home watching your favorite program when you get up to get a drink from the kitchen. Suddenly you hear a *BEEP BEEP BEEP* coming from your television followed by …. "The National Weather Service in San Antonio has issued a Tornado Warning for……" What do you do?

Most of us hear and recognize the beep and go back to the television to hear the rest of the alert and *read* what counties are affected by the Tornado Warning as they scroll across the screen.



Can a deaf person hear the beep? No. Can a deaf person hear the statement from the National Weather Service? No. Can the deaf person read and understand the words scrolling across the screen? Possibly, but most likely, No!

So how do we get the correct information to a person who is deaf?

Put it in their language! With today's technology there are so many ways in which we can receive information. Be it television, radio, internet, email or smart phones. Now imagine if that same message you just heard and read on your television screen was sent via email to someone's computer or smart phone for them to view in their own language.

The deaf now have equal access to the same information and can make their own decisions on what to do accordingly and independently. And they receive this information, free of charge, by simply *signing up to receive Accessible Hazardous Alert System (AHAS) messages from Deaf Link.*

The received message comes with links to an ASL video of the alert with an audio track and a text file of the alert. A deaf person can see the video and get the information. A Hard of Hearing person can read the text file that they receive. A visually impaired person can hear the audio track on the alert and / or hear the text file using their computers text to speech program. And for persons who are Deaf/Blind the text file can be read using their Braille capable devices.

Deaf Link has also been active with FEMA during times of disaster. Working with Texas Division of Emergency Management, Deaf Link was able to provide Video Remote Interpreting (VRI) to the deaf in emergency shelters throughout Texas after Hurricane Katrina struck New Orleans and other disasters. W

When Hurricane Ike struck the Texas coast, the deaf in the shelters had access to medical care as well as having equal access to the information FEMA was providing. And when FEMA opened Disaster Recovery Centers (DRC's) in Texas so that people could register for FEMA assistance following the hurricanes, Deaf Link was there to provide interpreting services.

In today's world there are ways to make all information accessible to all people, especially information that could potentially save lives. The first step is to put that information in their own language.

David Cisneros has 20 years experience working as a teacher teaching deaf students who have other disabilities on top of their deafness, as a Specialist assisting people who are deaf to gain and maintain employment and as an interpreter for the deaf. He currently holds his BEI Level 2 Certification in the state of Texas and has been proudly working for Deaf Link for over 5 years.

AfAA
Rocky Mountain Fire Alarm Association

IS PLEASED TO PRESENT

ADDRESSING COMMUNICATION NEEDS OF PEOPLE WITH DISABILITIES IN THE DESIGN OF EMERGENCY NOTIFICATION AND FIRE ALARM SYSTEMS

SPEAKERS

BILL SCOTT – PRESIDENT, ABILITIES UNLIMITED
WAYNE MOORE - PRINCIPAL, HUGHES ASSOCIATES, INC

March16, 2010
12 Noon – 2:00PM
Holiday Inn Denver Central
4849 Bannock Street
Denver, CO 80216

Cost $25:00 (includes lunch) RSVP
john.mcgovern@encoreelectric.com

Click for more information

Do you have a story to tell or information to share?

Our readers are people with disabilities, and their relatives, caregivers, and friends.

Our goals are to:

- Provide specialized information about fire and life safety for people with disabilities directly to those with disabilities and to those who assist them to help reduce or eliminate fire deaths and injuries, as well as those resulting from other emergencies, and
- Provide a forum for the collection and dissemination of information for people with disabilities in support of DARAC's mission.
- Provide personal stories about events, ideas or solutions from our readers that can guide others in similar circumstances.

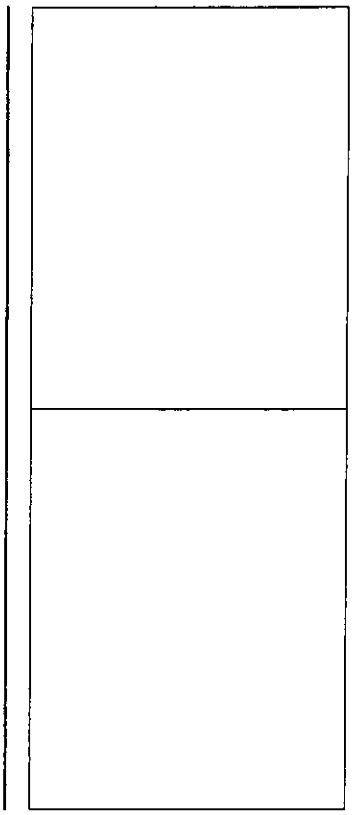
Content for future editions will include:

- NFPA-related news
  - DARAC news
  - NFPA codes- and standards-related information
  - Fire safety tips
  - Emergency evacuation information
- Articles relating to the safety of people with disabilities from:
  - NFPA staff
  - DARAC members
  - Other national advocates
  - General news
  - Our readers
- Other standards-developing organizations' news
  - U.S. Access Board
  - ANSI/ICC A117, *Standard for Accessible Buildings and Facilities*
  - RESNA
  - U.S. Department of Justice
  - Other

We'd love to hear your stories and opinions! If you'd like to contribute an article or information consistent with the outline above, please e-mail them to Allan B. Fraser, senior building code specialist and *e-Access* coordinator at *afraser@nfpa.org*.

Did You Miss an Issue?

No problem! You can read the back issues of *e-ACCESS* by clicking here.



REPORT TO THE BOARD OF HOUSING AND COMMUNITY DEVELOPMENT

To: Members
Board of Housing and Community Development

From: Emory Rodgers, Deputy Director
Division of Building and Fire Regulation

Date: March 5, 2010

Subject: IRC sprinkler fire data for one and two family dwellings and related information

This is an interim one and two-family home fire data report that includes related information to assist you in preparing for the upcoming May, 2010 Codes and Standards Committee meetings and the June or July, 2010 approval of the final regulations. The data mining collected was based on requests from Board members and the Virginia Housing Commission. Staff has assembled the materials on fire data from the Virginia Department of Fire Programs and has included materials from the International Residential Code Work Group meetings held to date on three occasions in 2009 with one remaining meeting scheduled for April 22, 2010. Staff also conducted a survey of local building departments to determine the age of homes where deaths occurred for the past ten years and obtained information from the US Census on the number of existing homes and homes built since 1990.

Fire Data:

1. The first fire data report is provided for one and two family dwellings from 2000 to 2008 and a second report covers from 2004 to 2009. The two reports thus represent a 10 year window to spot trends that stakeholders can then opine support their views or refute the views of others. During the time frame 2000 to 2008, there were two firefighter deaths and an average of 39 civilian deaths per year. For 2009 from January to December, there has been one firefighter death and 37 civilian deaths within one and two family dwellings. The fire reports show that average response time was 7.89 minutes.

2. The second report shows that 17% of the fires are occurring between mid-night and 7:00a.m. From 8:00 a.m. to 4:00 p.m. 37% of the home fires occur when most residents would be away at work or in many cases awake. From 4:00 p.m. to midnight 46% of the fires occurred in homes. This is when cooking and smoking would be occurring most often and would correlate with these two factors as being in the top causes of home fires.

3. A DHCD survey found that the age of homes where there were fire deaths was: 56% pre-1973; 28% pre-1990; and, 16% post-1990. Statistically, 84% of the fires deaths were in homes built pre-1990, while only 16% of the fires deaths were in homes built in post-1990 homes. The number of one and two family homes in Virginia pre-1973 was 1.4 million; the number was 2.3 million for pre-1990; and, the number was 2.7 million for 2008.

4. The major causes of home fires in 2009 were cooking-33%; heating-16% and then smoking, electrical, open flames from candles and fireplaces. A 2007 report from the state fire chiefs notes that cooking fires account for 38% of the home fires and 44% of the injuries while smoking accounts for 17% of the home fire deaths. The report notes in 2007 52% of the civilian fire deaths were from suspicious fires.

5. Home fires have a 72% confinement rate to the building that includes the object, room or story while 3.1% go beyond the building. The rooms with the most fires are the kitchen, bedrooms and family rooms. It appears that the confinement rate is influenced by the 8 minute or less response time.

6. This report from the home builders for 2009 shows the states adopting the sprinkler mandate legislation statewide were New Jersey and New Hampshire with effective dates of July 1, 2012. Both states have legislation filed to reverse these decisions. The New Jersey Governor has recently suspended the regulation for further review. Maryland adopted the mandate statewide, but gives localities authority to amend. Washington would allow local option to mandate sprinklers by moving the mandate into an appendix. California and Pennsylvania have adopted the mandate for one and two family dwelling sprinklers. In Pennsylvania the builders plan to pursue legal action. States saying no to the mandate include Arkansas, Idaho, Missouri, North Dakota and Texas. Minnesota will not adopt the 2009 IRC at this time. Numerous states are promulgating regulations and staff will update the BHCD as states complete their regulatory processes.

7. IRC Work Group Meetings and Summary Notes and the list of attendees are attached: What you can gleam from the notes is that the representatives agree on a goal to reduce fire deaths and injuries from home fires. There are then two distinct options on how that goal can be achieved here in Virginia.
    - 4-9-09 - IRC Sprinkler Work Group Summary and list of attendees.
    - 6-3-09 - IRC Sprinkler Work Group Summary and list of attendees.
    - 9-9-09 - IRC Sprinkler Work Group Summary and list of attendees.
    - 12-7-09 - IRC Sprinkler Work Group Summary and list of attendees.
    - List all individuals invited to the meetings.
    - Report to the Virginia Housing Commission.
    - A summary of code changes approved and denied to date.
    - A new regulatory schedule for the Board's approval.
    - Code changes received to date. (Compilation document)
    - A copy of the public hearing testimony from January 25, 2010. (separate document)

8. The Insurance Services Office fact sheet indicates sprinklers could have up to a premium discount of 8 to 12% where offered by the insurance company based on the individual policy. Water damage is a basic component of any policy be it a toilet, sink, water heater or sprinkler leak. The report states that local building departments could not achieve top ratings if the building code deletes sprinklers. To verify this statement would require a statewide survey of building departments as well as a survey of insurance rates. The Virginia Sprinkler Coalition indicated that ISO representatives had told them that fire department ratings could also be impacted by not mandating sprinklers in the state building code. Earlier discussions with insurance representatives have found no common consensus on real savings to offset sprinkler installation costs. At the final IRC Work Group meeting on April 22, 2010 insurance representatives will be invited to discuss and clarify and provide additional information on these matters.

TAB 1

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 Department of Fire Programs

Residential Structure Fires with 1 or 2 Family Dwellings, Virginia, 2004-2009

Year	Total	Percent	Average Response Time	Total Dollar Loss	Dollar Loss Per Incident	Civilian Injuries	Civilian Deaths	Fire Service Injuries	Fire Service Deaths	Total Casualties	Casualties Per 1,000 Incidents
2004	5,087	16.0%	8.16	$88,011,488	$17,301	234	71	96	1	402	79.0
2005	5,188	16.3%	8.00	$107,948,618	$20,807	201	31	83	0	315	60.7
2006	5,392	17.0%	7.80	$190,592,302	$35,347	202	40	81	0	323	59.9
2007	5,939	18.7%	7.98	$140,657,690	$23,684	246	58	91	1	396	66.7
2008	5,819	18.3%	7.67	$123,333,588	$21,195	231	46	101	0	378	65.0
2009*	4,365	13.7%	7.71	$97,129,725	$22,252	165	34	68	1	268	61.4
Grand Total	**31,790**	**100.0%**	**7.89**	**$747,673,411**	**$23,519**	**1,279**	**280**	**520**	**3**	**2,082**	**65.5**

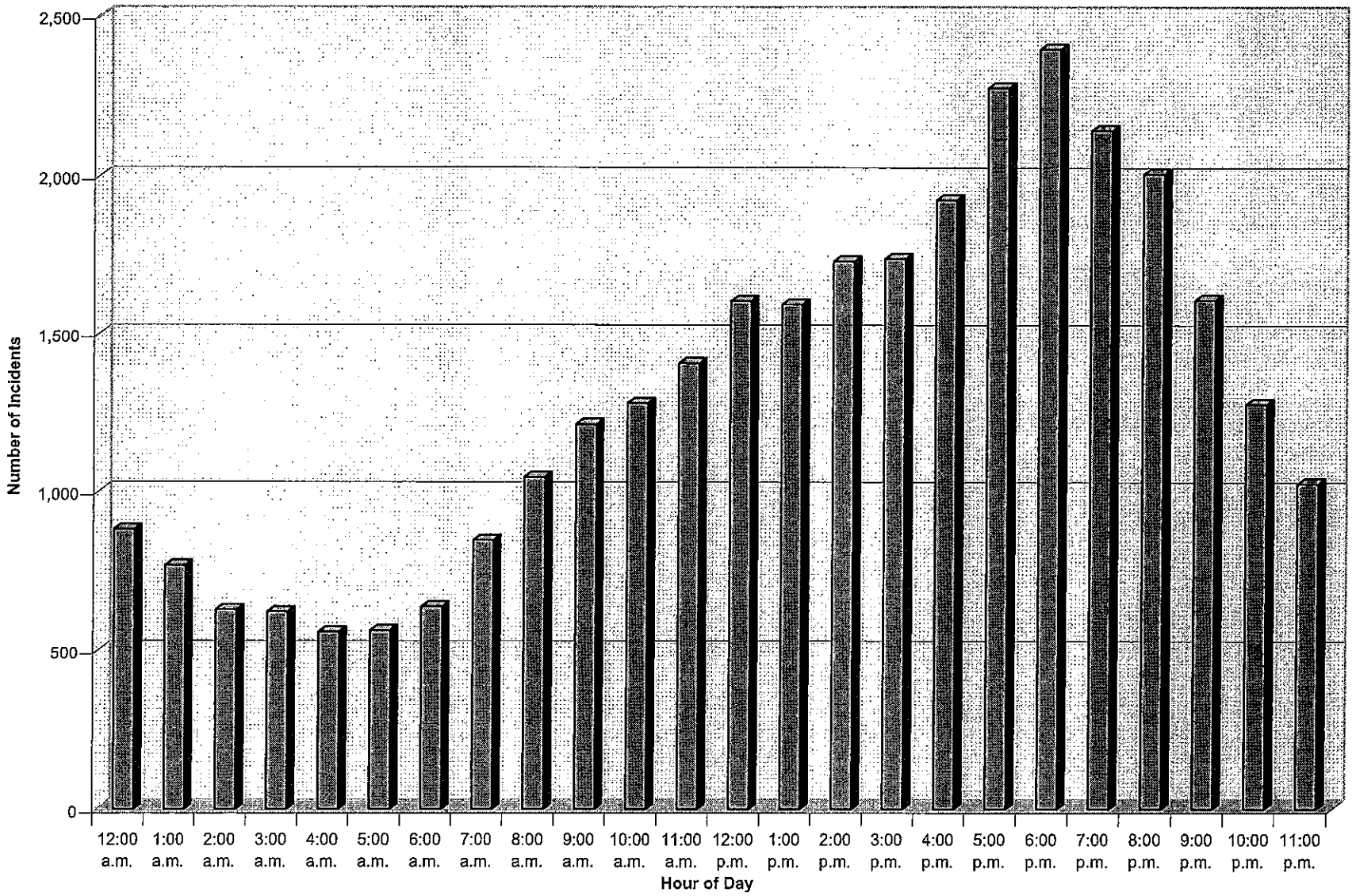
Note: **Data is compiled from all incidents reported to the Virginia Fire Incident Reporting System (VFIRS) for 2004-2008 as of 04/06/2009 and for 2009 as of 12/22/2009.** Residential structure fires include incidents with incident type coded as 110 or 111 (Building Fires), and 113-118 (Confined Building Fires) and property use coded as 419 (1 or 2 family dwelling). For all frequency or incident counts, aid given (mutual or automatic) incidents were excluded and fire exposure incidents were included from the numbers.

Note: Incidents with negative response times (< 0), response times equal 0, or response times≥ 6 hours were excluded from the average response time calculations.

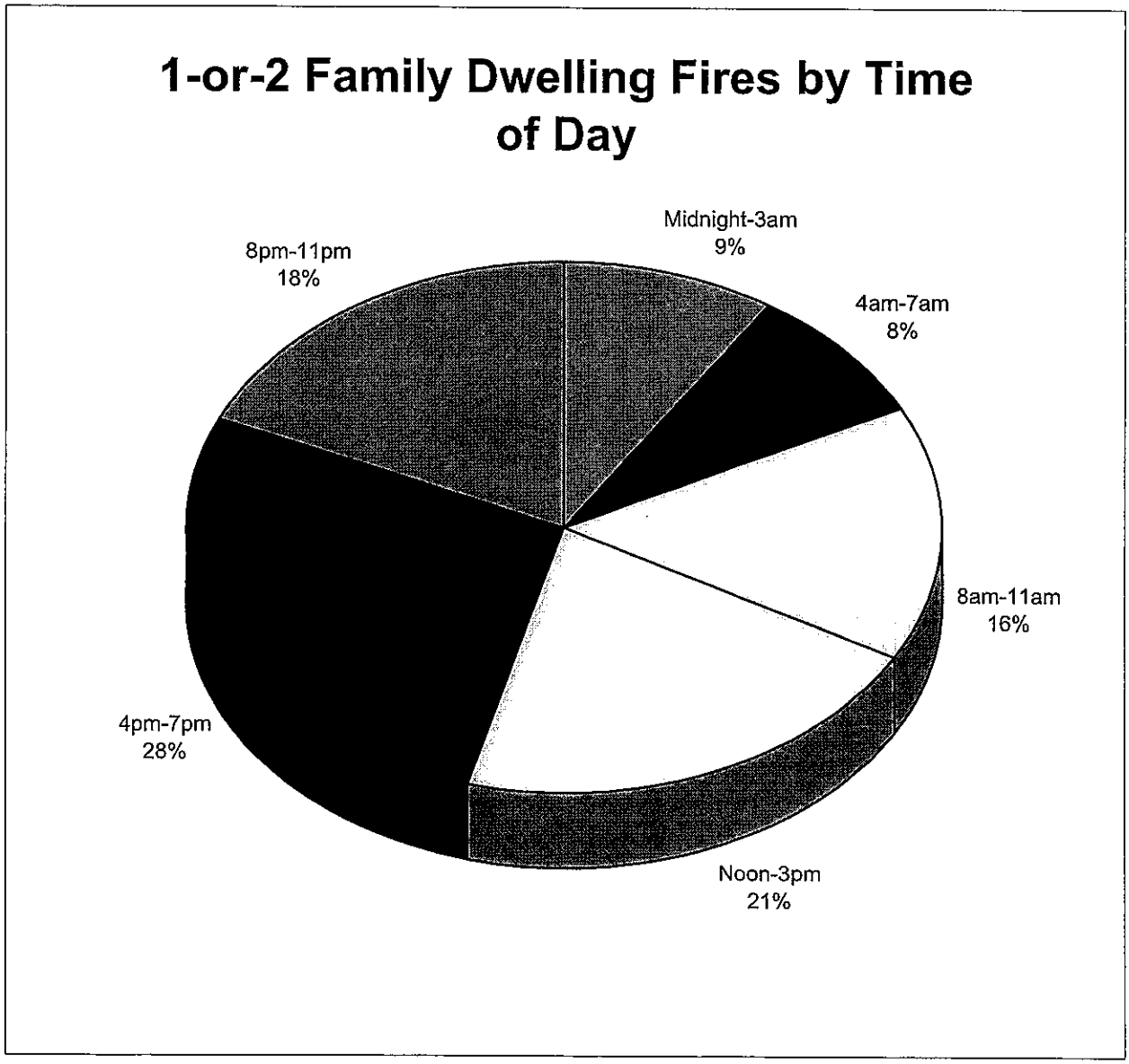
* Data for 2009 is considered preliminary since incidents are still currently being reported.

TAB 2

Hour of Incident with Residential Structure Fires with 1 or 2 Family Dwellings, Virginia, 2004-2009



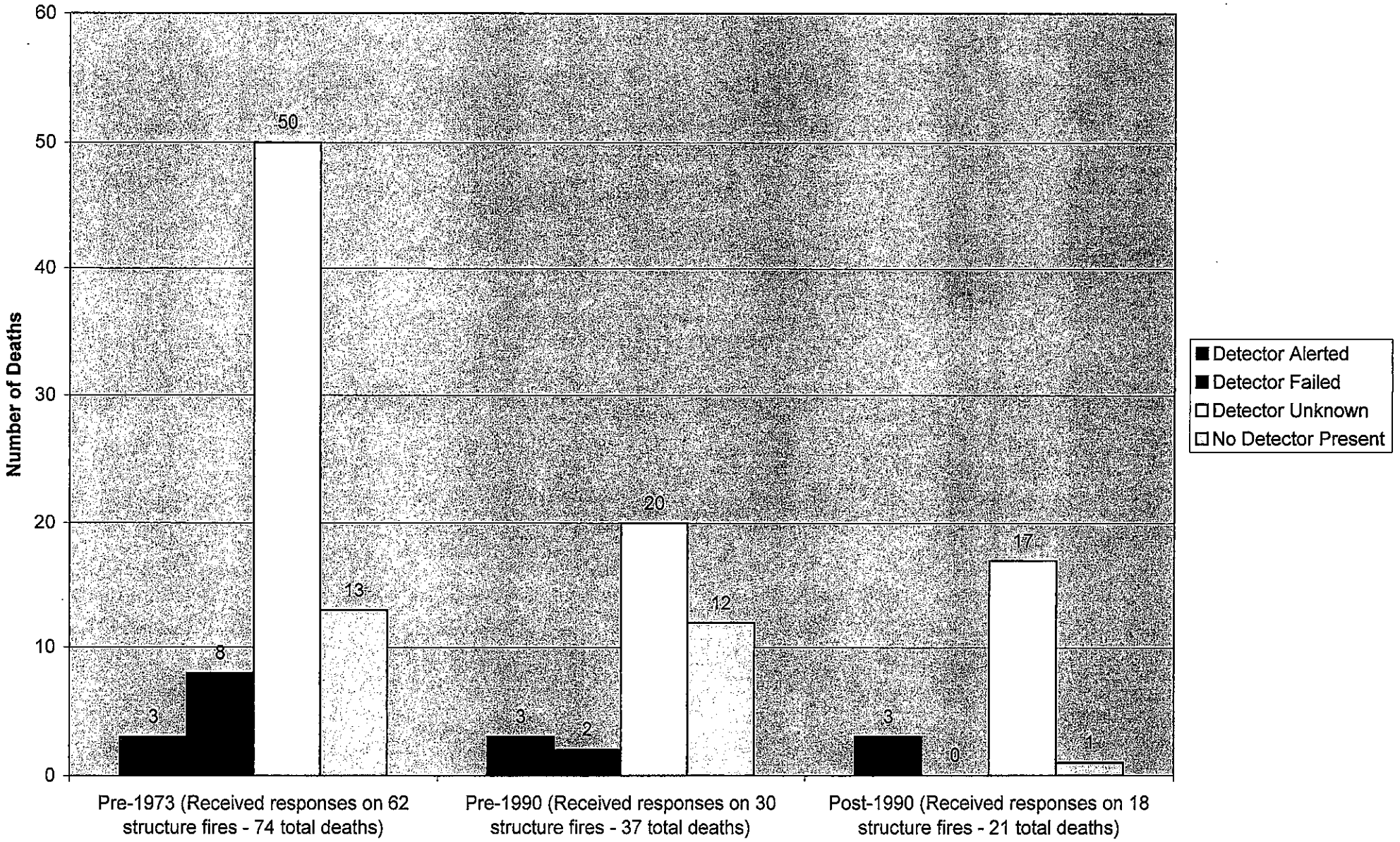
Virginia Residential Building Fires
in 1-or-2 Family Dwellings
(Jan 2000- Sep 2008 Combined)



Source: Virginia Fire Incident Reporting System

TAB 3

Smoke Detector Results per Age Category of Structure



RESIDENTIAL STRUCTURE FIRES - CIVILIAN CASUAL[illegible]S - SMOKE DETECTOR USE AND AGE OF STRUCTURE

County/City	Incident Date (2006)	Civilian Deaths	[redacted]	Detector Did Not Alert	[redacted]	No Detector Present	Detector Unknown	Property Use Description	Age Category (Per Local Building Official or Designee)
Chesterfield County	8/24/2006	1				1		1- or 2-family dwellings	Pre-1973
Henry County	1/23/2006	1				1		1- or 2-family dwellings	Pre-1990
Martinsville	3/28/2006	1				1		1- or 2-family dwellings	Pre-1990
Newport News	6/27/2006	1				1		1- or 2-family dwellings	Pre-1990
Portsmouth	11/17/2006	1				1		1- or 2-family dwellings	Pre-1973
Albemarle County	3/19/2006	2				2		1- or 2-family dwellings	Pre-1990
Mathews County	3/9/2006	2				2		1- or 2-family dwellings	Pre-1973
Rockbridge County	10/30/2006	2				2		1- or 2-family dwellings	Pre-1973
Botetourt County	12/22/2006	1					1	1- or 2-family dwellings	Post-1990
Botetourt County	12/22/2006	1					1	1- or 2-family dwellings	Post-1990
Campbell County	7/20/2006	1					1	1- or 2-family dwellings	Post-1990
Campbell County	7/20/2006	1					1	1- or 2-family dwellings	Post-1990
Charles City County	4/1/2006	1					1	1- or 2-family dwellings	No response
Chesterfield County	8/1/2006	1					1	1- or 2-family dwellings	Pre-1990
Dickenson County	5/12/2006	1					1	1- or 2-family dwellings	Pre-1973
Franklin County	4/13/2006	1					1	1- or 2-family dwellings	Pre-1990
Henrico County	7/22/2006	1					1	1- or 2-family dwellings	Pre-1990
Louisa County	2/9/2006	1					1	1- or 2-family dwellings	Pre-1973
Mecklenburg County	3/19/2006	1					1	1- or 2-family dwellings	Pre-1973
Pulaski County	12/26/2006	1					1	1- or 2-family dwellings	Pre-1973
Rappahannock County	2/16/2006	1					1	1- or 2-family dwellings	No response
Tazewell County	10/7/2006	1					1	1- or 2-family dwellings	Pre-1990
Warren County	2/13/2006	1					1	1- or 2-family dwellings	Pre-1990
Wise County	6/15/2006	1					1	1- or 2-family dwellings	Pre-1973
Chesapeake	12/22/2006	1					1	1- or 2-family dwellings	Pre-1990
Danville	11/4/2006	1					1	1- or 2-family dwellings	Post-1990
Lynchburg	1/23/2006	1					1	1- or 2-family dwellings	Pre-1973
Radford	10/23/2006	1					1	1- or 2-family dwellings	Pre-1973
Roanoke	1/21/2006	1					1	1- or 2-family dwellings	Pre-1973
Roanoke	11/19/2006	1					1	1- or 2-family dwellings	Pre-1973
Henry County	7/18/2006	2					2	1- or 2-family dwellings	Pre-1973
Pittsylvania County	7/18/2006	2					2	1- or 2-family dwellings	Pre-1973
Roanoke	1/20/2006	2					2	1- or 2-family dwellings	Pre-1973
TOTALS		**39**		**0**		**11**	**28**		

12/3/09

RESIDENTIAL STRUCTURE FIRES - CIVILIAN CASUALTIES - SMOKE DETECTOR USE AND AGE OF STRUCTURE

County/City	Incident Date (2007)	Civilian Deaths		Detector Did Not Alert		No Detector Present	Detector Unknown	Property Use Description	Age Category (Per Local Building Official or Designee)
Chesterfield County	12/3/2007	1				1		1- or 2-family dwellings	Pre-1973
Franklin County	3/18/2007	1				1		1- or 2-family dwellings	Pre-1973
Henry County	12/22/2007	1				1		1- or 2-family dwellings	Pre-1973
Wise County	2/20/2007	1				1		1- or 2-family dwellings	Pre-1973
Lee County	4/6/2007	2				2		1- or 2-family dwellings	Unknown per BO office
Washington County	2/19/2007	2				2		1- or 2-family dwellings	Pre-1990
Wise County	2/11/2007	2				2		1- or 2-family dwellings	Pre-1973
Augusta County	1/27/2007	1					1	1- or 2-family dwellings	Pre-1990
Augusta County	5/17/2007	1					1	1- or 2-family dwellings	Post-1990
Charlotte County	4/20/2007	1					1	1- or 2-family dwellings	Pre-1973
Dickenson County	4/21/2007	1					1	1- or 2-family dwellings	No response
Fairfax County	1/20/2007	1					1	1- or 2-family dwellings	Pre-1973
Franklin County	1/28/2007	1					1	1- or 2-family dwellings	Pre-1990
Franklin County	3/18/2007	1					1	1- or 2-family dwellings	Pre-1973
Giles County	4/5/2007	1					1	1- or 2-family dwellings	No response
King George County	11/14/2007	1					1	1- or 2-family dwellings	Pre-1990
Mecklenburg County	3/22/2007	1					1	1- or 2-family dwellings	Pre-1973
Montgomery County	11/25/2007	1					1	1- or 2-family dwellings	Pre-1973
Patrick County	11/10/2007	1						1- or 2-family dwellings	Pre-1973
Russell County	12/23/2007	1					1	1- or 2-family dwellings	No response
Bristol	6/10/2007	1					1	1- or 2-family dwellings	Pre-1973
Charlottesville	3/18/2007	1						1- or 2-family dwellings	No response
Colonial Heights	6/27/2007	1					1	1- or 2-family dwellings	Pre-1973
Covington	10/19/2007	1					1	1- or 2-family dwellings	Pre-1973
Portsmouth	1/16/2007	1					1	1- or 2-family dwellings	Pre-1973
Virginia Beach	1/21/2007	1					1	1- or 2-family dwellings	Pre-1990
Virginia Beach	5/8/2007	1						1- or 2-family dwellings	Post-1990
Virginia Beach	6/15/2007	1					1	1- or 2-family dwellings	Pre-1990
Chesterfield County	3/2/2007	2						1- or 2-family dwellings	Pre-1973
Fairfax County	12/28/2007	2					2	1- or 2-family dwellings	Pre-1973
Prince Edward County	3/3/2007	2						1- or 2-family dwellings	Pre-1973
Hampton	2/17/2007	2					2	1- or 2-family dwellings	Pre-1973
Bedford County	2/7/2007	3					3	1- or 2-family dwellings	Pre-1973
Chesterfield County	3/3/2007	3					3	1- or 2-family dwellings	Post-1990
TOTALS		**45**		**0**		**10**	**28**		

12/3/09

RESIDENTIAL STRUCTURE FIRES - CIVILIAN CASUALTIES - SMOKE DETECTOR USE AND AGE OF STRUCTURE

County/City	Incident Date (2008)	Civilian Deaths	[redacted]	Detector Did Not Alert	[redacted]	No Detector Present	Detector Unknown	Property Use Description	Age Category (Per Local Building Official or Designee)
Arlington County	3/7/2008	1				1		1- or 2-family dwellings	Pre-1973
Essex County	12/5/2008	1				1		1- or 2-family dwellings	No response
Danville	4/10/2008	1				1		1- or 2-family dwellings	Pre-1990
Accomack County	10/12/2008	1					1	1- or 2-family dwellings	Pre-1990
Albemarle County	1/26/2008	1					1	1- or 2-family dwellings	Pre-1990
Augusta County	11/25/2008	1					1	1- or 2-family dwellings	Pre-1990
Buckingham County	2/10/2008	1					1	1- or 2-family dwellings	Pre-1973
Dinwiddie County	10/20/2008	1					1	1- or 2-family dwellings	Pre-1973
Fairfax County	3/5/2008	1					1	1- or 2-family dwellings	Pre-1973
Fairfax County	6/17/2008	1						1- or 2-family dwellings	Pre-1973
Floyd County	8/18/2008							Moved	Multi-Family Per BO
Franklin County	2/23/2008	1					1	1- or 2-family dwellings	No response
Goochland County	6/18/2008	1					1	1- or 2-family dwellings	Pre-1973
Henrico County	1/7/2008	1					1	1- or 2-family dwellings	Post-1990
Henry County	2/29/2008	1						1- or 2-family dwellings	Pre-1973
King George County	6/27/2008	1						1- or 2-family dwellings	Pre-1990
Northumberland County	5/8/2008	1					1	1- or 2-family dwellings	Pre-1990
Powhatan County	5/27/2008	1					1	1- or 2-family dwellings	Post-1990
Powhatan County	11/12/2008	1					1	1- or 2-family dwellings	Post-1990
Powhatan County	12/14/2008	1					1	1- or 2-family dwellings	Pre-1990
Roanoke County	10/28/2008	1					1	1- or 2-family dwellings	No response
Shenandoah County	1/16/2008	1					1	1- or 2-family dwellings	Pre-1973
Smyth County	12/7/2008	1					1	1- or 2-family dwellings	Pre-1973
Southampton County	2/9/2008	1					1	1- or 2-family dwellings	Pre-1973
Surry County	6/26/2008	1					1	1- or 2-family dwellings	No response
Sussex County	12/14/2008	1					1	1- or 2-family dwellings	Pre-1990
Martinsville	7/4/2008	1					1	1- or 2-family dwellings	Pre-1973
Radford	2/4/2008	1						1- or 2-family dwellings	Pre-1973
Richmond	2/19/2008	1					1	1- or 2-family dwellings	Pre-1973
Roanoke	5/8/2008	1					1	1- or 2-family dwellings	Pre-1973
Virginia Beach	4/14/2008	1					1	1- or 2-family dwellings	Pre-1973
Virginia Beach	7/23/2008	1					1	1- or 2-family dwellings	Pre-1990
Henrico County	9/24/2008	2					2	1- or 2-family dwellings	Post-1990
Warren County	4/17/2008	2					2	1- or 2-family dwellings	Pre-1990
Chesapeake	2/28/2008	3						1- or 2-family dwellings	Pre-1990
Westmoreland County	12/24/2008	1				1		Residential, other	Unknown per BO office
James City County	11/8/2008	1					1	Residential, other	N/A - Camper
TOTALS		**40**		**0**		**4**	**29**		

12/3/09

RESIDENTIAL STRUCTURE FIRES - CIVILIAN CASUALTIES - SMOKE DETECTOR USE AND AGE OF STRUCTURE

County/City	Incident Date (2009)	Civilian Deaths	[redacted]	Detector Did Not Alert	[redacted]	No Detector Present	Detector Unknown	Property Use Description	Age Category (Per Local Building Official or Designee)
Northumberland County	1/8/2009	1				1		1- or 2-family dwellings	Post-1990
Grayson	1/12/2009	3				3		1- or 2-family dwellings	Pre-1990
Albemarle County	4/18/2009	1					1	1- or 2-family dwellings	Pre-1973
Amherst County	2/8/2009	1					1	1- or 2-family dwellings	Pre-1973
Appomattox County	1/30/2009	1					1	1- or 2-family dwellings	Pre-1973
Augusta County	2/21/2009	1					1	1- or 2-family dwellings	Post-1990
Fairfax County	2/16/2009	1					1	1- or 2-family dwellings	Post-1990
Henrico County	2/15/2009	1					1	1- or 2-family dwellings	Pre-1973
Henry County	1/25/2009	1						1- or 2-family dwellings	Pre-1973
Northumberland County	1/10/2009	1					1	1- or 2-family dwellings	Post-1990
Page County	3/3/2009	1						1- or 2-family dwellings	Post-1990
Pittsylvania County	3/21/2009	1					1	1- or 2-family dwellings	Pre-1973
Rockingham County	2/16/2009	1						1- or 2-family dwellings	Pre-1973
Rockingham County	2/16/2009	1					1	1- or 2-family dwellings	Pre-1973
Tazewell County	6/10/2009	1					1	1- or 2-family dwellings	Pre-1973
Chesapeake	2/9/2009	1					1	1- or 2-family dwellings	Pre-1973
Hampton	1/25/2009	1					1	1- or 2-family dwellings	Pre-1973
Manassas Park	3/1/2009	1						1- or 2-family dwellings	Post-1990
Suffolk	3/10/2009	1					1	1- or 2-family dwellings	N/A - Camper
Virginia Beach	5/26/2009	1		1				1- or 2-family dwellings	Pre-1990
Fairfax County	4/2/2009	2					2	1- or 2-family dwellings	Pre-1990
Lee County	10/2/2009	2					2	1- or 2-family dwellings	Unknown per BO office
TOTALS		**26**		**1**		**4**	**17**		

Includes: 1- or 2-family dwelling, detached, manu- factured home, mobile home not in transit, and duplexes

12/3/09

RESIDENTIAL STRUCTURE FIRES - CIVILIAN CASUALTIES - SMOKE DETECTOR USE AND AGE OF STRUCTURE

County/City	Incident Date	Civilian Deaths	Detector Did Not Alert	No Detector Present	Detector Unknown	Property Use Description	Age Category (Per Local Building Official or Designee)
Henrico County	2/11/2006	1			1	Multifamily dwelling	Pre-1990
Roanoke County	10/5/2006	1				Multifamily dwelling	No response
Danville	3/31/2006	1			1	apartment/condo	Pre-1990
Hopewell	9/11/2006	1		1		Multifamily dwelling	No response
Virginia Beach	11/24/2006	1			1	Multifamily dwelling	Pre-1990
Winchester	3/13/2006	1			1	Multifamily dwelling	No response
TOTALS		**6**	**0**	**1**	**4**		
Tazewell County	3/24/2007	1			1	apartment/condo	Apt. - Pre-1973
Virginia Beach	5/26/2007	1		1		Multifamily dwelling	Pre-1973
TOTALS		**2**	**0**	**1**	**1**		
Hampton	12/4/2008	3				apartment/condo	Apt. - Pre-1990
Arlington County	7/28/2008	1			1	Multifamily dwelling	No response
Fairfax County	1/12/2008	1			1	Multifamily dwelling	Apt. - Pre-1973
Fairfax County	3/1/2008	1			1	Multifamily dwelling	Condo - Pre-1990
Floyd County	8/18/2008	1			1	Apartment	Post-1990
Lee County	3/2/2008	1				Multifamily dwelling	No response
Danville	2/15/2008	1		1		Multifamily dwelling	Pre-1973
Harrisonburg	2/16/2008	1			1	Multifamily dwelling	No response
Portsmouth	11/24/2008	1			1	Multifamily dwelling	Pre-1973
TOTALS		**11**	**0**	**1**	**6**		
Newport News	1/10/2009	1			1	apartment/condo	Apartment Pre-1990
TOTALS		**1**	**0**	**0**	**1**		

Includes: Multifamily dwelling, Includes apartments, condos, town houses, row houses, tenements

12/3/09

US Census Bureau: Historical Census of Housing Tables: Units in Structure (ww

Units in Structure:Virginia

	1 Detached	1 Detached	1 Attached	1 Attached	2 to 4	2 to 4
	Number	Percent	Number	Percent	Number	Percent
	(					
2000	1,810,353	62.30%	279,789	9.60%	154,262	5.30%
1990*	1,531,857	61.40%	216199	8.70%	143530	5.70%
1980*	1,309,208	65.50%	128540	6.40%	142506	7.10%
1970*	1,061,247	71.50%	48374	3.30%	131162	8.80%
1960	897329	76.80%	76043	6.50%	88125	7.50%
1950*	639695	71.00%	51582	5.70%	136798	15.20%
1940*	503586	76.30%	40541	6.10%	82478	12.50%

Notes:

1990: Data are for all housing units. "Other" category intended to be living quarters sucl railroad cars, campers, vans, and caves. This category was far overstated; see the "boa etc. category in 1980 data.

1980: Counts are restricted to "year-round" housing units --seasonal and migratory vac excluded.

1970: Counts were restricted to "year-round" housing units--seasonal and migratory vac excluded. In 1970 aand earlier censuses, mobile homes had to be occupied to be cour housing units

1950: 1, Attached units in 1950 include row houses (3 or more attached houses) and se detached (2 units side-by-side; in the latter case, the units might not be completely sepa (a complete wall from basement through attic.

1940: 1, Attached units in 1940 include row houses (2 or more attached houses) and se detached (2 units side-by-side); in the latter case, the units might not be completely sep (a complete wall from basement through attic).

1940: "Other" units in 1940 include trailers, tourist cabins, and boats whose occupants l other place of residence.

US Census: 2008 American Community Survey 1-Year Estimate

Units in Structure: Virginia

	Estimate	Margin of Error	Percent	Margin of Error
Total Units	3,306,473	+/-789		
1-unit, detached	2,082,733	11,717	63.00%	0.4
1-unit, attached	337,583	7,262	10.20%	0.2
2 units	56,830	4,394	1.70%	0.1
3 or 4 units	84,885	4,947	2.60%	0.1
5 to 9 units	156,167	6,751	4.70%	0.2
10 to 19 units	191,876	6,874	5.80%	0.2
20 or more units	203,534	6,643	6.20%	0.2

w.census.gov/hhes/www/housing/census/historic/units.html)

5 or More Number	5 or More Percent	Mobile Home Number	Mobile Home Percent	Other Number	Other Percent
471,160	16.20%	185,282	6.40%	3,346	0.10%
422648	16.90%	159352	6.40%	22748	0.90%
324361	16.20%	95229	4.80%	231	0.00%
193748	13.00%	50421	3.40%		
89887	7.70%	17257	1.50%		
68700	7.60%	4508	0.50%		
20735	3.10%			12,447	1.90%

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Annual Building Permits Issued: Virginia

	Single Family Units		Duplex Structures	
	Number of Units	Cost	Number of Units	Cost
2008	20,061	$3,488,713,140	278	$25,958,234
2007	30,580	$5,580,930,272	270	$30,087,565
2006	36,992	$6,428,991,842	340	$33,756,917
2005	49,966	$8,242,451,567	516	$39,055,287
2004	48,637	$7,049,647,094	636	$52,221,357
2003*	46,326	$6,399,699,832	330	$24,169,320
2002	45,711	$5,893,176,810	556	$37,087,275
2001	41,681	$5,048,242,958	376	$22,320,067
2000	39,756	$4,621,957,205	334	$19,178,335
1999	42,069	$4,620,862,894	342	$20,273,383
1998	39,967	$4,280,226,300	436	$28,881,811
1997	35,877	$3,749,183,613	518	$34,192,290
1996	36,163	$3,534,235,336	640	$35,527,841
1995	35,271	3,389,496,117	578	27,919,309
1994	39,520	$3,700,412,232	564	$27,368,203
1993	39,409	$3,497,625,203	526	$20,930,417
1992	35,378	$2,966,205,187	546	$23,544,400
1991	29,573	$2,338,501,565	524	$19,817,935
1990	31,527	$2,443,106,525	874	$28,371,683

Weldon COOPER Center for Public Service Building Permit Data

*** 2003 Data: The totals are locality totals and not state totals. A number of localites - inlcuc estimates the missing information. The information shown in this spreadsheet includes thes The Cooper Center is attempting to contact all of these jurisdictions in order to obtain "real' this spreadsheet will be replaced.**

*** Not all localities report their building permit data every year. The Census Bureau provides**

TAB 4

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.

TAB 5

Top 25 Area of Fire Origin with Residential Structure Fires with 1 or 2 Family Dwellings, Virginia, 2004-2009 *

Area of Fire Origin	Total	Percent	Average Response Time	Total Dollar Loss	Dollar Loss Per Incident	Civilian Injuries	Civilian Deaths	Fire Service Deaths	Fire Service Injuries	Total Casualties	Casualties Per 1,000 Incidents
Heating room or area, water heater area	354	1.1%	6.93	$10,393,869	$29,361	7	0	0	8	15	42.4
Ceiling and floor assembly, crawl space between stories	333	1.0%	8.58	$13,215,078	$39,685	11	2	0	7	20	60.1
Outside areas, other	320	1.0%	7.73	$10,014,448	$31,295	11	2	0	5	18	56.3
Chimney	301	0.9%	10.29	$1,756,017	$5,834	1	2	0	0	3	10.0
Closet	218	0.7%	6.75	$4,116,929	$18,885	4	0	0	4	8	36.7
Storage areas, other	204	0.6%	6.92	$8,619,964	$42,255	4	3	0	5	12	58.8
Courtyard, patio, terrace, includes screened-in porches, excludes unenclosed porches	198	0.6%	7.32	$7,647,409	$38,623	15	0	0	3	18	90.9
Duct; includes HVAC, cable, exhaust	176	0.6%	9.38	$1,782,032	$10,125	2	2	0	3	7	39.8
Roof surface, exterior	171	0.5%	7.38	$10,814,527	$63,243	2	1	0	4	7	40.9
Entranceway, lobby	146	0.5%	7.83	$4,993,032	$34,199	7	1	0	6	14	95.9

Note: **Data is compiled from all incidents reported to the Virginia Fire Incident Reporting System (VFIRS) for 2004-2008 as of 04/06/2009 and for 2009 as of 12/22/2009.**Residential structure fires include incidents with incident type coded as 110 or 111 (Building Fires), and 113-118 (Confined Building Fires) and property use coded as 419 (1 or 2 family dwelling). For all frequency or incident counts, aid given (mutual or automatic) incidents were excluded and fire exposure incidents were included from the numbers.

Note: Incidents with negative response times (< 0), response times equal 0, or response times≥ 6 hours were excluded from the average response time calculations. Confined building fires are not required to complete the area of fire origin.

* Data for 2009 is considered preliminary since incidents are still currently being reported.

Virginia Department of Fire Programs

Top 25 Area of Fire Origin with Residential Structure Fires with 1 or 2 Family Dwellings, Virginia, 2004-2009 *

Area of Fire Origin	Total	Percent	Average Response Time	Total Dollar Loss	Dollar Loss Per Incident	Civilian Injuries	Civilian Deaths	Fire Service Deaths	Fire Service Injuries	Total Casualties	Casualties Per 1,000 Incidents
Cooking area, kitchen	4,917	15.5%	6.51	$73,625,666	$14,974	468	34	0	54	556	113.1
Undetermined	2,281	7.2%	11.51	$192,404,376	$84,351	47	49	0	100	196	85.9
Bedroom for less than five people; includes jail or prison cells, lockups, patient rooms, sleeping areas	1,996	6.3%	7.00	$74,030,490	$37,089	221	41	0	86	348	174.3
Common room, den, family room, living room, lounge, music room, recreation room, sitting room	897	2.8%	8.21	$35,790,660	$39,900	65	38	0	32	135	150.5
Area of fire origin, other	861	2.7%	9.51	$15,244,890	$17,706	10	5	0	3	18	20.9
Attic; vacant, crawl space above top story; includes cupola, concealed roof/ceiling space, steeple	835	2.6%	7.47	$43,964,704	$52,652	15	0	0	32	47	56.3
Laundry area, wash house (laundry)	819	2.6%	6.73	$15,849,775	$19,353	35	7	0	6	48	58.6
Function areas, other	720	2.3%	8.07	$32,447,749	$45,066	55	45	0	14	114	158.3
Wall assembly, concealed wall space	714	2.2%	8.18	$16,132,426	$22,594	13	2	0	13	28	39.2
Structural areas, other	711	2.2%	8.93	$22,826,668	$32,105	16	10	2	19	47	66.1
Wall surface, exterior	698	2.2%	7.10	$15,415,463	$22,085	6	0	0	7	13	18.6
Exterior balcony, unenclosed porch; excludes enclosed porches	525	1.7%	7.14	$19,420,320	$36,991	28	3	0	14	45	85.7
Vehicle storage area: garage, carport	511	1.6%	7.65	$42,216,083	$82,615	21	1	0	28	50	97.8
Bathroom, checkroom, lavatory, locker room, powder room, outhouse, portable toilet, sauna area	465	1.5%	7.20	$8,605,803	$18,507	23	0	0	2	25	53.8
Substructure area or space, crawl space	436	1.4%	7.25	$13,001,701	$29,820	13	4	0	17	34	78.0

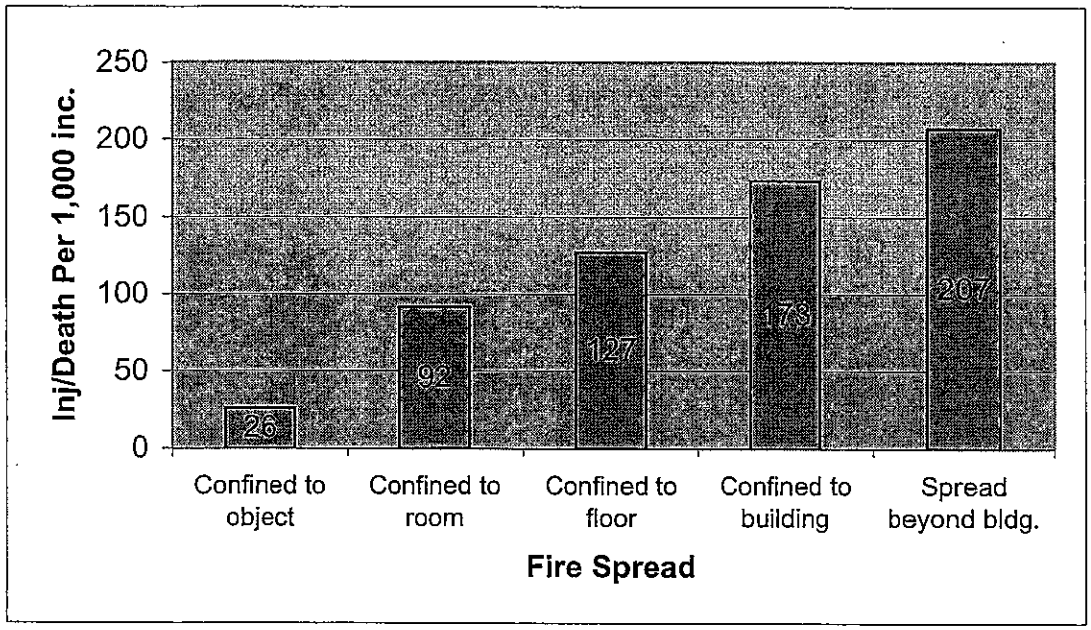
Virginia Residential Building Fires
In 1-or-2 Family Dwellings

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
pread 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

TAB 6

-Residential Fire Sprinkler Update-

State-by-State Status of the 2009 IRC Adoption

Alabama	
Alaska	
Arizona	
Arkansas	Effective October 1st, 2009 the Arkansas State Police signed a rule that fire sprinklers in new one (1) and two (1) family Arkansas dwellings would not be a state-mandated requirement now (nor in the next edition of the Arkansas Fire Prevention Code Rules, likely to be the *2012 Edition*).
California	
Colorado	
Connecticut	
Delaware	
District of Columbia	
Florida	
Georgia	
Hawaii	
Idaho	Passed Legislation that will exempt the state to adopt any portion of a nationally recognized code that will mandates residential sprinklers in one- and two-family dwellings and other similar residential occupancies.
Illinois	
Indiana	The Indiana residential code review committee is still in the process of reviewing the *2009 International Residential Code*
Iowa	
Kansas	
Kentucky	
Louisiana	
Maine	
Maryland	Moving Forward with the adoption of the 2009 IRC without amending residential fire sprinklers. Local jurisdictions will still have the ability to amend state code.
Massachusetts	
Michigan	
Minnesota	The Minnesota Department of Labor and Industry issued a regulatory letter indicating that the state would not be adopting the 2009 International Codes in an effort to reduce the budget.
Mississippi	
Missouri	State Legislation was passed that would not require residential sprinklers in new home, but would require the home builder provide the potential homebuyer the option.
Montana	
Nebraska	
Nevada	
New Hampshire	New Hampshire State Building Code Review Board voted to adopt the IRC effective April 1, 2012. There is legislation filed for the 2010 session, prohibiting the state building code, or any local amendment, from including a mandatory fire sprinkler system requirement for residential construction.

New Jersey	Code Review Board voted to adopt the IRC and amended the residential sprinkler requirement for one- and two- family dwellings to have an effective date of January 1, 2012.
New Mexico	
New York	
North Carolina	
North Dakota	Passed Legislation that will not permit the state to adopt any portion of a nationally recognized code that will mandates residential sprinklers in one- and two-family dwellings.
Ohio	
Oklahoma	
Oregon	
Pennsylvania	
Rhode Island	
South Carolina	
South Dakota	
Tennessee	
Texas	Passed Legislation that will not permit the state to adopt any portion of a nationally recognized code that will mandates residential sprinklers in one- and two-family dwellings
Utah	Passed legislation to provide greater representation from the housing industry on the State Building Code Review Committee.
Vermont	
Virginia	At the Board of Housing and Community Development meeting in July 2009, the board adopted proposed regulations which deleted the sprinkler provisions of the 2009 edition of the International Residential Code, and added language of "where installed" the systems would be installed in accordance with either the NFPA 13D Standard or the P2904 provisions of the plumbing code.
Washington	On November 12, 2009 the Council completed adoption of the 2009 International Building, Residential, Mechanical and Fire Codes and the 2009 Uniform Plumbing Code. These codes, with state amendments, will be effective on July 1, 2010.The Council amended the 2009 IRC Section 313: Automatic Fire Sprinklers, moving this section to an appendix, pre-approved for local adoption
West Virginia	
Wisconsin	
Wyoming	

TAB 7

DHCD, DBFR 2009 Code Change Process

Results of the April 9, 2009 Workgroup 4 Meeting

USBC/International Residential Code (IRC)

2009 USBC/IRC technical amendments:

1. USBC 202 Story above grade: Delete in IRC. Is there a consensus to delete and use IRC? (no handout)

2. USBC subsoil drains: Delete in IRC. Is there a consensus to delete and use IRC? (no handout)

3. USBC/R302.1 Exterior: Delete USBC as in IRC. Is there a consensus to delete and use IRC? (page 50)

   Items 1-3 above, state amendments should be able to be deleted to use 2009 IRC. Staff will double check and do as part of USBC base document. Removed from workgroup agenda.

4. USBC R302.1 and table: Henrico townhomes with porches and rating required discuss to see if changes necessary in USBC and at ICC IRC. In this matter homes were sprinkled based on local proffers. (page 8)

   Would be an IBC issue for Group R-3 and will be IRC issue if 2009 requires sprinklers. To comply with 13D, do porches have to be sprinklered? Further discussion at next workgroup meeting. Will be forwarded to the sub-workgroup (Residential Sprinkler Ad Hoc Task Group) if not resolved.

5. USBC/R310.1 Emergency openings: USBC amend to match IRC, but likely need to keep amended USBC due to sprinkler exception. Is there a consensus to amend USBC and move forward? (no handout)

   This existing USBC sprinkler trade-off will be kept in 2009 code unless a proposal is received to delete it. Kept on workgroup agenda for one more meeting.

6. USBC/R317 Two family dwellings: Review dependent on sprinkler issue and could be the example and basis for incentives as option for sprinklers in Exceptions 1 and 2. Amend 13 to 13D? Why would you do 13 for IRC 2 family building? Need to clarify that one hour is okay or not for lot line? Is there a consensus to retain or amend? (page 49)

   DHCD staff to review 2009 IRC for correlation with new SFD sprinkler provisions. State amendment was only to clarify that no lot line could be present in duplexes.

Will keep on workgroup agenda and will be forwarded to the sub-workgroup (Residential Sprinkler Ad Hoc Task Group).

7. USBC R326, 327, 328 Appendices G, H, K: Retain in 2009 USBC. Entrapment standard approved for pools. IRC AG106.1 and G24441: Standard for pool entrapment. Is there a consensus to move forward as further improvement over the 2006 CSPC retrofit? How will this be implemented? Is there a consensus to require retrofitting of existing pools? Swimming pool barrier covers: AG105.5 amend to allow as does the IBC 3109.4. Above-grade pools and issues with 4 foot barrier requirements being met by the pool side wall? (page 9)

8. USBC T404: Delete in IRC. Is there a consensus to delete? (no handout)

Items 7 and 8 above were discussed and no significant issues raised. Removed from workgroup agenda.

9. USBC 401.1 Exception: Keep in 2009 USBC? Is there a consensus to keep? (no handout)

Use of wood foundations in IRC. Was not clearly discussed; DHCD staff will review 2009 IRC and bring back to workgroup if any issues identified.

10. USBC 401.3: Chesterfield - first sentence used to drain entire lot versus protecting foundation that is what section covers. Needs clarification? Code change submitted from the builder. Is there a consensus to amend or retain as is this section? (page 11)

New proposals received; will be in next workgroup package.

11. IRC 401.4, 403.1.8.1 items 1-4: See PWC policy as basis for ICC and USBC code change where plasticity is 20 or less. Discussion only. (page 18)

12. USBC R502.2.2.1 Deck Ledger: Delete in IRC. Is there a consensus to delete? (no handout)

13. USBC 602.10 Wall bracing: Delete in IRC. Are there parts to retain? Is there a consensus to delete or amend to retain some sections? (page 19)

Items 11-13 above; no further action necessary unless proposals received.

14. USBC R613.2 Window sills: Retain or amend per IRC? Increased sill height from 24 inches to 36 inches and our USBC 18 inches, but provided several exceptions to consider? Is there a consensus to retain, amend or delete? (page 21)

State amendment will be retained in 2009 USBC.

15. USBC P3202 Sub-drain: Delete in IRC-P. Is there a consensus to delete? (no handout)

16. USBC P3007: Delete in IRC. Is there a consensus to delete? (no handout)

17. USBC P2903.5 Water hammer: Retain. Denied at ICC again. Is there a consensus to retain? (no handout)

18. USBC P3002.2.1 Tracer wire: Coordinate with IPC to fix glitch in version used. Is there a consensus to amend IPC and IRC versions to match? (no handout)

    Items 15-18 above; DHCD staff to correlate existing state amendments in 2009 IRC for USBC base document.

19. USBC G2411.1 CSST: Is there a consensus to retain, amend or delete? (no handout)

    DHCD staff to review 2009 IRC and NFPA 54 and report back to workgroup. Others may submit proposal for consideration.

20. USBC M1801.1.1: Delete? Is there a consensus to delete or retain? (no handout)

21. USBC G2425.1: Deal with inspections and should they be relocated into USBC inspection section? Discussion only. (no handout)

    Items 20 and 21 above; state amendments will be retained; no additional issued raised; removed from workgroup agenda.

22. USBC R506.2.1 and 506.2.2 Slag: Delete or retain? Covered by standards. Is there a consensus to delete or retain? (no handout)

    Somewhat of agreement to delete state amendment; will need someone to submit proposal.

23. IRC 313.1: New that where security alarm/combination smoke alarms systems are installed to comply with IRC smoke alarm requirements the system shall be supervised. The proponent's intent in testimony was making the owner responsible to then maintain the system and the fire official could do a NOV if they didn't where reported by the alarm company for bill not being paid so system would be shut down thereby having no operable smoke alarms required by the IRC. How will this work in USBC/SFPC? SFPC no periodic inspections for IRC? Should USBC and SFPC code officials be involved between contractual matters? Is there a consensus to delete, amend or forward? Need to review USBC administrative section 103.5 with IRC mandate that existing homes would get smoke detectors whenever a permit is issued. Currently, state law allows localities to do by local ordinances and IRC retrofit provisions not enforceable under the USBC. (page 23)

    DHCD staff to provide 2009 IRC language for next meeting, supervision of alarm systems for SFDs is problematic.

24. IRC 602.10: Eastern shore building official and one builder would like to see a prescriptive wall bracing method instead of requirement for engineered plans that are costly for that rural

Collaborative proposal to be submitted or further discussed at next workgroup meeting.

25. IRC M2005.2 Water heaters: Cannot put in storage closets. AGA wanted to allow if met space and ventilation rates? VBCOA/VPMIA opposed. Is it clear what constitutes a storage closet? Open basement, most often used for storage, and then permit for recreation space. A water heater and furnace in a mechanical room meeting size and make-up air but is also used for storage of all sorts of things such as Christmas/seasonal decorations, furniture, clothes, etc. Is this a storage closet? Discussion only. (no handout)

    2009 IRC language OK, remove from workgroup agenda.

26. IRC N1101.7, N1101.8 and in IECC duct testing and air barrier testing and special inspections: Should USBC delete N1101.7 Above code and 1101.8 certificate with R and U values? Both are USBC administrative matters as modification function for "above code" and "certificate" could be under final inspection of permits and CO? Is there a consensus to retain or amend/delete? Note as energy changes being discussed in Work Group 1. (no handout)

    Also a Workgroup 1 (Energy) issue; DHCD staff will draft language to permit the use of energy administrative provisions and will be further discussed in both workgroups.

27. IRC E210 and 220 Arc-fault devices: 2008 NEC requires all dwelling units' circuits to be on arc-fault protection where now only bedrooms are required. Ten states have adopted the measure. Cost to install these breakers in the 100amp service panel is 200-300 dollars more than standard breakers. Proponents cite 400-500 deaths per year so some of these would be saved down the road from nearly 2,400 lives lost from fires in IRC dwelling units. Is there a consensus to move forward, amend to leave for bedrooms or delete? Also, required child protective covers which have the higher cost. How often do these covers need to be replaced? (page 30)

    Was also considered in Workgroup 3 (USBC/SPFC Technical Amendments), opposed by multi-family housing industry, homebuilders, supported by IAEI. Different cost estimates. If not to be implemented, a proposal to delete must be submitted. Further discussion at next workgroup meeting.

28. IRC 313 Smoke Alarms: Need only be listed and can use photoelectric or ionization types. Both can be effective in proper location was conclusion of a FEMA report. One is better for smoldering fires while other for flaming fires. Several deaths reported nationwide where one

Good discussion and information provided. No further action at this time.

29. IRC 313.1.1, 313.1.2 CO alarms: New requirement for CO alarms in IRC with fuel-fired appliances only not in IBC as no code change was up for a vote. Would it include electric house with fireplaces? Would be located in 'sleeping areas near bedrooms? So can one work if bedrooms on one floor? If bedrooms are on other floors, would you need one on each floor? Would you need more than on CO alarm if bedrooms are on the same floor but two bedrooms are down the hall and a master bedroom at the other end? Would you use the manufacturer's instructions to determine how many you need? Proponents were asked and felt you would need more than one per floor. Is the IRC code change concise and clear requirement for the prescriptive IRC? Is there a consensus to move forward, amend, delete? Also, requires existing CO alarms whenever a permit is issues. Need to delete in USBC? Is there a consensus to delete? (page 36)

    DHCD staff to review new IRC provisions for problems and retrofit aspects. Further discussion at next workgroup meeting.

30. USBC/MHSR: Review what is under Work Group 2 on clarifying duties and what regulations are enforced more clearly and will be part of specialized training for installers and inspectors. (page 38)

    Was also considered by Workgroup 2 (Administrative), to conform to new Federal laws and regulations. Staff proposals to move forward.

31. Loudoun fire official asked about prohibiting new GP truss system. Wouldn't be able to do so unless deemed not structurally safe. Lightweight framing issue. (page 52)

    Information and data received for next workgroup meeting and will be forwarded to the sub-workgroup (Residential Sprinkler Ad Hoc Task Group).

32. Gray water and rainwater harvesting discussion and moving appendix into the IRC? (no handout)

    Proposal from VPMIA/VBCOA? for moving appendix on gray water into body of IRC. Further discussion of rainwater and reclaimed water at next workgroup meeting and in Workgroup 3 (USBC/SPFC Technical Amendments).

33. IRC chapter 11 differences between IRC and IECC? (no handout)

    Comparison received and will be further discussed at next workgroup meeting.

Sprinkler discussion: this will be held at the April 9th meeting but then carried over for decision on consensus at the May 13th: (page 40)

Good general discussion. Will continue to collect information and form a sub-workgroup (Residential Sprinkler Ad Hoc Task Group). Membership to be comprised of AIA, HBAV, VBCOA, VPMIA, VFPA, VFCA, VPFF, AFPA, SFMO, sprinkler contractor, plumbing contractor, manufactured housing rep. Sub-workgroup to be organized with meetings late April, May and early June if possible. Issues include cost, affordable housing, water supply, incentives, timing, education, passive construction improvements, fire fighter safety, light frame construction, tradeoffs, future community infrastructure and fire department changes.

Suggested Order and Tentative Agenda Items for May 13, 2009 Workgroup Meeting

1. IRC R302.1 – Fire protection of decks in sprinklered SFDs and townhomes.
2. USBC/IRC R310.1 – Basement egress sprinkler tradeoff.
3. USBC/IRC R317 – Duplex sprinklers for proffers and tradeoffs.
4. IRC R401.3 – Drainage on lots.
5. USBC/IRC G2411.1 – CSST.
6. IRC R313.1– Supervised alarm systems.
7. IRC R602.10 – Eastern shore engineered design.
8. IRC Energy.
9. IRC Arc fault.
10. IRC CO alarms.
11. IRC Gray water.
12. IRC Sprinkler issues.

*** **Reminder*****

Work Group 4's next meeting will be May 13, 2009 at 9:30 a.m. at DHCD, 501 North 2nd Street, Richmond, VA in the 1st floor Board Room.

CODE UPDATE WORKGROUP 4, APRIL 9, 2009
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DHCD, DBFR 2009 Code Change Process

Summary of June 3, 2009
Workgroup 4 Sub-Workgroup on Residential Sprinklers Meeting

CODE ISSUES:

1. 2009 IRC provisions

   The IRC R313 mandate for sprinklers in townhomes and one and two family dwellings was discussed by the group. The effective date in the IRC would not be valid in the 2009 USBC. The BHCD sets the effective date and could set an enactment date. There was also discussion that for townhomes both 13D and P2904 could be used to install sprinklers.

2. ICC changes

   ICC code changes that were either denied or withdrawn were discussed for the purpose of allowing attendees to be aware of what other options had been explored at the ICC level for incentives and only requiring townhomes to be sprinkled. Some of the incentives noted were allowing townhomes with a current two hour fire wall requirement to be reduced to a one hour fire wall and for one and two family dwellings, the consideration of reduced fire separation distances, deleting emergency egress openings, reducing smoke detectors and allowing more glazing.

3. Manufactured Homes

   There was discussion on the fact that manufactured homes are sold primarily in rural areas. No code changes to include manufactured homes have been submitted to date, nor did any of the attendees speak in favor of such a mandate. At the last meeting a representative from the industry spoke against including these homes in the mandate. Ron Dunlap, Executive Director of the VMMHA, was present and indicated VMMHA would oppose a code change for this mandate if one is submitted.

DISCUSSION - OPTIONS:

The following options were discussed during the course of the meeting:

Mandatory with a delayed implementation date:

No consensus was reached on this option.

Deleting the mandate completely:

A code change has been submitted for the deletion by HBAV. Proponents felt this was necessary due to cost and a lack of evidence that the mandate will

have a significant impact on fire related deaths. Opponents of the code change disagreed and expressed the belief that the mandate will reduce the number of deaths (38 civilians and two firefighters over the past nine years) and injuries. No consensus was reached on this option.

Mandatory with incentives available to offset costs:

No consensus was reached on this option. It was noted that the Sprinkler Coalition will be discussing this possible incentives at their June 8th meeting.

Non-mandatory with or without incentives:

A code change has been submitted for this by HBAV. No consensus was reached on this option.

Passive construction improvements:

Possible options, such as requiring Type X gypsum on ceilings to protect joists and trusses from early failure were discussed. This option would allow occupants more time to exit and the cost would be substantially less than sprinkling. This would give firefighters additional time for rescue. No consensus was reached on this option.

Changing the mandate to require sprinklers for townhomes only, deleting the requirement for one and two family dwellings:

Proponents of this option stated that this would be beneficial for the safety of individuals residing townhomes that are three or less stories, since sprinklers are now required only in those townhomes that are four or more stories. There was a discussion on the possibility of offering incentives for townhomes, such as a reduction in the fire wall. This was opposed by parties who felt these incentives would reduce the fire safety in adjacent homes. No consensus was reached on this option.

Fire Data and Recent Fires in Prince William and Loudoun Counties:

Representatives from Prince William County and Loudoun County gave a presentation regarding recent fires in those localities. Part of the presentation noted new fire data showing that the burn time of contents has been reduced from 17 minutes to three to four minutes. The representatives pointed to a number of reasons for this reduction, including highly flammable furniture, carpeting and other materials. It was also noted that changes in house styles, floor plans and construction methods have contributed to homes burning faster.

The group discussed causes of home fires, including the top five, which are smoking, cooking, electrical, open flames (candles) and heating equipment/fireplaces.

OTHER FACTORS

1. Water fees

   Fire services representatives indicated they are engaging local water purveyors and feel this issue might not have the adverse cost impact as previously thought for one or two story homes, especially for homes sprinkled under P2904 using the same piping as the potable water supply.

2. Lightweight construction

   There was discussion concerning whether or not improvements were necessary. Proponents of improvements stated that firefighter safety is a concern with this type of construction. Opponents stated that the associated costs would be high and would be passed on to the consumer. It was also stated that this type construction has resulted from a push to build more environmentally friendly buildings.

3. Fire-safe cigarettes

   Legislation has been adopted requiring fire-safe cigarettes. NFPA indicated fire-proof cigarettes and arc-fault devices could reduce deaths per year (currently, there are between 800 – 1000) over a period of time. There was discussion as to the potential number of lives that could be saved in Virginia alone (possible 10, based on the national figures).

4. Arc fault devices

   The group discussed what impact the arc-fault devices will have on home fires (refer to item 3).

5. Insurance

   The group discussed the impact of insurance companies paying claims for homes that were totally lost to fire as opposed to paying for clean up for water damage, possible mold, etc. that could result from sprinklers.

6. Cost data

   There was a lengthy discussion on the cost impact on affordable housing versus the possible significant reduction in deaths, injuries and property losses. There was discussion on how long it would take (10 years, 20 years or more) for data to be available that would demonstrate the number of lives and or homes saved. Fire services representatives believe cost is not the key issue in the debate. They pointed out that there can be community infrastructure savings, such as a reduced need to build additional fire stations and purchase costly fire trucks and other equipment. They further stated that if an entire community was sprinkled, narrower roads, increased spacing for fire hydrants and other community cost reductions could be put into place.

   Builders expressed the viewpoint that cost was an important consideration for this and all other mandates being imposed in the 2009 model codes, including energy

measures. It was stated that even though the cost of a sprinkler system, amortized over the loan period, may appear to be insignificant, the more important factor is individuals being able to qualify for a home where construction costs have to be increased thousands of dollars.

The group discussed costs with a lot of debate over the methods used to calculate installation and maintenance cost for sprinklers. Fire services representatives pointed out that overall community costs must be taken in to consideration. These include funds that would be saved by fire departments with respect to having fewer large fire incidents, funds saved by localities for insurance payouts to families of firefighters lost, continued medical insurance/disability costs for disabled firefighters, and the earlier mentioned reduction in the need for additional fire stations and equipment, along with the reduction in property losses if sprinklers are required.

Builders stated there would be a significant cost impact on families buying their first home. An estimate from staff indicates a possible range from $1.61 to $2.55 per square foot as averages for installation of sprinklers, recognizing that Northern Virginia homes are generally larger with more stories and higher ceilings and there are higher labor rates, which would mean homes in that area may cost over $2.00 per square foot. It was stated that rural communities on wells will have significantly higher costs (over $2.00). There was much discussion as to what the actual cost increase for homes with well/septic systems would be. The staff estimate indicates that most of the rest of the state would be at the lower range (below $2.00) and, assuming there would not be hook-up fees, the cost range would be $3200 to $5100 for a 2,000 square foot home. Again, these figures were debated and different parties felt the costs would be either higher or lower.

7. Educational efforts and operational practices

An analogy was given that, prior to the law being passed requiring seat belts be worn, many efforts had been made to educate the public on the safety benefit of wearing seat belts. Yet, vehicle accident deaths remained high and many motorists did not wear seat belts. Once the law was passed, deaths were dramatically reduced. The analogy was that the same general principal could be used with respect to the sprinkler issue; though people might know sprinklers can save lives, many will not have them installed in their homes unless it is mandated.

Builders disagreed and stated that newer homes will not have the same fire records as older homes so the seatbelt comparison was incorrect. They pointed out that since the IRC inception, homes built after 2000 have hard-wired/battery back-up smoke detectors and better fire stop requirements. Fire officials believe new homes will have the same fire records and that those fires will give occupants less time to exit as owners/tenants are buying furnishings, etc. with more flammable materials. VDFP data doesn't include the age of homes, but does indicate if smoke detectors were present and were operable (whether or not the occupants stated they heard the detectors).

Builders expressed the view that other, less expensive options might be viable, such as public education and requiring all existing homes to have smoke detectors.

8. Current USBC Group R-2 Exemption

A code change is planned to be submitted to delete the USBC IBC903.2.7 exemption for R-2 apartment buildings two story and 16 dwelling unit or less, where there is not adequate volume and pressure of water.

NEW BUSINESS

There was a discussion on the need for periodic inspections to detect damaged heads or piping and painting of sprinkler heads. Opponents of the sprinkler mandate felt that significant costs could be incurred for repair/maintenance of sprinklers. It was also stated that there could be potential liability issues if a home is sprinkled and the system fails due to lack of maintenance. Fire services representatives disagreed and stated that the maintenance issue would be no larger than with current potable water systems and home appliances.

No further meetings are planned as proponents/opponents were unable to reach a consensus on any of the options discussed.

For now the BHCD's Codes and Standards Committee has these choices: 1) to allow the IRC sprinkler mandate to stand; 2) to delete the mandate; 3) to amend the mandate to optional; and, 4) to select from other options.

SUB GROUP – SPRINKLERS

JUNE 3, 2009.

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10-2-09

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 Summary

1. **Manufactured Homes: Attendees discussed manufactured housing being exempted for mandated sprinklers. Without any opposition this will be off-the-table as a consensus item.**

2. **Fire causes:** Discussed the top causes of home fires. Besides the largest percentage being undetermined, the top causes were smoking, cooking, electrical, heating/fireplaces and candles/playing with matches. These causes are consistent at NFPA and VFIRS data bases.

3. **Data:** Discussed what data might be useful to have before the BHCD that would include age of dwellings and fires in townhomes versus detached homes. Builders want both data fields as they believe homes built from 1996 onward will be safer with less deaths, injuries and property damages. Fire representatives indicated that type of data is unavailable and isn't specifically reported to the VFIRS fire reporting system maintained by the VDFP. Builders believe this data would support their reasons to leave the sprinkler systems as an option. Builders say that new code requirements for GFI's, arc-fault devices, hard-wired smoke detectors, firestopping, less leakage of outside air due to energy provisions making fire propagation less likely and non-building items like fire-safe cigarettes. Builders believe other passive measures can do just as much for improved life safety at less cost than sprinklers. Builders cited incentives and some code measures they could support. Builders noted that the number of deaths in home fires have been decreasing or at least have been stable over the past decade despite nationally millions of new homes and millions in population growth. Fire officials see new furnishings with higher flashover potential and lightweight frame construction as potential problems that only sprinklers can effectively solve and not passive measures. They cited a NIST study where flashover had decreased exiting time from 17 minutes to as little as 3 minutes. Staff is attaching the summary VDFP 2000-2008 Summary Sheet for 1&2 family fires; a 2000 Census sheet on Virginia showing 2.9 million as the total number of housing units that is now 3.3 million in 2009 with nearly 2.1 being detached home and 189,000 manufactured homes; and, the 2009 VDFP 6 months summary for all fires in Virginia.

4. **Passive measures:** Arc-fault devices are required in the 2009 IRC for habitable areas that is an expansion from the bedroom requirements in the 2006 USBC. NFPA and the electrical industry estimate upwards to 200 lives could be saved over time; retrofitting battery smoke detectors in all existing homes has an estimated potential to save 600 lives per year nationally; and, finally fire safe cigarettes has an estimated potential to save 600 lives per year nationally. Staff notes there are 2400 lives lost yearly in 1&2 family homes. During the past 9-years in Virginia, there has been an

average of 40 deaths per year occurring in homes. HBAV does have a code change to not move forward on the arc-fault devices at this time. Cost for these additional new arc-fault devices is estimated from $200 to $600 per home. Virginia has a law that allows localities to require retrofitting of battery smoke detectors. Many have done so, but not all. Effective July 1, 2009 all cigarettes sold here had to be the fire-safe cigarettes. If the experts are correct, and so if these measures were fully implemented, Virginia should see in the next 10 years some significant reductions in lives lost and reduced injuries? Do the stakeholders agree or disagree? Discussion item at next meeting.

5. **Costs-Benefits:** Disagreement continues. Most would agree cost will be higher when well-water needs to be utilized - that additional cost appears to be somewhere between $500 and $1,000 based on input from the well-water contractors. R2904 will make sprinkler cost less as a designed system becomes unnecessary, thus saving the cost of a design professional to seal the construction plans and shop drawings. Somewhere between $3,200 and $5,200 seems to be the average cost point for installation of a sprinkler system in a 2,000 s.f. home/townhome. This average cost would include in most instances the cross-connection device required by the USBC and local water purveyors. There are some evidences that local hook-up fees will be reasonable and not thousands of dollars or will there be separate fire lines to be required that is the case in commercial and multi-family buildings. There has been discussion on insurance rate reductions. The VRSC did have an insurance representative at their early meeting that indicated savings could be possible, but it would be on a case-by-case basis and not over a broad spectrum of housing that was similar to testimony presented in 2008 before the Virginia Housing Commission when the VHC was reviewing legislation to mandate retrofitting of high-rise buildings. To date the mandate for sprinklers is for townhomes. Would it be fair to say that in normal economic times for homebuilding, there are 20,000 homes built and 4,000 are townhomes (25%)? Would the added construction cost for mandated townhome sprinklers be around $3,000 so then the total added cost would be $12 million dollars per year. Would be on next agenda. The BHCD wants to know how the incentives for sprinklers offset the additional costs. What are then ongoing maintenance costs or where localities require annually cross-connection inspections? What is the cost-benefit of mandating sprinklers for IRC built homes over 10, 20 or 30 years? Is the NIST report realistic and how does it address the potential outcomes for save lives and injuries and reduction in property damages or the current IRC requirements and passive measures? Likewise, the same analysis would be necessary for the proposals put forth by the builders.

6. **Problem to solve and goals:** The problem to solve and the goal is to reduce deaths, injuries and property damage. No agreement was reached in this critical area. At our next meeting should stakeholders attempt to reach a 50% goal and target in 10 years or 75% in 20 years to reduce lives lost, injuries and property damage? How do the code changes and options on the table and under discussions from both sides meet these targets in terms of effectiveness, implementation, the prioritization of finite dollar resources being available, the impact on housing options and affordability, the

use of incentives to offset installation costs and estimates on maintenance costs? Can the stakeholders reach a consensus? Is there a need to bring into the discussions on the IRC sprinkler mandate such other factors that includes public education, the local enforcement efforts and the adoption of the USBC maintenance code and the SFPC? There are ICC/IRC 2012 code change hearing for signage on homes regarding construction materials; for townhomes at 3 stories to be sprinkled and not at 1 or 2 stories; for optional sprinklers and for protection of floor and roof joists and trusses. Stakeholders need to review these code changes for their impact on your viewpoints and what, if any, do we need to consider for the 2009 USBC? These will be discussed at the next meeting. Is this a grand opportunity for local code officials and governments to partner with builders in a collaborative effort to pass local smoke detector ordinances and to educate homeowners and tenants on sprinklers, smoke detectors and fire prevention/emergency evacuation planning? Is this the time for increasing the issuance of free smoke detectors to the low-income families and the elderly?

7. Here are the code changes and proposals offered by the VRSC and the builders:

Builders:

- Optional sprinklers
- Collaborative efforts to support local fire prevention education and increased enforcement
- Collaboration and commitment to have HBAV members to put forth in sale materials the sprinkler option
- Fire extinguishers for kitchens as a USBC requirement. A code change submittal would be needed. Foreign countries with better home fire records have this requirement.
- Retroactive smoke detectors for existing homes. Local ordinances would be needed.
- Labeling for lightweight framing-2012 IRC code change
- Consider the protection of trusses and floor joists with ½ hour gysum-2012 IRC code change. Addresses concerns on lightweight framing collapsing prematurely.
- Consider to allow home inspections related to fire protection and alarm devices. Would be done by modifying the SFPC 109.1 Exception
- Arc-fault devices for bedrooms. The 2008 IRC/NEC requires arc-fault devices for other habitable rooms for the proposed 2009 USBC. HBAV has a code change submitted to retain only for bedrooms believing that the devices are costly and there needs to be more time to see if they are dependable.
- Fire-proof cigarettes would positively impact one of the major causes of home fires that being smoking.

VRSC:

- Mandate townhome sprinklers with several incentives of 2 to 1 hour fire wall. Code change submitted. Not a consensus on R313.1 and 313.2 to do only townhomes and not detached homes. VRSC noted this is a major concession from where they were this spring and were disappointed the builders had only

suggestions on passive measures. VRSC noted for consensus there needs to be give and take. Builders believe doing optional sprinklers is the best approach noting only 1 state out of 17 or so have even approved the IRC sprinklers in the adoption of their state codes.

- Code changes to add into the SFPC the IFC appendices for reduced fire flow, fire hydrants and access road widths for sprinkling of a development that would be done by local ordinances not through the SFPC. Not a consensus on F503.2.1 to put into SFPC appendix on fire access roads that can be reduced to 18 feet. Should the submitted VRSC code changes in these three areas be amended to also include there applicability to any development of detached homes that are fully sprinkled? Staff notes for state uniformity and consistency these code changes could be in the SFPC F503 .2.1 section instead of being permissive based on local adoption. All code changes would still have to be coordinated with local policies that might not allow the reductions. VRSC concern to have these code changes in the SFPC was that now some localities already are different. Will remain on table for discussion. Need to evaluate what and how to consider these code changes as incentives or cost offsets.
- Support and agree that passive construction elements still need to be done too, such as protection of lightweight frame construction to minimize flashovers and early collapses of these structural members. Passive measures or warning families to evacuate should not be considered a substitute for sprinklers.
- Support arc-fault devices for all habitable rooms.
- **Consensus to move forward adding P2904 to the R310.1 Exemption as a system that can be used for credit to not have second means of egress in basement with a bedroom.**
- **Consensus to move forward with tweaking of TR302.1 footnote 1 on the fire separation distance moved from 5 to 3 feet. Not likely to have major impact as most zoning ordinances require more anyway, but in some cases is a plus and works with optional sprinklers too where the development is sprinkled by proffers. Shahriar to clarify.**

Builders didn't support any sprinkler mandate, noting townhomes will not have much of impact on reducing deaths, injuries and property damage since they are protected with fire walls and projections require ratings now. Does the unavailability of fire data pose a problem to the stakeholders in reaching a consensus? Builders see that installing and requiring smoke detectors in existing homes is the most economical and the best life safety measure in a far less time frame to save lives, reduce injuries and property damage over the next 10-20 years. Staff would ask HBAV to provide some costs on what it might take to have all existing homes have at least installed 1or 2 smoke detectors such as $60-$80? If it was assumed that there are 1 million homes without smoke detectors, then the cost would be 6-8 million dollars. What might be the outcome to see in 10 or 20 years from the adoption of such retrofit local ordinances or a change to state law for a statewide mandate? Builders noted a report by NFPA on smoke detectors that showed an effectiveness of over 90% getting residents warned of a fire.

The VRSC noted in many urban and suburban localities townhome builders sprinkle them now without any adverse impacts to sales and because some are R-3 IBC townhomes, they are already required to be sprinkled. Townhomes with 4-8 homes connected, even with a fire wall, does have a potentially higher risk factor much like smaller 2-3 story apartments. The NIST study is attached as support from the VRSC on the cost-benefit of mandated sprinklers. Builders counter that every 1,000 dollars added to the base price of a home kicks out purchasers and does the most harm for affordable housing and first time buyers as opposed to the more affluent home buyers. The VRSC members disputed the NFPA smoke detector report noting there is a follow-up report saying the NAHB has misapplied the findings.
One fire official at the end of the meeting thought that a 50% goal might be reasonable to establish. At the next meeting need to have this discussion on the problem solving, the cost and outcomes expected in some period of time as the BHCD members are asking staff for this information as are the Virginia Housing Commission members from a September 29th meeting. Does the NIST report conclude what would be the period of time necessary to see mandated sprinklers produce a significant decrease in lives saved, injuries and property damage in comparison to smoke detectors and other IRC building and life safety measures already adopted or might be adopted would be a discussion item for the next meeting.

8. **Sprinklers on well water systems:** Parties agree there will be some increased costs for sprinklers installed off a well-water system even when townhomes are involved and there is a common water supply that is regulated by VDH. Estimates are that the cost impact could be a few hundred dollars to a few thousand dollars. Shahriar Amiri noted that prices in Montgomery were typically $600 to $1,000 over the sprinkler costs. Well-water representatives will search for some cost data that might be incurred for the need for a pump size increase and to have installed a holding tank of 260 gallons.

9. **ICC code changes 2012:** RB19 takes fire distance separation from 5 feet to 3 feet. RB22 would add back the 2 hour fire wall from 1 hour; and, RB 31 does the ½ hour gypsum to protect joists and trusses. There are a block of code changes that drops the mandatory to optional sprinklers and to do only 3 story townhomes.

10. **Submitted code change by Mr. Gill: Code change to sprinkle if over 7500 square feet; two stories or if not 40 feet separation. No support. Will be off the table.**

11. **Other alternatives:** Mr. Whitney presented information on a fire extinguisher for kitchens for $25 or less and a device tied to the smoke detectors and thermostats to shut down the HVAC fan system in the $200 range. Would need code changes to be considered by the BHCD.

12. **Staff Comments:**

Actually, just the continuation of the dialogue by the stakeholders is a significant achievement from the 2009 spring discussions so hats off to the representative of each group of stakeholders to stick in there and being willing to meet. There has been progress, opening of areas for partnership and real viable options placed on-the-table for the BHCD to deliberate upon next year.

- The focus on townhomes to be sprinkled and leaving the detached homes optional opens the possibility to explore an amendment that both parties might at least want to consider. By not requiring sprinklers for manufactured housing or detached homes, would it make any sense to pick up on a current USBC amendment that states for 16 or less and 2 stories without sufficient water volume of pressure, no sprinklers are required. What if the townhome sprinkler mandate was only for those on a public water system or a VDH community well-water system and 3-story townhomes? This would then mean for the most part that townhomes in the urban and suburban areas would be the first to have a sprinkler mandate. The VRSC members stated this is where most townhomes are being sprinkled now by proffers or the owners wants a fourth floor that are already sprinkled under the IBC. Would place on the agenda for discussion at the next meeting.

Work Group 3 IRC Sprinklers: There will be a meeting on December 3, 2009 at DHCD, 11th floor, 600 East Main Street, Richmond, Virginia from 9:30 a.m. to 12:30 p.m. Please contact Janice Firestone at janice.firestone@dhcd.virginia.gov on you planned attendance. Meeting agenda and materials will be sent out and posted on the DHCD web-site.

Again, your participation is most appreciated

DHCD CODE DEVELOPMENT CYCLE
SPRINKLER SUBGROUP MEETING
September 9, 2009

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DHCD, DBFR 2009 Code Change Process

December 7, 2009 Meeting Summary

Workgroup 3 - USBC/International Residential Code - IRC

1. Discussed the 2012 IRC code hearing related to sprinklers. Mandate for sprinklers sustained by the IRC Code Committee.

2. Discussed current code changes submitted by the Sprinkler Coalition. Robby Dawson indicated there might be changes based on a presentation from ISO where local fire department and community ratings might be impacted by not adopting the 2009 model I-Codes without amendments, including IRC sprinkler requirements. He also stated that consensus was based on the code change proposals being accepted as a complete package only. Mike Toalson introduced a code change to require fire extinguisher for kitchens. Some possible amendments were suggested on listings and type of fire extinguisher being ABC type. Mike also mentioned conversations with insurance representatives. For the next meeting (April 22nd) we will invite insurance reps. Mike provided two names and Robby can also provide the name of the ISO person to Janice Firestone.

3. Discussed request from the Virginia Housing Commission for fire data on 1&2 family homes for: age of homes and presence of smoke detectors where deaths occurred. DHCD has received a 30% response to the request sent to Building Officials and aims to have a 70% response. The VHC now wants fire data on response time, room of origin and cause of the fires. Robby asked for data on number of homes built in each time period. Staff hopes to have data collected and a summary of the findings by the end of January.

4. Reviewed the rest of the regulatory cycle.

5. Discussed staff idea how both parties might want to look at "Virginia specific" approach and using their code changes to project performance measurements and goals for what fire data might look like 10, 20 or 30 years from now.

Next and final meeting will be at DHCD April 22nd, 2010 at 9:30 a.m..

WORKGROUP 3 - IRC

DECEMBER 7, 2009

PLEASE SIGN-IN BELOW

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PAUL	WHITNEY		

Timothy M. Kaine
Governor

Patrick O. Gottschalk
Secretary of
Commerce and Trade

COMMONWEALTH of VIRGINIA

William C. Shelton
Director

DEPARTMENT OF
HOUSING AND COMMUNITY DEVELOPMENT

MEMORANDUM

To: Senator Mamie E. Locke, Chair
Virginia Housing Commission

From: Bill Shelton, Director
Department of Housing & Community Development

Date: November 13, 2009

Subject: 2009 International Residential Code
2009 Uniform Statewide Building Code

Copy: Senator John C. Watkins, Chair
Housing and Environmental Standards Work Group

Emory Rodgers, Deputy Director
Building & Fire Regulation

Background

At its September 29, 2009 meeting, following a presentation to the Virginia Housing Commission on the current status of the Uniform Statewide Building Code (USBC) update, several members requested that the Department of Housing and Community Development (DHCD) provide additional information on the effect on construction costs of various provisions of the 2009 International Residential Code (IRC) being considered for inclusion in the USBC. Members also inquired about the availability of information that might shed light on factors influencing the distribution of residential fire fatalities, including the age of structures, the presence and functioning of smoke detectors, and whether the casualties were occurring in detached or attached 1 and 2 family structures.

Before proceeding with the agency's response, it should be noted that considerable time as well as opportunities for input by concerned parties remain before the process for revision of the USBC concludes. Inclusion of specific requirements within the IRC model code does not mean that they will be included in the building code adopted by the Board of Housing and Community Development. The Board has considerable discretion to accept or reject specific provisions of the

underlying model codes. It has exercised this discretion in previous code change cycles and may do so again.

Model Code Provisions

With the preceding caveat, the Department has examined the likely affect of specific provisions that were of interest to members of the Commission. In our estimation, construction costs for a typical 2,000 square foot new home built under the 2009 IRC would increase by approximately $6,300 if sprinklers are mandated and by $3,300 if they are not. If the average home cost is assumed to be $200,000, then there is a 3.2% increase with sprinklers and 1.7% increase without sprinklers.

The associated cost estimates are based on the following new code requirements:

1. Mandated townhome sprinklers- $3,000 ($4,000 minus $1,000 cost offset)
2. Carbon Monoxide alarms-$150
3. Wall bracing-$600
4. Arc-fault devices-$350
5. Energy programmable thermostat-$150
6. Energy improved windows with .35 U value-$1,000
7. Energy improved insulation for water piping-$150
8. Energy duct testing-$550
9. Energy air barrier testing or increased inspections-$350

The 1 & 2 family dwelling mandated sprinkler code requirement has been scaled back by a code change from the proponents to have the mandate cover only townhomes with an estimated construction cost offset of $1,000 reflecting the substitution of a 1-hour fire wall for the current 2-hour fire wall. The proposed 2009 Uniform Statewide Building Code (USBC) already includes sprinklers as an option, and not a mandate, for detached homes and manufactured homes. This does not include an offset for homeowner insurance rates since the premium rate incorporates numerous factors beyond the presence of a sprinkler system.

The carbon monoxide alarm requirement would allow the installation of battery type alarms. The cost estimate is based on a retail price of $30 per alarm plus installation costs for an average of 3 alarms installed per home.

Wall bracing requirements will increase construction costs for more secured installation of siding, straps for roof trusses, extra nailing for window flashing, connections and rebar reinforcement for foundation walls, slabs and footings. The Federal Emergency Management Agency (FEMA) has conducted studies that concluded for every dollar spent on hazard mitigation, there are four dollars in savings from the reduction in damages from natural disasters.

The arc-fault circuit interrupters (AFCI) devices, mandated for homes, were first introduced in the 2006 USBC for bedroom circuits. The first generation of these devices sometimes

malfunctioned, shutting-off household circuits powering vacuum cleaners, hair dryers or other devices with a working arc. These problems seem to have been resolved, so the referenced 2008 National Electrical Code (NEC) expanded their usage to most all electrical circuits in a home. The proponents cite the life safety value and the decrease in property damage from fires noting the potential to save upwards of 200 lives nationally each year. The increased construction cost is estimated at $350. The homebuilders have submitted a code change that would retain the current provisions of the USBC that limit the devices to bedroom circuits.

Several new energy conservation code requirements respond to recent federal legislation being implemented by the Department of Energy. The Virginia Energy Plan that is being revised in 2010 must address the state's compliance with the federal energy conservation mandates for a 30% energy reduction in the built environment. Adopting the 2009 International Energy Conservation Code and the 2009 International Residential Code, as the referenced model codes in the 2009 USBC would demonstrate compliance for the first 15%. The remaining 15% would be included in the 2012 USBC expected to take effect by 2014. For 1&2 family homes most of the energy conservation code measures are already in-place; however, what is not included in the current building code are provisions for testing to determine if the installation of ducts, windows, doors, air barriers and insulation has been done correctly. Local building departments do conduct energy inspections, but such inspections cannot verify how much leakage might occur with the duct systems, around windows and through the building envelope. So, as with other building systems that require testing, there will be a mandated duct test for ducts outside of the conditioned space; and mandated testing or increased inspections for the exterior wall insulation materials, air barrier wrap and window installations. There are also code requirements for programmable thermostats, increased insulation for ducts and water piping in unconditioned spaces and improved windows to lower heat transmission referred to as the U-factor. The U-factor will be .35 from a current .40, which means that windows would be predominantly doubled paned with low-E gas. The construction cost increase is estimated to be $2,200 for these new energy code requirements.

Available research on the energy provisions make it possible to provide a payback estimate. The estimated payback period for $2,200 in new energy code requirements is 5-7 years.

Residential Fire Casualties

In response to the Commission's request, the Department also reviewed available data on fire deaths occurring in 1 & 2 family dwellings and attempted to correlate that information with the age of the dwelling; whether operable smoke detectors were present; and whether the dwelling unit was a detached structure or townhome (attached) structure.

Sources and Organization of Data

With the assistance of the Virginia Department of Fire Programs (VDFP), which provided data from the Virginia Fire Incident Reporting System (VFIRS) indicating fires in which there were civilian casualties, DHCD reviewed residential structure fire data for calendar years 2006

through 2008 and for the first 6 months of 2009. Although VFIRS data reports on the presence and functioning of smoke detectors in these incidents, it does not indicate the age of the dwellings. Therefore, DHCD requested that local building departments provide the age of each home where a death occurred. The Department established three building age categories (pre-1973, pre-1990 and post-1990). Each category reflected significant changes in fire-related provisions of the Uniform Statewide Building Code. Pre-1973 dwellings were subject only to local building codes or in some cases to no building codes. . In dwellings built after 1973 but before 1990, battery smoke detectors were required. Dwellings constructed in accordance with the 1&2 family dwelling codes after 1990 required interconnected hard wired smoke detectors as well as firestopping, draftstopping and electrical safety improvements.

Because some local building departments had not yet responded by the date this document was prepared, the following information should be considered as an interim report.

Smoke Detector Data:

Fire Fatalities in 1 & 2 Family Dwellings: Smoke Detector Status					
Year	Smoke Detector Present / Operation Unknown	Smoke Detector Present / Alert Sounded	Detector Present / Failed to Alert	No Detector Present	Smoke Detector Status Unknown
2006	8			11	20
2007	12	1	6	10	16
2008	7	5	2	4	22
2009 (6 mo.)	5	3	2	4	11
Totals	32	9	10	29	69
% of Total Fatalities	21.4	6.0	6.7	19.5	46.3

Fire Fatalities in 1 & 2 Family Dwellings: Smoke Detector Status *			
Age Category	Pre-1973	Pre-1990	Post-1990
Total Fatalities	17	11	12
% of Fatalities	42.5%	27.5%	30%

*These figures based on data from localities who responded by 11/13/09.

The limited amount of data does not appear to support definitive conclusions. In two-thirds of the fires with civilian fatalities, either the presence or the operation of a smoke detector was undetermined. In one-fifth of the cases, it was known that no detector was present. However, the fact that only 6 percent of the reported civilian fatalities occurred in dwellings with functioning smoke detectors at least suggests that properly installed and operating detectors do provide occupants with an opportunity to evacuate in time to limit casualties.

Timothy M. Kaine
Governor

Patrick O. Gottschalk
Secretary of
Commerce and Trade

COMMONWEALTH of VIRGINIA

William C. Shelton
Director

DEPARTMENT OF
HOUSING AND COMMUNITY DEVELOPMENT

MEMORANDUM

To: Senator Mamie E. Locke, Chair
Virginia Housing Commission

From: Bill Shelton, Director

Date: November 16, 2009 Bill Shelton

Subject: 2009 International Residential Code
2009 Uniform Statewide Building Code

Background

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Before proceeding with the agency's response, it should be noted that considerable time as well as opportunities for input by concerned parties remain before the process for revision of the USBC concludes. Inclusion of specific requirements within the IRC model code does not mean that they will be included in the building code adopted by the Board of Housing and Community Development. The Board has considerable discretion to accept or reject specific provisions of the underlying model codes. It has exercised this discretion in previous code change cycles and may do so again.

Model Code Provisions

With the preceding caveat, the Department has examined the likely affect of specific provisions that were of interest to members of the Commission. In our estimation, construction costs for a typical 2,000 square foot new home built under the 2009 IRC would increase by approximately $6,300 if sprinklers are mandated and by $3,300 if they are not. If the average home cost is assumed to be $200,000, then there is a 3.2% increase with sprinklers and 1.7% increase without sprinklers.

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Total Fatalities	17	11	12
% of Fatalities	42.5%	27.5%	30%

*These figures based on data from localities who responded by 11/13/09.

The limited amount of data does not appear to support definitive conclusions. In two-thirds of the fires with civilian fatalities, either the presence or the operation of a smoke detector was undetermined. In one-fifth of the cases, it was known that no detector was present. However, the fact that only 6 percent of the reported civilian fatalities occurred in dwellings with functioning smoke detectors at least suggests that properly installed and operating detectors do provide occupants with an opportunity to evacuate in time to limit casualties.

Regarding the age and type of home data, for detached homes 70% of the deaths occurred in pre-1990 homes. Townhome fire deaths will have to await the collection of additional data from the local building departments, as that data is compiled with multi-family housing data.

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TAB 1 ----- Code Changes Considered Through Workgroup Process as Consensus or Recommended for Approval

Section No.	Description of Change	Action taken
USBC, Part I, Virginia Construction Code		
102.3(1)	Publicly regulated utilities	Approved
102.3(2)	Manufacturing and processing machines	Approved
102.3(7)	Federally-owned buildings (further amendments)	Approved
103.10(3)	Testing requirement in the IRC	Approved
103.10(6)	Scope of IRC	Approved
108.2(2)	Accessory structures	Approved
308.2	Convalescent facilities	Approved
310.1	ALFs – Up to five persons needing assistance	Tabled
310.6 (R314.3.1)	Household fire alarm systems	Approved
310.6 (R315.2)	CO alarm retrofit requirements	Approved
310.6 (R315.3)	CO alarm power supplies	Approved
310.6 (R401.3)	Lot drainage	Approved
310.6 (N1101.9)	Energy certificate (IECC also)	Approved
310.6 (R408.3)	Termite Inspection	Approved
1020.1.6	Stairway identification	Approved
2803.1 (1101.10)	Alterative port cap protection	Approved
2901.1.1 (406.3)	Washing machine drains	Approved*
2901.1.1 (909.1)	Wet venting of bathroom groups (IRC also)	Approved*

**Note from staff: these two code changes have subsequently been withdrawn by the proponent.*

USBC, Part III, Virginia Maintenance Code		
105.2	Acceptance or rejection of unsafe notice	Approved
105.4.1	Immediate action for unsafe conditions	Approved
Statewide Fire Prevention Code		
107.6	Clarification of state permit requirements	Approved
112.2	Local appeals board training	Approved
Chapter 46	Construction requirement for existing buildings	Approved

TAB 2 ----- Code Changes Considered Through Workgroup Process as Non-consensus or Recommended for Disapproval

USBC, Part I, Virginia Construction Code		
307.5.1	Permissible fireworks (three proposals)	Disapproved
3109.5	Pool entrapment avoidance	Disapproved
Virginia Amusement Device Regulations		
Sections 20-75	Kiddie rides, fees, continuing education, etc	Disapproved

Proposed 2009 Regulatory Cycle Schedule & Meetings

February 26, 2010. Above-ground Liquid Fertilizer Storage Tank (ALFST) meeting.

March 23, 2010. ALFST meeting.

March 25, 2010: Work Group 1 – USBC, SFCP, IBSR, VADR Administrative and Selected Technical Issues meeting.

April 8, 2010: Work Group 2 – USBC Technical Code Change meeting.

April 22, 2010: Work Group 3 – IRC – Residential Sprinklers meeting.

April 29, 2010: Combined work group meeting to review the IRC sprinklers, ALFST's, Assisted Living Facilities and any remaining issues from the other work group meetings.

May 10, 2010: BHCD's Codes and Standards Committee meets to consider consensus and non-consensus code changes from the March 25th, April 8th, and April 29th Work Group meetings

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May 17, 2010: BHCD's scheduled meeting. The Codes and Standards Committee could be scheduled to meet dependant on progress made at the May 10th meeting.

June 3 or June 7, 2010. BHCD's Codes and Standards Committee meets to consider and approve all remaining code changes for the final regulations to be submitted to the full BHCD.

June 28 or July 26, 2010. BHCD approve final regulations with input from the FSB.

Effective Date: October 1, 2010

TAB 8

INSURANCE SERVICES OFFICE, INC.

www.isomitigation.com 800-444-4554

RESIDENTIAL SPRINKLERS ISO FACT SHEET

ISO is an independent statistical, rating, and advisory organization that serves the property/casualty insurance industry. ISO is the leading supplier of underwriting information, advisory loss costs, supplementary rating information and standardized policy language to insurers in all 50 states and the District of Columbia. ISO offers the following regarding how residential sprinklers are reflected in ISO's advisory residential property programs:

PREMIUM DISCOUNTS

The standard ISO Dwelling Fire and Homeowners Programs contain available premium Credits for installation of fire sprinkler protection up to a maximum of:

- 13% for full sprinkler protection that includes all areas of a home, including attics, bathrooms, closets, and attached structures;
- 8% for fire sprinkler protection of all areas of a home excluding the attic, bathrooms, closets, and attached structures as long as fire detection equipment is installed in those areas where sprinklers are omitted;

Individual insurer programs may provide different credits.

SPRINKLER "LEAKAGE" COVERAGE

The presence of a residential sprinkler system may raise concern about the risk of accidental water leakage from the system. ISO's standard Homeowners policy forms provide coverage for "...accidental discharge or overflow of water...from within a...fire protective sprinkler system...". This coverage is included in the basic policy. There is no extra charge for this coverage.

Also, coverage is provided for water damage related to the suppression or extinguishment of a covered fire.

Individual insurer programs may provide variations to this coverage.

BUILDING CODE EFFECTIVENESS GRADING SCHEDULE

The ISO Building Code Effectiveness Grading Schedule (BCEGS®) is used to review public building code enforcement agencies and to develop a classification that is provided as advisory information to insurers who may use it for insurance underwriting and rating. If the requirement of the International Residential Code (2009) for automatic fire sprinkler protection of residential dwellings was removed by legislation or local ordinance, BCEGS would not provide full recognition for adoption of code without amendments. A building code enforcement agency which adopted a code with amendments that weaken hazard mitigation issues as defined in the model codes and referenced standards would not receive maximum recognition for code adoption.