

## **AGENDA ITEM SUMMARY**

**WORK SESSION DATE:** September 7, 2010

**AGENDA ITEM TITLE:** Introduction of Residential Fire Sprinkler Requirements in The 2009 International Residential Code

**STAFF RESPONSIBLE:** Tony Fusaro, Chief building Official

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**ISSUE STATEMENT:** Building Department staff is in the process of updating its building codes from the 2003 International building codes (“I-Codes”) to the 2009 I-Codes. The purpose of this memo is to bring one significant development in the 2009 International Residential Code (IRC) to the attention of the Board of County Commissioners: the 2009 IRC requires the installation of fire sprinklers in all one- and two family homes and townhouses. This memo will provide background on this requirement, note alternatives and give staff’s recommendation.

**BACKGROUND:**

- The 2009 International Residential Code includes Section R313, a new section which requires the installation of fire sprinklers in all dwellings. For jurisdictions that have adopted the 2009 IRC without amendment to R313, this code requirement would become effective on January 1, 2011 for all residences; the requirement for townhomes would become effective as soon as the code adoption becomes effective. This is a significant development in residential building codes. See Attachment A for a full discussion of the issue.
- The IRC is the code that sets the standards for the construction of one- and two-family dwellings and townhomes.
- Pitkin County last updated its codes in 2004 with the adoption of the 2003 International Codes (“I-Codes”). An ordinance to adopt the I-Codes will be brought to the board later this year.
- All three fire districts have been invited to this meeting to provide their input. The 2009 IRC has already been adopted by the Town of Snowmass Village, where R313 will become effective on January 1, 2011.

**LINK TO STRATEGIC PLAN:** Safe and Healthy Community, Organizational Excellence

**KEY DISCUSSION ITEMS:**

1. Additional safety afforded by fire sprinklers.
2. Additional costs to the homeowner.

3. Impacts to building department
4. Possible impacts to the local construction industry.

**BUDGETARY IMPACT:** Enforcement of the sprinkler requirement will increase the workload of building department staff.

**RECOMMENDED BOCC ACTION:** Approve staff recommendation to include the adoption of Sec R313 in the 2009 IRC but amend it to become effective on January 1, 2013 rather than in 2011.

**ATTACHMENTS:**

- A. A Discussion of Fire Sprinklers in the 2009 International Residential Code.
- B. Survey of R313 Fire Sprinkler Adoptions By Other Jurisdictions

## ATTACHMENT A

### **A DISCUSSION OF FIRE SPRINKLERS IN THE 2009 INTERNATIONAL RESIDENTIAL CODE**

**Purpose:** The Pitkin County building department is presently working to update its building codes from the 2003 International Codes (I-Codes) to the 2009 I-Codes. One of the codes, the International Residential Code (IRC), contains a new section, R313, which would require the installation of automatic fire sprinklers in all one- and two-family homes and townhouses. This requirement has been nationally controversial and has met with varying degrees of acceptance. The purpose of this report is to provide the Board of County Commissioners with information about this requirement and to seek input from the Board as to their support for this sprinkler requirement.

**Background:**

Pitkin County presently requires the installation of fire sprinklers in residences 5,000 square feet in size or larger. Fire sprinklers are already required in multifamily residential buildings by the International Building Code. If the 2009 International Residential Code (IRC) were adopted without amendments, the sprinkler requirement for one- and two-family dwellings would be effective on January 1, 2011 and the sprinkler requirement for townhouses would be immediate upon code adoption. This would include all new dwellings regardless of size, whether site built or factory built. Sprinklers would not be required for additions and remodels to existing buildings that are not already provided with automatic sprinkler systems.

This code requirement has been developing over a number of years and gained enough support in the 2009 International Code Council (ICC – the national organization that writes building codes) code development hearings to become part of the code. It is important to note that residential fire sprinklers will now be considered the standard of care for residential construction now that this requirement has been incorporated into a national building code.

**How R313 works:**

R313 requires that such homes be provided with automatic fire sprinklers designed and installed in accordance with either IRC Section P2904 or NFPA 13D.

P2904 contains all the standards needed for the design and installation of residential sprinkler systems. The sprinkler system is part of the domestic water supply system and can be designed and installed by the same plumbing contractor who installs the domestic plumbing system. Local building department inspectors can inspect the sprinkler installations. The sprinklers run off house water pressure or well pump pressure and do not require additional pumps or expensive engineering.

NFPA 13D is the long-standing standard for sprinkler installation in one- and two-family dwelling units written by the National Fire Protection Association. NFPA 13D requirements are more stringent than those of P2904.

**Issues to be weighed:**

- 1) The additional safety afforded by sprinklers to occupants and firefighters. According to a National Fire Protection Association report, the risk of fire-caused fatalities decreases by 83% in homes provided with fire sprinkler systems.
- 2) The added cost of installation to the homeowner. The costs involved in designing and installing a 2904 system are not known at this time since none of these systems have yet been installed. We do know the costs of a NFPA 13D sprinkler system, the type now required in Pitkin County for homes over 5000 square feet in floor area, is upwards of \$2.50 per square foot depending on the requirements of the individual house.
- 3) The added inspection time for the building department for plan review and inspection. This will be a significant time involvement for building staff, and along with other additional duties that may be implemented because of the recent court cases this could require an increase in building staff.
- 4) Possible effects on the local construction industry. The construction industry in Pitkin County has felt the effects of the national recession and additional construction costs could affect recovery.
- 5) The lack of affordable training at this time for plumbers and building department personnel. Training should become more available in the future.

**Options:**

Below are several options that have been taken by other Colorado jurisdictions in adopting the 2009 I-Codes (see Attachment B, A Survey of Code Adoptions by Other Jurisdictions).

1. Adopt the 2009 IRC without amendment to sec R313. This would mean fire sprinklers would become mandatory on January 1, 2011.
2. Adopt the 2009 IRC, amending sec R313 to become effective on January 1, 2013. This would allow time for the involved issues noted above to resolve.
3. Adopt the 2009 IRC deleting section R313 altogether. The 2009 IRC would be adopted without the sprinkler requirement.

**Staff recommendation:**

- Adopt the 2009 IRC, including the requirements for residential sprinklers in Section R313.
- Amend Section R313 to have an effective date of January 1, 2013 for the required installation of sprinklers. This would allow time for involvement of the program including training of professionals, for cost efficiencies to take effect, and for recovery of the economy.

This recommendation of adopting the IRC with an amended effective date of 2013 has the endorsement of the Fire Marshals Association of Colorado and the Colorado Chapter

of the International Code Council. The fire marshals in Pitkin County vary in their feelings about this requirement.

ATTACHMENT B

Survey of R313 Fire Sprinkler Adoptions By Other Jurisdictions

Jurisdiction	YES	NO	Undecided	Effective Date	Comments
Snowmass	X			1-Jan-2011	Yes - per code, 09 I-Codes already adopted
Basalt			X		Undecided due to new NFPA glycol regulation
Glenwood			X		
Vail		X			Vail FD "Matrix" requirements in effect. 2009 codes already adopted
Breckenridge		X			Staying with 2006 codes.
Winter Park			X		Waiting to see what Grand Co. does, thinks they will adopt out.
Steamboat		X			Staying with 2006 codes for at least one more cycle.
Eagle County			X		Delayed until Sept. 2012 and will defer to the BOCC for a decision.
Garfield County	X			1-Jan-2013	Delayed sprinkler provision until 2013.
Aspen			X		
Arapahoe County	X			1-Jan-2013	
Aurora			X		
Blackhawk			X		sprinklers already required based on house size
Boulder County			X		
Broomfield	X			1-Jan-2013	need to bring back before City Council before 1/1/2013 to confirm
Denver	X			1-Jan-2013	
Douglas County	X			1-Jan-2013	
Golden	X			1-Jan-2013	09 codes adopted
Greeley	X			1-Jan-2011	
Greenwood Village		X			amended out entirely
Littleton		X			amended out entirely
Longmont	X			1-Jan-2013	09 codes adopted
Louisville		X			amended out; will revisit in 2012
Mountain Village	X			1-Jan-2013	
Parker	X			1-Jan-2013	09 codes adopted
Thornton	X			1-Jan-2013	
Westminster	X			1-Jan-2013	

These survey responses reflect either actual adoptions or stated intentions.

Delayed effective date of 1/1/2013 is based on the CCICC/FMAC Joint Ad Hoc Residential Sprinkler Committee recommendations dated September 25, 2009.