

HB

2022

CS FOR HOUSE BILL NO. 202(CRA)

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SIXTH LEGISLATURE - SECOND SESSION

BY THE HOUSE COMMUNITY AND REGIONAL AFFAIRS COMMITTEE

**Offered:
Referred:**

Sponsor(s): REPRESENTATIVES HERRON, Millett, Tuck, Stoltze, Johansen, Keller, Crawford, Muñoz, Johnson, Richard Foster, Ramras, Peggy Wilson, Kelly, Dahlstrom, Harris, Gatto

A BILL

FOR AN ACT ENTITLED

1 **"An Act relating to municipal building code requirements for fire sprinkler systems in**
2 **certain residential buildings."**

3 **BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:**

4 *** Section 1.** AS 29.10.200 is amended by adding a new paragraph to read:
5 (62) AS 29.35.144 (sprinkler fire protection systems).

6 *** Sec. 2.** AS 29.35 is amended by adding a new section to read:

7 **Sec. 29.35.144. Sprinkler systems in certain residential buildings.** (a)
8 Except as provided by (b) of this section, a municipality may not require a sprinkler
9 fire protection system to be included in the construction of all new single-family
10 residential buildings or in the construction of all new residential buildings with not
11 more than two dwelling units.

12 (b) A municipality may, by ordinance, require a sprinkler fire protection
13 system to be included in the construction of all new single-family residential
14 buildings, in the construction of all new residential buildings with not more than two

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dwelling units, or in both types of buildings. Before adopting an ordinance to implement this subsection, or before amending an ordinance to extend its coverage to residential buildings described in this subsection, in addition to complying with the other requirements relating to the adoption of an ordinance, the governing body shall

(1) notwithstanding the publication requirement in AS 29.25.020(b)(3) or a comparable notice publication requirement of a home rule municipality, at least 30 days before the first scheduled public hearing for the ordinance, publish

(A) a summary of the ordinance or ordinance amendment; and

(B) a notice of the time and place of each scheduled public hearing on the proposed ordinance or amendment; and

(2) notwithstanding the public hearing schedule requirement of AS 29.25.020(b)(6) or comparable public hearing scheduling requirement of a home rule municipality, schedule at least three public hearings on the proposed ordinance or ordinance amendment to be held within a 60-day period; the governing body may not consider the proposed ordinance or amendment for adoption, with or without amendment, sooner than 60 days after the conclusion of the first public hearing on the proposed ordinance or amendment.

(c) This section applies to home rule and general law municipalities.

AMENDMENT

OFFERED IN THE HOUSE

TO: CSHB 202(CRA), Draft Version "E"

- 1 Page 2, lines 14 - 17:
- 2 Delete all material.
- 3 Insert "ordinance amendment to be held within a period of not less than 60 days and
- 4 not more than 180 days."

26-LS0776R
Cook
3/9/10

CS FOR HOUSE BILL NO. 202()
IN THE LEGISLATURE OF THE STATE OF ALASKA
TWENTY-SIXTH LEGISLATURE - SECOND SESSION

BY

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Holy Name School*

*Attached 2010
Fiscal note*

Paul Michaelson

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dwelling units, or in both types of buildings. Before adopting an ordinance to implement this subsection, or before amending an ordinance to extend its coverage to residential buildings described in this subsection, in addition to complying with the requirements relating to the adoption of an ordinance under AS 29.25, the governing body of the municipality shall

(1) prepare a cost-benefit analysis of the proposed ordinance as it may apply to the residential buildings to which the proposed ordinance or ordinance amendment will apply;

(2) notwithstanding the publication requirement in AS 29.25.020(b)(3) or a comparable notice publication requirement of a home rule municipality, at least 30 days before the first scheduled public hearing for the ordinance, publish

(A) a summary of the ordinance or ordinance amendment and the cost-benefit analysis, and

(B) a notice of the time and place of each scheduled public hearing on the proposed ordinance or amendment; and

(3) notwithstanding the public hearing schedule requirement of AS 29.25.020(b)(6) or comparable public hearing scheduling requirement of a home rule municipality, schedule at least three public hearings on the proposed ordinance or ordinance amendment to be held within a 60-day period; the governing body may not consider the proposed ordinance or amendment for adoption, with or without amendment, sooner than 60 days after the conclusion of the first public hearing on the proposed ordinance or amendment.

(c) This section applies to home rule and general law municipalities.

e of sprinkler systems

of no installed systems

7
L
yes
no
yes
no

[Signature]

Representative Bob Herron

Rep. Bob.Herron@legis.state.ak.us

State Capitol • Juneau, Alaska 99801-1182

Phone: (907) 465-4942 • Fax: (907) 465-4589



House District 38
Kuskokwim & Johnson Rivers
Kuskokwim Bay & Nelson Island

Sponsor Statement

CSHB 202 (Version R), Residential Sprinkler Systems

Akiachak

Akiak

Atmautluak

Bethel

Chefornak

Eek

Goodnews Bay

Kasigluk

Kipnuk

Kongiganak

Kwethluk

Kwigillingok

Lower Kalskag

Mekoryuk

Mertarvik

Napakiak

Napaskiak

Newtok

Nightmute

Nunapitchuk

Oscarville

Platinum

Quinhagak

Taksook Bay

Tuluksak

Tununak

Tuntutuliak

Upper Kalskag

House Bill 202 is in response to a national movement to require fire sprinkler systems in one and two-family dwellings. This legislation does not take away local control from municipalities and cities, but does require a more robust public process be followed before sprinklers can be mandated in certain areas.

What HB 202 seeks to avoid is broad mandates without public involvement for home sprinkler systems that will drive up costs for consumers in areas where sprinklers may not necessarily be needed.

The CS for HB 202 (version R) requires that before a municipality can mandate sprinkler systems in new construction of residential buildings with one or two dwelling units they must first:

- Do a cost-benefit analysis
- At least 30 days prior to the first public hearing, publish a summary of the ordinance and the cost-benefit analysis and notice the time and place of each scheduled public hearing
- Hold three public hearings within a 60-day period.

Fire sprinkler systems are not cheap. Conservative estimates indicate that Alaskans could expect to pay between 3 to 5 dollars per square foot to have a system included in the construction of their new home. The NAHB estimates the entire cost of an average home sprinkler system at \$3,000.

This bill realizes there may be cases in Alaska where requiring sprinklers in one and two-family dwellings is necessary. Often, the geography at the location of new builds is such that firefighters cannot make it swiftly to a burning home. In those cases, HB 202 **would not** prohibit sprinkler mandates.

House Bill 202 will continue to allow elected officials in municipalities and cities to explore a mandate on sprinklers.

FISCAL NOTE

STATE OF ALASKA
2008 LEGISLATIVE SESSION

Fiscal Note Number: _____
 Bill Version: _____
 () Publish Date: _____

Identifier (file name): HB 202-DPS-FLS-03-08-10 Dept. Affected: Public Safety
 Title "An Act relating to municipal building code requirements for RDU Fire and Life Safety
 Sponsor Representative Herron Component Fire and Life Safety Operations
 Requester Community and Regional Affairs Component Number 494

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2009	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
OPERATING EXPENDITURES								
Personal Services								
Travel								
Contractual								
Supplies								
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
TOTAL OPERATING		0.0	0.0	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES								
-----------------------------	--	--	--	--	--	--	--	--

CHANGE IN REVENUES ()								
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FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts								
1003 GF Match								
1004 GF								
1005 GF/Program Receipts								
1037 GF/Mental Health								
Other Interagency Receipts								
TOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2008) cost: 0.0

POSITIONS

Full-time								
Part-time								
Temporary								

ANALYSIS: (Attach a separate page if necessary)

This bill will have no fiscal impact on the department.

Prepared by: David Tyler
 Division State Fire Marshal
 Approved by: Joe Masters
 Commissioner

Phone (907) 269-5491
 Date/Time 3/8/10 1:00 PM
 Date 3/8/2010

CS HB 202, Version R – Municipal requirements for fire sprinklers

Summary:

A home rule or general law municipality may not adopt an ordinance to require a sprinkler system in residential building with one or two dwelling units, unless the muni:

1. Comply with requirements already in statute under AS 29.25;
2. Prepare a cost-benefit analysis of the proposed ordinance;
3. At least 30 days before the first public hearing for the ordinance, publish a summary of the ordinance and the cost-benefit analysis, and a notice of the time and place of each public hearing;
4. Schedule at least 3 public hearings (to be held within a 60-day period) on the proposed ordinance and not consider the ordinance for adoption until 60 days after the first public hearing date.

AS 29.25

- Ordinance introduced in writing
- Public hearing may be required (majority vote)
- At least 5 days before public hearing a summary of the ordinance shall be published with the time and place of the hearing



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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.

- Prop 4 supported
- Merionish voted against Kensington Reso.
-

*David Owens
Building Inspector*

House Fire Deaths

Elliot F. Eisenberg

Over the past two decades the number of individuals dying in fires has fallen dramatically. In 1979 the total number of such deaths was 5,998. By 1999, the latest year for which data are available, the number of such deaths had fallen to 3,354—a decline of 44 percent. This reduction understates the true improvement in fire safety, as the U.S. population grew by almost 50 million persons during this 20-year period. As a result, the fire death rate per million people, a better measure of fire safety, fell from 26.66 in 1991 to 12.30 in 1999—almost 54 percent.

The most common type of fire death is a result of a house fire. Figure 1 shows the total number of fire deaths, and fire deaths that originated in the home, between 1979 and 1999. This excludes arson deaths (which are often categorized as homicides or suicides), fire deaths following car crashes, railway deaths involving fire, and deaths caused by explosive materials. It also excludes

forest fires, camp fires, and all other fires that originate outside the home, yet result in the death of an individual in the home. The number of these fire deaths has declined by 45.6 percent, from 4,863 in 1979 to 2,644 in 1999. Taking into account the growth in population, the 45.6 percent decline in house fire deaths translates into a decline in the fire death rate per million persons from 21.6 to 9.7 or 55 percent.

These findings are based on the annual Multiple-Cause-of-Death file collected and compiled by the National Center for Health Services (NCHS), a part of the Centers for Disease Control and Prevention (CDC). Death certificates are coded by local medical authorities and compiled by the states and finally by NCHS. The result is an annual data file that contains a record of all deaths in the United States.

State-by-State

Table 1 looks at fire deaths, and fire deaths per million persons (DPMP) on a state-by-state basis

from 1983 and 1999. While the total number of fire deaths is important, it is strongly influenced by the size and population growth of the state. By avoiding these distorting influences fire deaths per million persons (DPMP) is a more useful measure.

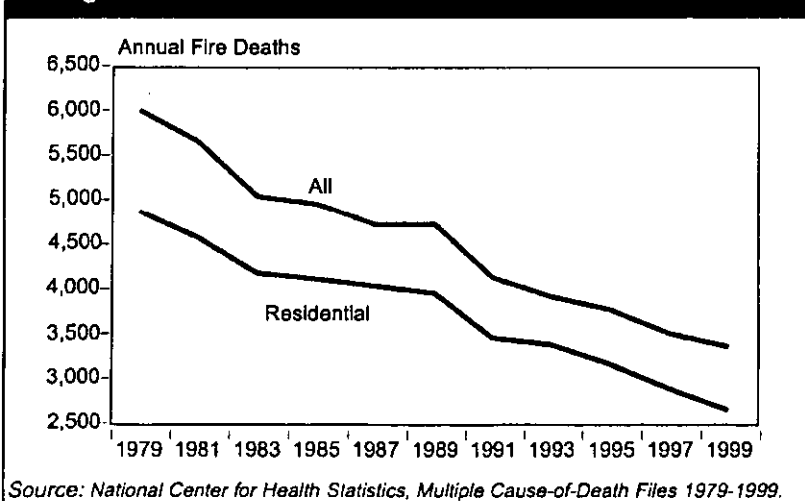
All states did not show a decline in fire deaths between 1983 and 1999 because in some states the number of fire deaths was already so low, or so unusually low in 1983, that a further reduction in the number of fire deaths was not possible.

Fire deaths rates are much higher in the South than in any other region of the nation. Nine of the 10 states with the highest fire DPMP rates are from the South. Fortunately, the DPMP rate in the South, and in other states with relatively high fire death rates, has declined rapidly during the past two decades. Mississippi has seen its rate plummet by 43 percent, while Georgia's rate has fallen by an even larger 57 percent. Other Southern states that have had very large declines in their fire DRMP rate include Louisiana, which enjoyed a reduction of 42.3 percent, and South Carolina who's rate fell by 65.8 percent.

One possible reason for the sharp decline is that due to rapid population growth many southern states have, on average, very new housing stock. Despite that, possible reasons for the continued high fire death rates in these states include lower overall levels of education, a high percentage of the population who live in rural areas, and high percentages of people who smoke and or who are below the poverty line.

A major reason for the large national fall in fire death rates has been due to the many fire safety features in new homes. A combination

Figure 1. Fire Deaths and House Fire Deaths 1979-1999



of improved smoke detector placement and technology, improved fire blocking and stopping—which results in better fire containment which in turn provides more time to escape and or extinguish the fire—better heating and electrical design, resulting in the use of fewer extension cords and space heaters, and improved fire ratings on interior furnishings and building materials have lead the way in reducing U.S. fire deaths.

International

While other countries' fire death rates have fallen over the past 25 years, U.S. rates have fallen significantly faster. Information to help compare the performance of the recent U.S. fire safety record to other countries comes from the National Fire Protection Association (NFPA).

Figure 2 shows that between 1979 and 1999 the decline in the U.S. fire death rate has been the largest in both absolute and percentage terms. In absolute terms the U.S. rate has fallen by over 20 DPMP, which translates to a decline of 57 percent, only France the U.K. and Spain even come close, and in all three cases the decline has been at most 50 percent. Nonetheless, fire death rates are still about 33 percent lower in France and about half as high in Spain and in the Netherlands as they are in the United States.

Closer to home, fire death rates in the U.S. and Canada have been similar for the past 25 years. From 1977 through 1984 the rates were nearly identical in both countries. Since then, however, Canada has consistently had a slightly lower rate than the U.S. with the gap between the two rates fluctuating from a high of 6 DPMP to a low of about 2 in 1999.

While fire death rates in the U.S. have fallen dramatically and are now comparable to rates in some

European nations, a recent report by the World Fire Statistics Centre (WFSC) shows that more needs to be done before our rates are in line with most European countries. While the WFSC, and the NFPA get their data from different sources, and thus have results that differ slightly, their conclusions are mutually reinforcing.

The U.S. has traditionally placed greater emphasis on fire suppression than other nations.

It is, however, in fire prevention and safety behavior where the U.S. falls short of the Europeans. In Europe 4 percent to 10 percent of fire department budgets are spent on fire prevention, in the U.S. the rate rarely approaches 3 percent. Also, there is generally much greater cultural awareness of the destructive force of fires in many European and Asian countries due to hundreds of years of experience living in densely populated cities, where fires have periodically threatened large parts of the population and housing stock. Additionally, in the U.S., house fires are considered an inevitable, albeit an unfortunate, part of life, and thus carry no social stigma. By contrast in Europe, and elsewhere, house fires are viewed as preventable. Thus, when they do occur they are a cause of deep personal shame and embarrassment.¹

Causes of Fires

Figure 3 graphs the most common causes of house fire deaths as reported by the United States Fire Administration² (USFA). Smoking is the leading cause with more than 25 percent of all residential fire deaths attributable to it. The next most common cause is suspicious activities or arson that accounts for about 20 percent of residential fire deaths. Cooking fires are next, followed closely by heating, with both cur-

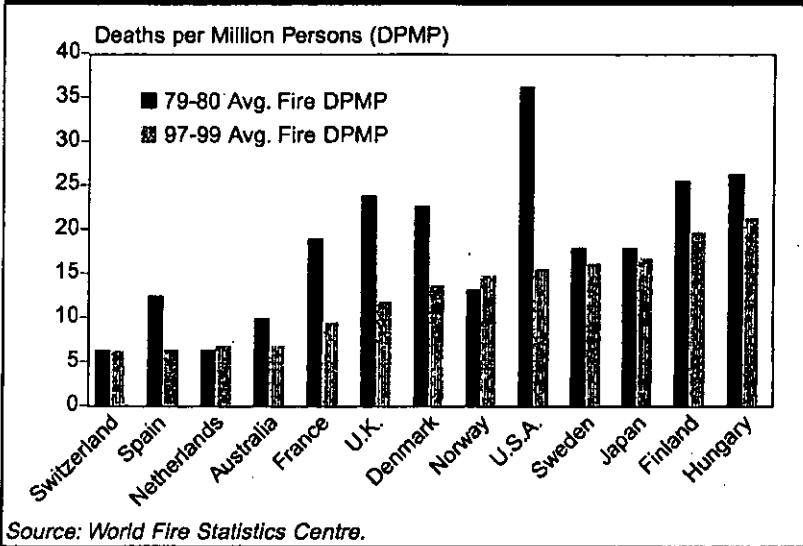
Table 1. State-By-State House Fire Deaths

	Deaths		Per Million	
	1999	Deaths	1983	1999 Rank
United States	12,644	17.8	18.7	NA
Alabama	93	30.8	21.3	50
Alaska	7	35.2	11.3	35
Arizona	135	7.7	7.3	15
Arkansas	33	34.0	12.9	38
California	154	9.4	4.6	6
Colorado	18	8.6	4.4	4
Connecticut	25	7.3	7.6	18
D.C.	53	33.0	9.6	30
Delaware	10	51.3	13.3	39
Florida	191	13.6	6.0	10
Georgia	110	32.9	14.1	21
Hawaii	2	6.9	1.7	3
Idaho	11	9.1	8.8	26
Illinois	130	17.1	10.7	32
Indiana	59	19.5	9.9	31
Iowa	35	18.6	12.3	37
Kansas	24	12.5	9.0	28
Kentucky	157	23.1	7.3	12
Louisiana	71	28.1	16.2	45
Maine	23	21.8	18.4	48
Maryland	56	22.8	10.8	33
Massachusetts	31	21.2	5.0	7
Michigan	137	17.9	13.9	40
Minnesota	38	14.7	8.0	19
Mississippi	86	41.8	23.8	51
Missouri	49	17.5	9.0	27
Montana	14	19.6	4.5	5
Nebraska	14	12.5	8.4	23
Nevada	12	7.8	6.8	13
New Hampshire	2	18.8	1.7	2
New Jersey	60	15.5	7.4	16
New Mexico	9	17.6	5.2	9
New York	151	12.5	8.3	22
North Carolina	125	24.2	16.3	46
North Dakota	4	11.7	6.3	12
Ohio	126	17.9	11.2	34
Oklahoma	53	26.6	15.8	44
Oregon	29	15.0	8.7	25
Pennsylvania	141	20.5	11.8	36
Rhode Island	5	15.7	5.0	8
South Carolina	56	42.1	14.4	43
South Dakota	6	10.0	8.2	21
Tennessee	111	24.3	20.2	49
Texas	182	19.1	9.1	29
Utah	3	6.9	1.4	1
Vermont	4	53.2	6.7	14
Virginia	59	19.2	8.6	24
Washington	43	10.7	7.5	17
West Virginia	30	26.0	16.6	47
Wisconsin	42	13.5	8.0	20
Wyoming	3	7.8	6.3	11

Source: National Center for Health Statistics, Multiple Cause-of-Death Files 1983-1999.

*\$8000
retail*

Figure 2. International Fire Death Comparisons, 1979-1999



rently accounting for between 10 percent and 15 percent of house fire deaths. The three other most common causes are electrical, open flame and children, each responsible for between 5 percent and 10 percent of all house fire deaths. While there are other causes, none account for more than 4 percent of house fire deaths.

An overarching cause of residential fire deaths is the age of the dwelling. Both known studies that have looked at this question, have found that older structures burn much more frequently than newer ones. A study³ that examined all residential fire deaths in California between 1986 and 1991 found that the average fatality rate in units that were less than 15 years old was one-eighth as high as the annual average for California's housing stock, and one-tenth as high as the rate for houses more than 15 years old.

Nearly identical results were obtained in a national study conducted by the NAHB in 1987. That study found that the fatality rate for units that were five years old or less was one-fifth as high as the average fatality rate for all housing units and

one-sixth as high as the fatality rate for units more than 15 years old.⁴

Conclusion

House fire deaths in the US have fallen dramatically over the past 25 years. During that time the U.S. has gone from being a county where the chances of dying in a house fire were several times higher than in Europe, to being at worst twice as high and in many cases no higher. While any death is a tragedy, the

U.S. has made great progress in reducing fire deaths and they no longer represent a large percentage of total deaths.

It was also shown that fire death rates have been decreasing across all states and decreasing most in states with high death rates. Smoking continues to be the number one cause of fatal residential fires, and bedrooms and living rooms are where nearly half of all fire deaths occur. Lastly, older residential structures were shown to have much higher fire death rates than newer ones.

¹ Fire Death Rate Trends: An International Perspective, United States Fire Administration, May 1997.

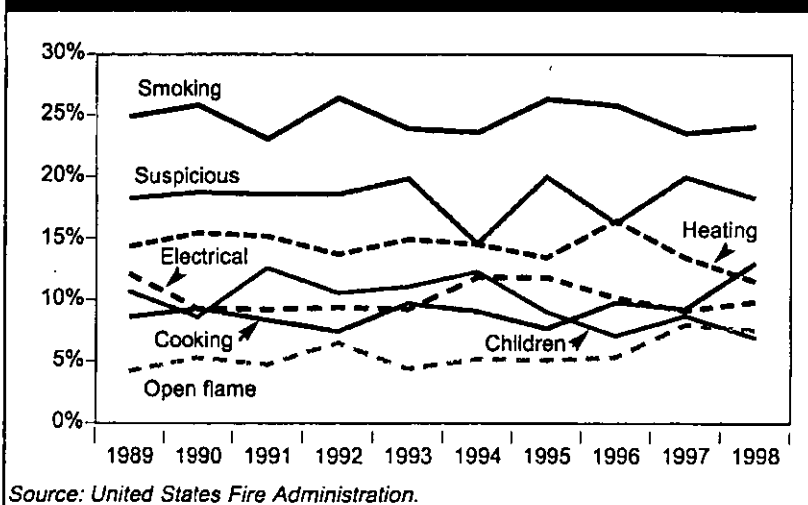
² The data are compiled by the USFA but recorded by 13,000 US fire departments that participate in the National Fire Incident Reporting System (NFIRS). Data is available in *Fire in the United States 1989-1998* 12th Ed.

³ Commissioned by the California Building and Industry Association.

⁴ NAHB: Residential Fire Survey, 1987.

Elliot Eisenberg is an economist with the NAHB Housing Policy Group. For more information he can be reached at eeisenberg@nahb.com.

Figure 3. Leading Causes of Residential Fires, 1989-1998



MUNICIPALITY OF ANCHORAGE



Office of the Mayor

Phone: 907-343-7100

FAX: 907-343-7180

Mayor Dan Sullivan

February 3, 2010

The Honorable Linda Menard
Alaska State Legislature
State Capitol, Room 9
Juneau, AK 99801

Re: Proposed work draft of SB129

Dear Senator Menard:

I have reviewed the proposed work draft of SB129 (dated 1/4/10) and I appreciate your efforts to protect local decision-making requiring sprinklers in certain limited or special situation residential occupancies. You may be aware that when this legislation was first introduced, the Municipality of Anchorage had concerns about the implementation of the bill. I am pleased to see that a reasonable outcome has been achieved and based on the preservation of the conditions below; I favor the legislation currently in front of me:

- 1 The right to require "sprinkler fire protection systems" in new construction on a case-by-case basis. For example, a new home adjacent to a wooden historical structure, new home built in a high woodland fire danger zone, or other reasonable situation; and
- 2 The right for a local government to choose, after an extended open and transparent public process, to implement a mandatory "sprinkler fire protection system" requirement in the construction of all new one and two family residences.

The extra public process required is appropriate for the issue of fire sprinklers in one and two-family dwellings. The issue is complicated and would require significant technical review in Alaska's cold climate. Likewise, the potential economic impacts on the homeowner would require significant scrutiny. As such, the requirement for the extra public hearings and advance public notice seems reasonable.

Thank you for your work and for providing the opportunity for me to comment. Please contact my intergovernmental affairs director, Stacy Schubert, if you have questions. She can be reached at 343-7112 or by email: Schuberts@muni.org.

Sincerely,

Dan Sullivan
Mayor



ahba

Affiliated with NAHB

February 10, 2010

The Honorable Bob Herron
Alaska House of Representatives
State Capitol Building
Juneau, Alaska 99801

Dear Representative Herron:

House Bill 202 has the full support of the Anchorage Homebuilders Association. As President, I speak for over 300 members who wholeheartedly agree that making fire sprinklers mandatory belongs at the local government level.

There are several reasons our association strongly supports this legislation: increased safety features in new homes in recent years have dramatically decreased fire injury and death; fire sprinklers are a burdensome cost to the homeowner and have significant maintenance issues; there are many concerns pertaining to cold climate installation.

Local government provisions in HB 202 leave it to communities to decide for themselves, after a public process, if requiring fire suppression systems is right for their area. Cost benefit analyses and public hearings would be required before a city adopted the fire sprinkler code. Given our concerns with making fire sprinklers mandatory, we feel HB 202 is a very fair compromise and maintains local control over the issue.

Please contact me if you would like to discuss this further.

Sincerely,



Andre Spinelli
President
Anchorage Home Builders Association

"Building Better Places to Live, Work and Play"

ANCHORAGE HOME BUILDERS ASSOCIATION, INC.

8301 Schoon Street, Suite 200 • Anchorage, AK 99518 • (907) 522-3605 • Fax (907) 522-3757





February 10, 2010

The Honorable Bob Herron
Alaska House of Representatives
State Capitol Building
Juneau, Alaska 99801

RE: HB202 "An Act relating to state and municipal building code requirements for fire sprinkler systems in certain residential buildings."

Dear Representative Herron:

On behalf of the membership of the Kenai Peninsula Builders Association, I would like to express our support of House Bill 202. We strongly believe that mandating fire sprinklers in one and two family adds a significant cost to a home owner and does not target the homes where fire deaths are occurring.

The current version of HB 202 ensures that the decision to mandate fire sprinklers is maintained at the local level. Built into the legislation are good public process parameters and special situations for fire sprinklers to be placed in homes near historical buildings, for example.

As President of the Kenai Peninsula Builders Association, we strongly urge the passage of HB 202 along with the Alaska State Home Building Association to ensure mandating fire sprinklers is left to local communities.

Please contact me with any questions you may have or to further discuss the issue.

Sincerely,

Bob Hammer
President
Kenai Peninsula Builders Association



6177 E. Mountain Heather Rd., Suite 6
Palmer, Alaska 99645

February 15th, 2010

The Honorable Bob Herron
Alaska House of Representatives
State Capitol Building
Juneau, Alaska 99801

Dear Representative Herron:

As President, I speak for over 120 members who wholeheartedly agree that making fire sprinklers mandatory belongs at the local government level. House Bill 202 has the full support of the Mat-Su Homebuilders Association.

Increased safety features in new homes in recent years have dramatically decreased fire injury and death; fire sprinklers are a burdensome cost to the homeowner and have significant maintenance issues; there are many concerns pertaining to cold climate installation. For these reasons, our association strongly supports this legislation.

HB 202 leaves it to communities to decide for themselves, after a public process, if requiring fire suppression systems is right for their area. Public hearings and cost benefit analyses would be required before a city adopted the fire sprinkler code. HB 202 is a very fair compromise and maintains local control over the issue.

Please contact me if you would like to discuss this further.

Sincerely,

A handwritten signature in black ink, appearing to read "JD", written over a faint, larger outline of the signature.

Jeremy Doolaard
President
Mat-Su Home Builders Association



Southeast Alaska Building Industry Association

P.O. Box 6291 • Ketchikan AK 99901 • (907) 247-4903 • Fax (907) 247-6903
E-mail: ketchikanhba@hotmail.com • Web site: <http://www.sealaskabuilders.com>

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SE Alaska BIA

February 10, 2010

The Honorable Bob Herron
Alaska House of Representatives
State Capitol Building
Juneau, Alaska 99801

Dear Representative Herron:

As President of the Southern Southeast Alaska Building Industry Association, I am writing in support of HB 202 **“An Act relating to state and municipal building code requirements for fire sprinkler systems in certain residential buildings.”** Based on current information, injury and death due to fires has significantly been reduced over the past two decades due to increased safety features in the construction of newer one and two-family homes. Requiring fire sprinklers unnecessarily burdens the homeowner with added costs and maintenance.

Passage of HB 202 maintains local government control over the requirement of fire sprinklers in new homes. The current version of the bill allows municipalities to decide, after a public process and cost benefit analysis, whether to implement fire sprinkler regulations in new one and two-family homes.

We fully support this legislation, along with the Alaska State Homebuilding Association. Please don't hesitate to contact me if you wish to discuss our Association's position.

Sincerely,

James Byron II, President
Southern Southeast Alaska Building Industry Association



ALASKA ASSOCIATION OF REALTORS, INC.
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Telephone (907) 563-7133 Fax (907) 561-1779
www.alaskarealtors.com

3/2/2010

Senator Joe Paskvan
Chairman, Senate Labor and Commerce Committee
State Capital Room 7
Juneau, Alaska 99801

Dear Senator Paskvan,

The Alaska Association of Realtors® has reviewed the substitute bill for SB 129. While our Association was in support of the original bill, we are also able to give our support to the substitute bill and appreciate the compromise that it brings to the table.

We are grateful to those Alaskans that are truly concerned for the safety of our citizens, but their opposition to this bill is more damaging than they can possibly realize. The mandate of sprinkler systems will cause a dramatic increase to not just the construction cost of homes, but also to the maintenance, resale and insurance costs. This substitute bill asks that the people that this affects are advised of this incredible burden before the governing body adopts the new rule.

The cost to install these systems in a single family residence has been quoted from those in the building industry at \$20,000-30,000.00.

The cost of performing regular maintenance on the systems will be added to the homeowner's budget.

As is typical for many private residences, the systems will not be properly maintained and will be subject to leaking and system failure.

At the time of sale, a home inspector will not take responsibility for this type of system and will call for another inspector to check its' integrity. The cost of this inspection and the cost of periodic upgrades required will easily add thousands of dollars to the homeowner's costs at time of sale.

In this extreme climate these systems will experience freeze damage and/or damage from people attempting to winterize the systems with chemicals that may do damage to the system itself. While on the surface one would assume that the addition of sprinkler systems would lower insurance rates, the exact opposite would occur. Because of the high risk of water damage from having these systems in private residences, the costs will actually increase. A house that has suffered major or repeated water damage may not be able to be insured, drastically reducing the value of the average citizen's most important asset, their home.

Mold is married to this issue due to the moisture issue. This will add additional health risks, higher insurance rates or inability to obtain insurance coverage, the same increase in resale costs and loss of home value problems.





ALASKA ASSOCIATION OF REALTORS, INC.
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If a landowner wishes to build a home and has the ability to use a private well, another level of costs and problems are placed on the back of the homeowner. A sprinkler system is required to work separately of the houses power system. When power is cut to a house, there will need to be a self starting generator to run a pump that will need to be connected to a water source that can supply the minimum amount of water required by the new law. That may be a separate well or a holding tank that will need to be installed. These systems will also need to be maintained on a regular basis and are also subject to failure in our extreme environment.

The state should not allow the citizens of our state to be subjected to this incredible burden without proper notification and input. It is the right thing to do and we urge you to move this important and vital legislation.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'D B Somers', written in a cursive style.

David B. Somers
Industry Issues Chairman
Alaska Association of Realtors®



Rob Earl

From: Jeff Tucker [jtucker@northstarfire.org]
Sent: Tuesday, March 09, 2010 11:09 AM
To: Jeff Tucker; Sen. Joe Paskvan; Sen. Joe Thomas; Sen. Con Bunde; Sen. Kevin Meyer; Sen. Bettye Davis; Sen. Linda Menard; Sen. Gary Stevens; Rep. Bob Herron
Cc: Jeff Stepp; Doug Letch; Rob Earl
Subject: CS SB129
Attachments: AFCA Comments on Side by Side Comparison.pdf; Municipal Code Adoption Processes.pdf; Summary of Adoption Process.pdf

Dear Senator Paskvan,

In a meeting that you had yesterday with Juneau Fire Marshal Dan Jager a request was made for further information on the local Building Code Adoption Process. I have compiled a listing of those procedures in the attached document. I have also attached a memo from the City and Borough of Juneau with regards to adoption of building codes.

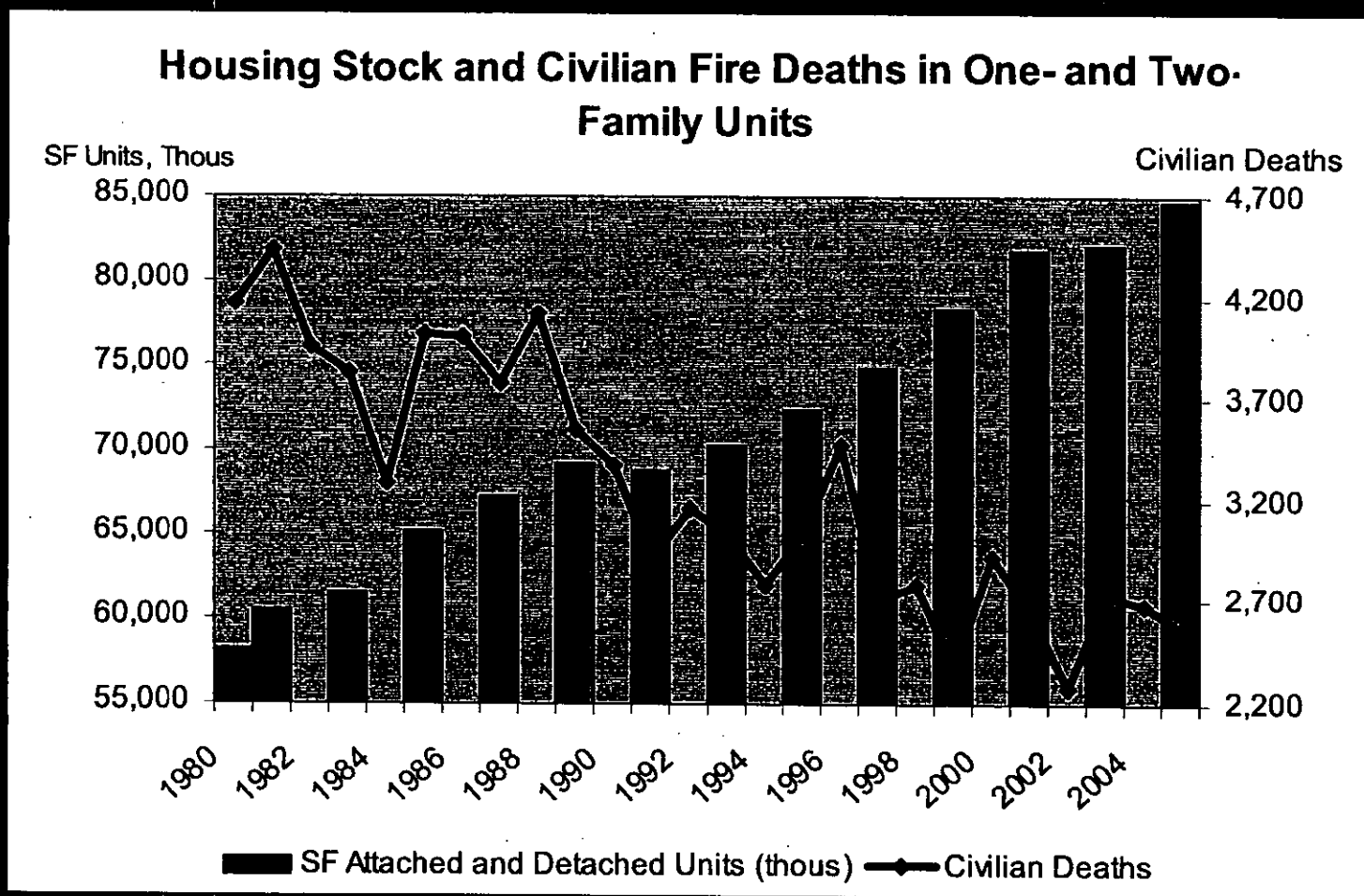
I would be happy to obtain all of the jurisdictions Building Code Adoption procedures and provide that to your committee for review if requested.

Thank you,

Jeff Tucker, Fire Chief
North Star Volunteer Fire Department
President Alaska Fire Chief Association
2358 Bradway Road
North Pole, Alaska 99705
(907) 488-3400 - Office
www.northstarfire.org
www.alaskafirechiefs.org

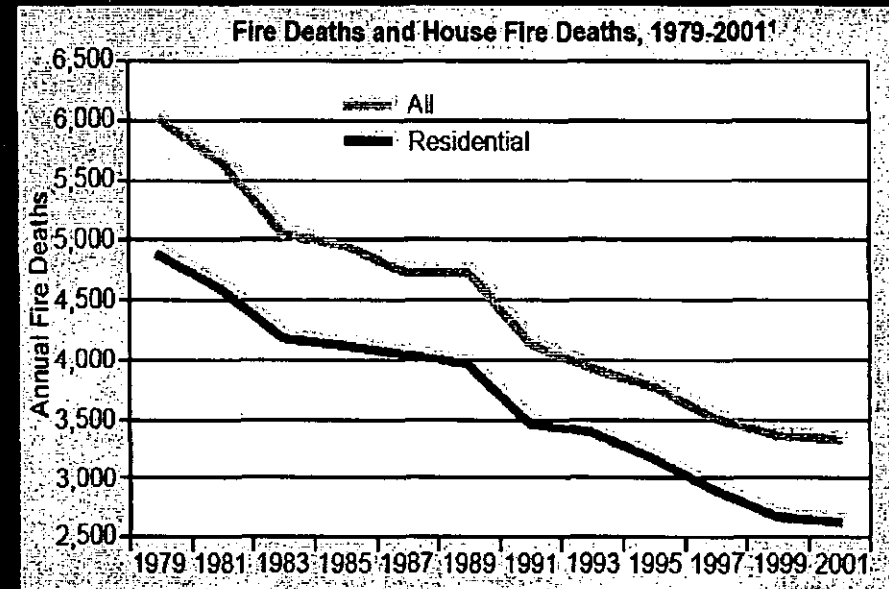
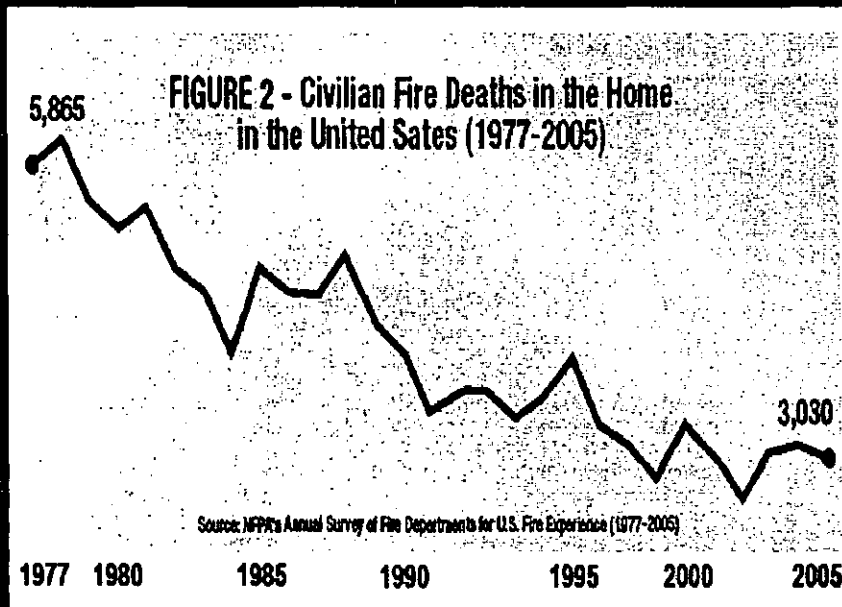
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Decline in Home Fire Fatalities



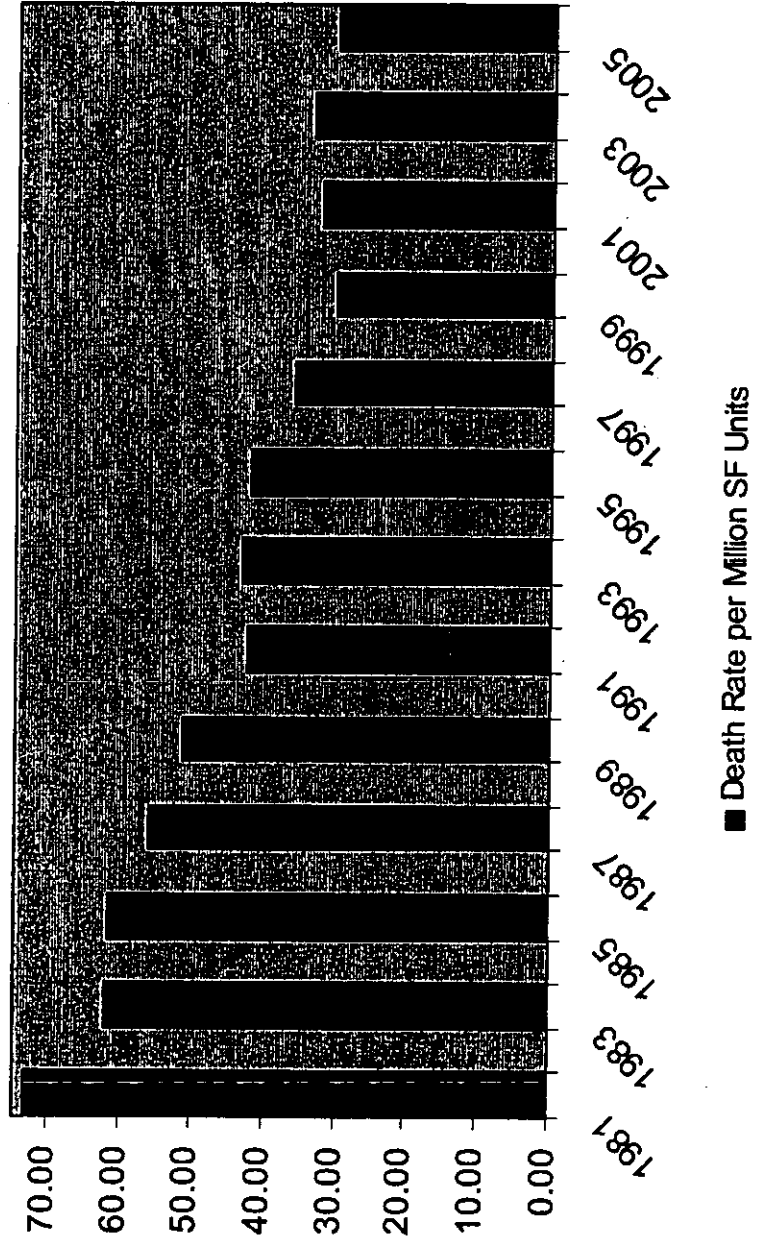
Decline in Home Fire Fatalities (cont.)

- Advances in construction practices and materials, the effectiveness of smoke alarms, and fire prevention and education efforts are working.
- Fire deaths continue to decline year after year.
- 58% drop in the actual fire death rate per million persons from house fires – from 1979 – 2003 according to the Center for Disease Control.



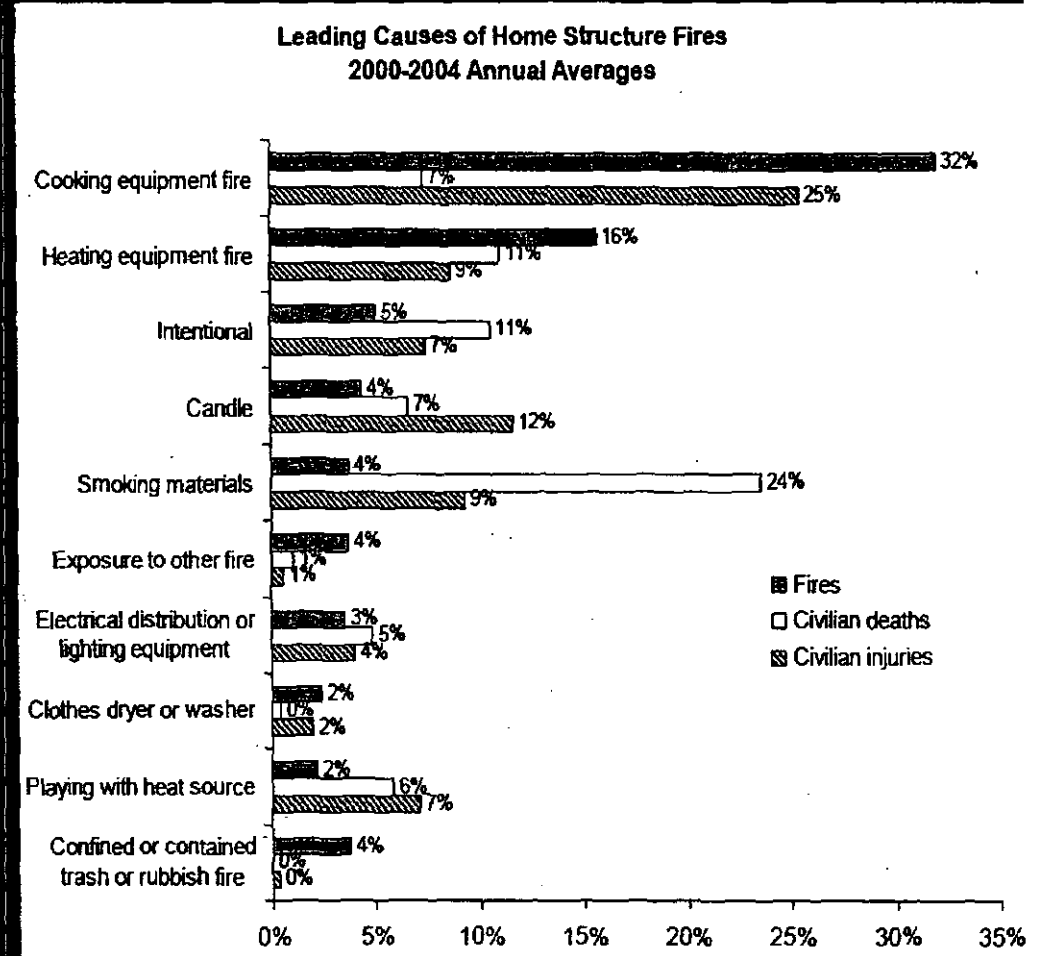
Decline in Fire Death Rate

Civilian Fire Death Rate per Million Single Family Units



Leading Causes of Fire

- Smoking materials remain the leading cause of home fire deaths & property damage.
- Only 4% of reported home structure fires were started by smoking materials, but these fires caused 700 or 24% of the home fire deaths.
- Intentionally set fires accounted for 19,000 reported home structure fires and 310 civilian fire deaths.



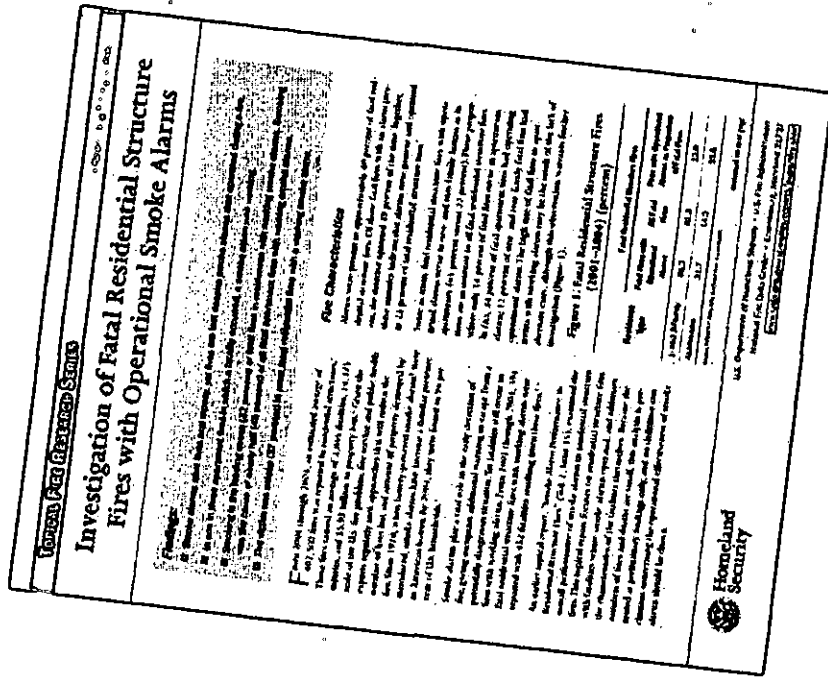
Source: Home Structure Fires, 2007 NFPA

New Homes are Safer

- Mandating fire sprinklers does not target homes where fire deaths are occurring.
- New technology and modern building codes make today's new homes safer
- Code provisions and technological innovations provide safety
 - fire blocking
 - draft stopping
 - emergency escape and rescue openings
 - electrical circuit breakers
 - outlet spacing and capacity
 - fire walls and fire separation
 - Adequate heating systems and energy efficient homes
 - interconnected hardwired smoke detection systems
- Versus older homes with antiquated or nonfunctioning smoke detectors.
 - Must be reached through education and public outreach
 - Very few fire deaths occur in homes with working smoke alarms
 - Smoke alarm technology continues to improve

Smoke Alarms Work

- US Fire Administration and National Fire Protection Association data continue to affirm that the majority of home fire fatalities occur when there are no operational smoke alarms.
- Installing and maintaining smoke alarms is the most practical, cost effective and proven way to reduce home fire fatalities in the U.S.



Every home should have working smoke alarms.

That's the best way to help prevent injury and death from house fires.

In the last 20 years, the number of people who have died as a result of a fire in their homes has plummeted. Why? Experts in the fire protection and building industries agree: The increasing use of smoke alarms, now required in all building codes, is the biggest reason. Technological advances in home construction and better fire safety education are two others.

That's the good news. But we can do more. Even though new homes are significantly safer, there is still plenty of older housing stock in our country that was constructed back in the days when building codes weren't enforced as they are today – or that didn't include today's stringent requirements for electrical safety, heating systems, building materials, construction techniques and emergency escape. Most importantly, everyone would be a lot safer if every house had **working** smoke alarms.

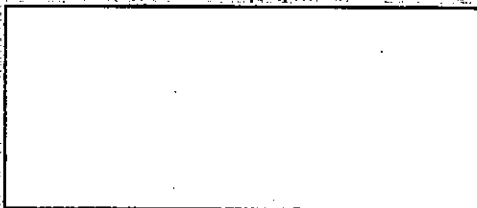
smokealarmswork.com

Think Safety – Today.

The importance of operational smoke alarms in preventing residential fire deaths is indisputable. The National Association of Home Builders encourages all home owners to check their own alarms regularly and to support community initiatives to install and maintain smoke alarms in all homes.

Today's Home is Safer.

New homes are built to be more fire-safe than ever before. Technological advancements in construction, more knowledge about how fires start and spread and significant improvements in building science protect today's homes without the need for fire sprinklers. The most significant life-saving advance is the requirement for the installation of sensitive smoke and fire detection systems that are hardwired, interconnected, and have battery back-up. When smoke is detected in any room, every alarm in the home is set off. These systems are in all new homes.



SMOKE ALARMS WORK.

Learn the truth about new homes and fire sprinklers.

Some public safety officials and the sprinkler industry have stepped up their campaign to require fire sprinklers in all new single-family homes and townhouses. They say installing sprinklers is cost effective, affordable, and a proven way of making homes safer. They say that the experts are on their side.



They aren't telling you the whole story.

The goal for all public safety officials is to protect against injury and loss of life. In fact, that's a goal we all have in common: fire fighters, sprinkler installers, and home builders, too. But installing fire sprinklers is expensive, and there exists no legitimate study showing that overall, they do a better job of saving lives in home fires.

Most importantly, installing fire sprinkler systems in new homes does not prevent death and injury from fires in older homes. Fire sprinklers may be a solution for those who want them, but they are not a solution for reducing fire deaths where they commonly occur.

Price Does Matter

For each additional \$1,000 added to the price of a home, 250,000 potential home buyers are priced out of the market. Using a very conservative estimate of \$3,000 for a fire sprinkler system in the average home, 750,000 homebuyers must remain on the sidelines – and not enjoy the safety benefits of a new home.

We also know what it costs to keep fire departments staffed and ready to respond to emergencies. As new homes are built and more families move into a community, it's natural for those costs to rise.

But mandating sprinklers doesn't halt the cost increase. A fire department does lots more than fight fires. Fire fighters field emergency medical requests, respond to traffic accidents, and constantly train and prepare for emergencies. Actual time spent fighting fires? About 3 percent, nationally. Installing sprinklers isn't likely to bring down these fire prevention costs.

Alarms work. Here's why.

Studies show that the risk of fire death is greatest in cases of "delayed discovery," typically when the home's occupants are asleep or when there's a smoldering fire, like one started by an unattended cigarette. Smoke alarms work because they alert occupants in time to react.

Alarms also work because they are cheaper and easier to install – \$200-\$400 will fully protect a 2,000-square-foot home, while a sprinkler system likely will cost \$3,000 and even \$4,000 or more for a home of that size. And that's before you take into account the special tanks and pumps the sprinkler system will need if the house is on well water. These estimates are for new construction: Retrofitting an existing home with sprinklers costs significantly more.

Thanks to widespread installation of residential smoke alarm systems in recent years, Americans are safer than they've ever been. In fact, according to an August 2006 U.S. Fire Administration study, only 3.7% of all residential fire deaths from 2001-2004 were reported as occurring in homes with working smoke alarms.

MEMORANDUM

CITY/BOROUGH OF JUNEAU
155 South Seward Street, Juneau, Alaska 99801

DATE: March 2, 2010

TO: Eric Mohrmann, Fire Chief *Eric Mohrmann*
City and Borough of Juneau

FROM: Debbie Purves, Building Codes Official *Debbie Purves*
Community Development Department

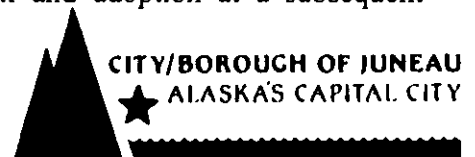
SUBJECT: Summary of Adoption Process for Model Building Codes

The City and Borough of Juneau (CBJ) established a Building Code Advisory Committee (BCAC) with the adoption of Resolution Serial No. 1116, approved July 1985, and further modified by Resolution Serial No. 1130, adopted September 9, 1985. The purpose of the committee is to review and propose amendments to the technical codes adopted by reference in CBJ Title 19 Building Codes to the CBJ Assembly for adoption. The technical codes currently include the International Building Code (IBC), International Residential Code (IRC), International Existing Building Code (IEBC), International Mechanical Code (IMC), International Fuel Gas Code (IFGC), International Fire Code (IFC), International Property Maintenance Code (IPMC), as well as the Uniform Plumbing Code (UPC) and the National Electrical Code (NEC).

The BCAC consists of five members appointed by the CBJ Assembly for staggered three year terms consisting of an Architect, Electrical Engineer, Civil Engineer, Mechanical Engineer and a Contactor. The Building Official and coordinating Fire Chief are ad hoc members of the committee. The Building Code Advisory Committee meetings are advertised per public meeting requirements and are open to the public. Minutes are taken and transferred to the City Clerk for permanent archiving.

Updated model building codes are published on a 3-year cycle. These published codes are not applicable or enforceable until they are adopted by CBJ City Assembly through the ordinance adoption process. Juneau's BCAC thoroughly reviews currently adopted model codes with the changes in the next set of model codes, as well as existing local modifications of those codes for continuance with the next set of model codes. In addition, the BCAC reviews State Fire Marshal's modifications to the model codes for incorporation into CBJ's local modifications.

Typically the BCAC takes two 2 to 2 ½ years to review the new model codes and present the proposed changes first at a public hearing of a CBJ Assembly subcommittee, Public Works and Facilities Committee (PWFC). The PWFC then, if agreeable to the proposed changes, directs the CBJ Law Department to prepare an ordinance to be presented to the CBJ Assembly. The Building Official prepares a summary document to explain the significant changes to be presented along with the ordinance to the CBJ Assembly to be adopted at a Public Hearing. The CBJ's process for adoption of ordinances is to introduce the ordinance at the first hearing where no testimony is taken and then schedule the ordinance for public comment, discussion and adoption at a subsequent hearing.



CITY OF SEWARD
P.O. BOX 167
SEWARD, ALASKA 99664-0167



- Main Office (907) 224-4050
- Police (907) 224-3338
- Harbor (907) 224-3138
- Fire (907) 224-3445
- City Clerk (907) 224-4046
- Community Development (907) 224-4049
- Utilities (907) 224-4050
- Fax (907) 224-4038

March 3, 2010

Representative Bob Herron
Co-Chairman, House Community & Regional Affairs Committee
State Capitol Room 411
Juneau, Alaska 99801

Representative Cathy Munoz
Co-Chairman, House Community & Regional Affairs Committee
State Capitol Room 409
Juneau, Alaska 99801

Dear Co- Chairs & Committee Members,

The City of Seward wishes to voice its opposition to the passage of HB 202. This bill as written infringes on our rights as a home rule city and limits opportunities to reduce the cost of government. The bill does not allow us to require a single homeowner to install a sprinkler system for any reason without passing an ordinance and completing a cost and benefit analysis. Additional specific reasons for our opposition are listed below.

- This bill limits the ability of the municipality to consider different fire protection options.
- This bill increases the number of public hearings and increases administrative requirements.
- The bill does not consider the processes the deferred jurisdictions have in place for the adoption of building, fire and mechanical codes.
- This bill would severely impact the community of Seward. We have used the sprinkler requirement as a way to reduce costs to a developer because of the local ordinances.
- This bill if passed will drive up costs for fire protection in our community. This is because of a need to acquire a vehicle that would have the capability to transport water supplies. We would also face additional costs for a building to house that vehicle (all current space is being utilized).
- The bill as written does not establish any process that would be used when adopting building or fire codes prepared by a national code group that may incorporate the inclusion of residential sprinklers. When we adopt National Codes the City does not need a counter approach from the State. Such an approach is counterproductive and often entails additional cost and administration.

We would be happy to answer any questions on our position that you or the committee members may have for us. You can contact us through the City Manager's email poates@cityofseward.net or at 907-224-4047.

Sincerely,


Phillip Oates, City Manager


Willard Dunham, Mayor



Plumbers & Pipefitters U.A. Local Union 262

1751 Anka Street

Juneau, Alaska 99801

Phone (907) 586-2874 FAX (907) 463-5116

E-mail: lu262bm@uanet.org



March 4, 2010

The Honorable Cathy Munoz
House of Representatives
Alaska State Capitol
Juneau, AK 99801-1182

Dear Representative Munoz:

My name is Max Mielke. I am the Business Manager of the United Association of Plumbers and Steamfitters Local 262 and I oppose HB 202.

I represent 100 journeyman and apprentices throughout SE Alaska. I'm also a 56 year resident of Alaska. From 1983-2003, I was a volunteer firefighter in Juneau. The last 5 years as a volunteer firefighter I was a District Chief.

Because of my first hand experience as a fire fighter I have seen the devastating and long lasting effects to life and property due to fire. I have friends who have lost everything in a fire. Automatic sprinkler systems not only save thousands of lives but billions of dollars in property each year. National Association of Home Builders (NAHB) believes fire sprinkler systems are expensive. I tend to disagree. We have contractors, who are signatory with Plumbers & Pipefitters UA Local 262, who say installation of a residential sprinkler system costs on average one percent of the total cost of the house and could be done much cheaper if the home owner installs it themselves.

NAHB says residential construction technology over the last 20 years has dramatically dropped the number of fatal fires in Alaska and the US. I would like to point out that residential construction is only part of the equation. It's also a combination of education, smoke detectors and sprinkler systems.

I believe it should be left up to local municipalities to make their own decisions on residential fire sprinkler systems. These processes are already in place and are dealt with on a case by case basis at the local level.

Sincerely,

Max R. Mielke
Business Manager
UA Local 262

Cc: Representatives Herron, Harris, Tuck, Stoltze, Dahlstrom, Keller, Johansen, Millett, Foster, Ramras, P. Wilson, Keller, Kelly, Johnson, Crawford, Gatto



217 Second Street, Suite 200 • Juneau, Alaska 99801
Tel (907) 586-1325 • Fax (907) 463-5480 • www.akml.org

March 19, 2010

Representative Bob Herron
House C&RA Committee
State Capitol
Juneau, Alaska 99811

RE: SB 129 and HB 202

Dear Representative Herron,

As you and I spoke about last Tuesday, this bill has gone on waaaaaaaaaaaaaaaaaaay too long. I don't think AGIA took this long. To that end, the Alaska Municipal League has discussed their position with many people and would like to see this issue be put to rest.

The two remaining issues giving us heartburn are:

1. The requirement for a municipality to prepare a cost-benefit analysis of the proposed ordinance as it may apply to the residential buildings to which the proposed ordinance or ordinance amendment will apply; and
2. The requirement for a public notice at least ninety days before the first scheduled public hearings for the ordinance, to include at least three public hearings.

Our main concern is that this bill sets a terrible precedent. We will not change our minds of that view. This is the first bill we have found, going back through archives, that sees the state attempting to dictate local building codes.

However, if the cost-benefit analysis is removed from the bill before it passes out of committee, the Alaska Municipal League will not fight the bill, contingent upon the Alaska Home Builders Association and the Alaska Realtors Association agreeing to the same language. If all parties agree, we will not actively support it, but we will not fight it. We will remain neutral.

I hope this letter can allow all of us involved to come to some sort of win/win resolution.

Sincerely,

Kathie Wasserman
Executive Director

Co-Chairs Rep. Herron and Munoz
Members of the Community & Regional Affairs Committee

Several years ago, I had the honor of serving three terms on the Juneau Assembly. Over that nine year period our body voted to adopted the most recent updated Uniform Building Code and incorporate it into the CBJ Building Codes. Frankly, those revisions were adopted in one motion and with minimum review by the members. And that procedure has been and will be followed by every local governing body in Alaska as it considers the latest revision to the UBC. But this latest revision has a major code ~~revision~~ ^{change} that affects every home owner in Alaska. That revision will be the requirement for all new construction of or remodeled single family homes and duplexes to have automatic sprinkler systems installed.

The costs for complying with this new code will be born entirely by the home owner - no one else. Initial costs are estimated to cost between \$10 and \$20,000 depending on the home's location in Alaska. The sprinkler system must be maintained and inspected annually by a certified technician. Currently, there are certified system testers only available in our major Alaskan cities. Remote residents will face an even larger challenge and greater costs to get the re-inspection. If a home owner fails to get an annual inspection, his home owner's insurance will be voided. With no insurance coverage, the lender will take steps to obtain insurance adding those costs to the home owner.

Every local government is challenged to provide affordable housing opportunities for its residents. How does adding \$20 thousand dollars to home construction costs improve the affordability of homes? And if this bill is not adopted, there will be other issues. At what point in a home remodeling project will there be a requirement to auto sprinkle the entire home? Many homes in Alaska are on wells which do not have the flow capacity to meet minimum standards for a residential sprinkler system. This likely means there will be a requirement to install an all-weather outside storage tank complete with circulating pumps to prevent freezing. And what about the home that is not on a public electric service grid? *And the system will also require an automated notification system adding more expense*

I could go on with many other illustrations of the onerous burdens this mandated automated fire sprinkler system will bring to Alaska's homeowners. Earlier this week, several members of the Association of Alaska Realtors were in town asking for your support to adopt H.B. 202.

I am here this morning to continue urging your support for the adoption of this legislation and do what's best for all home owners in Alaska.

Thank you for the opportunity to testify.



NFPA

NW Regional Office, 86 SW Century Dr, #360, Bend, OR 97702

March 13, 2010

House Community & Regional Affairs Committee

Testimony in opposition to CS HB202 R

My name is Crosby Grindle and I am with the National Fire Protection Association (NFPA). We are a private, Not-for-Profit Association that has worked for over 100 years to advance fire and life safety initiatives through research, education and the development of consensus codes and standards. I urge you to vote NO on Committee Substitute HB 202.

It is important for local jurisdictions to have the ability to equally scrutinize the safety needs in their community, especially home fire sprinklers. There are many reasons why a local jurisdiction would consider home fire sprinklers:

- Access problems
- Water supply problems
- FD deployment issues
- Desire to improve their community insurance rating.

The reason this is important is that every year, fires in one- and two-family dwellings cause significantly more fire deaths, fire injuries, fire property damage and fireground firefighter deaths than in any other occupancy (83% of all fire deaths and 89% of all fire injuries).

Residential fire sprinklers are significantly different than what you find in commercial applications or often portrayed in the movies. To clarify some of your questions and address the concerns raised by opponents of these life safety systems I offer these facts.

- The standard for residential sprinklers is a life safety standard. It is written and designed expressly with this in mind and as such the requirements are significantly different than those found in the commercial standard. There are no monitored alarm requirements. There is no provision for retrofitting existing homes with residential sprinklers.
- Some have said smoke alarms are enough. Smoke alarms are vital, and NFPA is a leading smoke alarm advocate, but smoke alarms are detection devices only, and they may not provide adequate protection for the highest risk occupants – young children, older adults and the disabled. In fact smoke alarms are operating in 37% of home fire fatalities.
- You may have heard some people using a statistic of 99.5% to illustrate the effectiveness of smoke alarms in reducing home fire deaths. This NFPA statistic estimates the likelihood of surviving a home fire when a working smoke alarm is present. It is based on the total number of fires, the vast majority of which are not fatal. Does that mean 3,000 deaths every year are acceptable? Most people would say no. It is similar to saying that because the survivability of motor vehicle accidents is also around 99.4%, that we should not look for ways to improve highway safety.
- You may have heard that the fire sprinkler piping will freeze, break and cause water damage. These systems are no different than plumbing systems in a home. There are ways to prevent plumbing and sprinkler systems from freezing. If a sprinkler system is going to freeze, then the home plumbing system is going to freeze. While Alaska represents some climatic extremes, it is reasonable to point out that there are many successful residential sprinkler code adoptions in Minnesota and the Chicago area.
- You may have heard that fire sprinklers are expensive. A recent national study shows that the average cost for sprinklers is \$1.61 per sprinklered square foot. That is about the cost of a carpet upgrade in a new house. That is not expensive. In fact, in the sponsor statement for CS HB202 it states that the National Association of Home Builders estimates the entire cost of an average home sprinkler system at \$3,000.
- You have heard that testing these systems is a major issue. It is not. Homeowners are capable of doing most of the testing and maintenance themselves. It simply requires the homeowner ensuring that the area around

the sprinkler head is not blocked and that the main control valve remains on. There are no requirements for expensive "certified" third party inspections.

- You have heard some people say the fire problem is not in "new homes" but in "old homes" and that "new homes" are "safer." Statistically, the only fire safety issue that is relevant to the age of the home is outdated knob-and-tube wiring. Beyond that, age of the home has little to nothing to do with fire safety. Instead, it has vastly more to do with the occupants' actions in the home and the contents of the home. A fire in a living room at two o'clock in the morning that goes to the flashover stage will expose the occupants to the same life-threatening levels of smoke, toxic gases and heat in both a new and old home that was built 100 years ago and a home that was built two weeks ago.
- Newer construction is also "lightweight construction" and newer home designs are typically more "open." This means fires spread faster and cause structural failure significantly faster than homes built years ago. Additionally, newer furnishings and floor coverings burn faster and hotter. A recent UL study demonstrated a frighteningly significant increase in fire spread in a newer style home compared to a "legacy" style home.

The NFPA is opposed to any legislation that places restrictions or burdensome steps on the local fire service for implementation of the residential sprinkler standard now found in all national codes. I am always available and pleased to answer any questions you may have.

Respectfully submitted

Crosby Grindle, NW Regional Manager

A Side-By-Side Comparison of the Public Process:

Current Statute vs. Committee Substitute for Senate Bill 129

The Committee Substitute for Senate Bill 129 seeks to put in statute a more robust public process if a local government plans to adopt a code requiring fire sprinklers in all one or two family dwellings.

Below is a side-by-side comparison of current law and the CS for SB 129.

AS 29.25.020

1. Under subsection three (3) of AS 29.25.020, a municipality must post notice at least **five days** before a public hearing a summary of the ordinance and a notice of the time and place of the hearing.
2. The governing body may adopt the ordinance after **one (1)** public hearing.

CS for Senate Bill 129

1. Notwithstanding AS 29.25, a governing body must post notice at least **30 days** before the first scheduled hearing.
2. The governing body shall schedule three public hearings in a **60 days** period
3. The governing body may not consider the proposed ordinance sooner than **60 days** after the first public hearing.

Side-By-Side Comparison of the Public Process to make what some Municipalities are already doing.

AS 29.25.020	CS for Senate Bill 129	Fairbanks Code Adoption Process	City & Bor. of Juneau Code Adoption Process	Ketchikan code Adoption Process	Municipality of Anchorage Code Adoption Process						
		All these meetings are public and notices of these meetings are posted on line, in news paper, at City Hall. Plus word of mouth.									
1	Post 5 days prior to first hearing	1	Code Officials work together and review propose changes and formulate final draft.	1	Professional architects, engineers and contractors applications are reviewed by the Assembly Human Resources Committee and they form a recommendation to the Assembly in open public session for appointment to the Code Review Advisory Board.	1	Ketchikan Fire Department follows along with the State of Alaska during their changes and amendments to the code. We will provide suggestions and comments during this process in the hopes of providing a cohesive set of codes. As in the latest change from the 2003 IFC to 2006 IFC.	1	The code review portion starts with the formation of committees which are chaired by a member of the building board. Currently there are seven committees reviewing the various codes up for adoption. The Building Official sends out a mass email with over 600 contacts requesting interested parties to respond. The committees are made up of anyone who responds to the call for committee, within reason and consist typically of 10-15 members. The committees have representatives of the private sector and the public sector. Once the committees are formed they meet to determine their schedule.		
2	May adopt an ordinance after one public hearing.	2	Post 30 days prior to first hearing.	2	Proposed changes are presented to the Code Commission. Code Commission is made up of two Structural Engineers, two architects, one electrical engineer, one mechanical engineer, three general construction contractors and two alternates with experience in construction and design.	2	The appointments to the Code Advisory Review Board (CARB) are confirmed by vote of the Assembly	2	Determines which State of Alaska adopted codes, changes or amendments are to be accepted, deleted, or amended. We then incorporate those changes into a draft of the Codes that would be submitted to the Council after public comments are taken.	2	The review process consist of an comparison of the current code to the proposed code, further examination of the proposed code, a review of the past local amendments as well as the State of Alaska's amendments, and a call for proposed local amendments. The building official's guiding principle for the formation of local amendments has typically been for geographical and climatic reasons.
		3	Shall schedule 3 public hearings in a 60 day period.	3	Code Commission holds several meetings to discuss and review proposed changes and amendments. Commission seeks input from concern citizens.	3	The CARB meets periodically over a 2 1/2 year period to review, line by line, all the latest editions of the model codes (International Building, Mechanical, Fire, Residential, etc. codes), the modifications to the model codes affected by the State Fire Marshal Office and local code modifications. These meetings are open to the public and each is advertised before the meeting takes place. Testimony from the public is welcomed and the minutes of the meetings are available to the public.	3	We have several meetings with the effected city department heads to discuss potential changes to the codes and their effects on the city of Ketchikan, and accept input from these areas of expertise.(Engineering, Water, Sewer, Power, Roads, etc., etc., Departments)	3	All proposed local amendments are submitted to the committee for recording and subsequent voting before they are compiled and submitted to the building official for proper formatting. This step may take 3-4 months to complete.
		4	May not consider ordinance sooner than 60 days after first public hearing.	4	Final draft of the code changes are put together and put into an proposed ordinance Ordinance is given to the council members and brought up for first reading	4	The CARB presents its recommendations to the Assembly Public Works Committee. The Assembly Public Works Committee consists of Assembly Members elected by the citizens of the community to represent them. These meetings are advertised and are open to the public. Public testimony is welcomed and minutes of the meetings are available to the public. The Public Works Committee may modify or delete any of the recommendations.	4	We offer a Public hearing to discuss changes and this meeting is advertised for as per requirements. We also offer to provide a meeting with the local builders, architects, and engineers for further discussions. This is in addition to the previously mentioned public hearing. We meld relevant considerations into the draft for further discussions.	4	The municipal attorney's office receives the formatted title 23 proposal for review in the second step. This step may take 2-3 months to complete.

Side-By-Side Comparison of the Public Process to Code what some Municipalities are already doing.

<p>5 At Second reading... concern citizens can again comment to the council on the proposed changes</p>	<p>5 The Assembly Public Works Committee presents its recommendations for code adoption and modifications to the full Assembly. A minimum of two meetings, one month apart are held. The first is for introduction of the Ordinance. The second is open to public input and debate as well as modification of the recommendations. Both meetings are advertised.</p>	<p>5 A 30 day comment period is given for suggested changes and further discussions on matters of interest from the input gathered from these meetings.</p>	<p>After this review the proposed title 23 is submitted to the Assembly as an ordinance.</p>
<p>6 Council then takes action (votes up or down).</p>	<p>6 The Assembly votes on the recommendations of the Public Works Committee in open session.</p>	<p>6 Initial presentation to the Ketchikan City Council of staff recommendations, which is followed by an additional 30 day public comment period.</p>	<p>6 Before the ordinance can be approved it shall be subjected to public comment. The ordinance has a public comment period and when it is put on the assembly agenda it can received public testimony before it is voted on by the assembly.</p>
<p>7</p>	<p>7 The adopted code provisions become effective 30 days following the vote.</p>	<p>7 Second presentation to the Ketchikan City Council for a final decision on the codes and amendments.</p>	<p>7 This final step will take a minimum of 30 days to complete. We estimate the 2009 codes will be in place and ready to be enforced starting January, 2011.</p>
<p>8</p>	<p>8 adopted codes begin taking effect.</p>	<p>8 A 30 day window is then in effect prior to the City of Ketchikan Building Officials Office follows a procedure that is generally in line with the above mentioned layout for code adoptions.</p>	

MEMORANDUM

CITY/BOROUGH OF JUNEAU
155 South Seward Street, Juneau, Alaska 99801

DATE: March 2, 2010

TO: Eric Mohrmann, Fire Chief
City and Borough of Juneau

Eric Mohrmann

FROM: Debbie Purves, Building Codes Official
Community Development Department

Debbie Purves

SUBJECT: Summary of Adoption Process for Model Building Codes

The City and Borough of Juneau (CBJ) established a Building Code Advisory Committee (BCAC) with the adoption of Resolution Serial No. 1116, approved July 1985, and further modified by Resolution Serial No. 1130, adopted September 9, 1985. The purpose of the committee is to review and propose amendments to the technical codes adopted by reference in CBJ Title 19 Building Codes to the CBJ Assembly for adoption. The technical codes currently include the International Building Code (IBC), International Residential Code (IRC), International Existing Building Code (IEBC), International Mechanical Code (IMC), International Fuel Gas Code (IFGC), International Fire Code (IFC), International Property Maintenance Code (IPMC), as well as the Uniform Plumbing Code (UPC) and the National Electrical Code (NEC).

The BCAC consists of five members appointed by the CBJ Assembly for staggered three year terms consisting of an Architect, Electrical Engineer, Civil Engineer, Mechanical Engineer and a Contactor. The Building Official and coordinating Fire Chief are ad hoc members of the committee. The Building Code Advisory Committee meetings are advertised per public meeting requirements and are open to the public. Minutes are taken and transferred to the City Clerk for permanent archiving.

Updated model building codes are published on a 3-year cycle. These published codes are not applicable or enforceable until they are adopted by CBJ City Assembly through the ordinance adoption process. Juneau's BCAC thoroughly reviews currently adopted model codes with the changes in the next set of model codes, as well as existing local modifications of those codes for continuance with the next set of model codes. In addition, the BCAC reviews State Fire Marshal's modifications to the model codes for incorporation into CBJ's local modifications.

Typically the BCAC takes two 2 to 2 ½ years to review the new model codes and present the proposed changes first at a public hearing of a CBJ Assembly subcommittee, Public Works and Facilities Committee (PWFC). The PWFC then, if agreeable to the proposed changes, directs the CBJ Law Department to prepare an ordinance to be presented to the CBJ Assembly. The Building Official prepares a summary document to explain the significant changes to be presented along with the ordinance to the CBJ Assembly to be adopted at a Public Hearing. The CBJ's process for adoption of ordinances is to introduce the ordinance at the first hearing where no testimony is taken and then schedule the ordinance for public comment, discussion and adoption at a subsequent hearing.



CITY/BOROUGH OF JUNEAU
★ ALASKA'S CAPITAL CITY

<<GAVEL>>

Let's call the meeting to order.

Let the record reflect that it is 8:00 a.m. on Tuesday, March 23, 2010.

Present are:

Representative Keller

Representative Harris

Representative Millett

Representative Cissna

Representative Gardner

Co-Chair Munoz

And myself, Chair Herron

[At this time I would like to remind everyone to turn off their cell phones.]

This morning we have one item on our agenda:

1. HB 202 Residential Sprinkler Systems

HB 202 Residential Sprinkler Systems

Being rescheduled to a later date will be:

HB 318, UNREGULATED POTABLE WATER SYSTEMS

HB 281, BOARD OF GAME/FISH & GAME COMMISSIONER

We have an amendment that firefighters and homebuilders are OK with. This will make it so that the 3 public hearings on Fire Sprinklers will held during not less than a 60-day period and during not more than 180-day period

From last couple times:

Note Chief Mohrmann letter dated 3.17.10. Paul Michaelson (AK State Homebuilding Assn.) can rebut these points if you like.

Representing Homebuilders Assn: Paul Michelsohn (who we met with Matt Gill)

Jeff Tucker, Alaska Fire Chief's Assn. He has two letters in the committee packet, and an email stapled to docs related to the building code adoption process.



ALASKA FIRE CHIEF'S ASSOCIATION

2358 Bradway Road, North Pole, Alaska 99705

Phone: (907) 488-3400

FAX: (907) 488-6118

March 10, 2010

Representatives Bob Herron and Cathy Munoz
Co-Chairs, House Community & Regional Affairs Committee
State Capitol Room 411
Juneau AK, 99801

Reference: CS HB202

Dear Rep. Herron and Rep. Munoz,

The Alaska Fire Chief's Association has had the opportunity to review CS HB202 and while the bill differs from HB202 the Alaska Fire Chief's Association continues to stand opposed to this bill.

CS SB129, which mirrors CS HB202, has already heard testimony in opposition from the Cities of Kenai, Juneau, Ketchikan, Kodiak, Seward, Sitka, the Fairbanks North Star and the Matanuska-Susitna Boroughs, as well as resolutions passed by the Alaska Municipal League and the Kodiak Island Borough supporting the ability of Alaskan communities to adopt codes and ordinances at the local level.

The State does not place this extraordinary burden on local communities for other ordinance adoption processes. Why is it that the State feels it necessary to do so when a community is trying to determine how best to provide life safety services to its residents? When a municipality adopts building codes there are already in place robust processes that involve community members, building officials, contractors, fire officials, architects, engineers, and others who are best able to determine the needs of the local community. Testimony will be given that outlines the extraordinary steps that a municipality goes through to adopt codes above and beyond a typical ordinance adoption.

There is no State need met by requiring local communities to add additional requirements and expense to their current process. No other ordinance adoption process has the requirement to do a cost benefit analysis. There are actions that a local government takes that have a far greater financial impact to their residents and the community as a whole that the State of Alaska does not require a municipality to undertake the unfunded expense of conducting a cost benefit analysis.

The Alaska Fire Chief's Association again, stands opposed to the adoption of CS HB202

Sincerely,

Jeff Tucker, President
Alaska Fire Chief's Association

A handwritten signature in black ink, appearing to read "Jeff Tucker", is written over a horizontal line.



ALASKA FIRE CHIEF'S ASSOCIATION

2358 Bradway Road, North Pole, Alaska 99705

Phone: (907) 488-3400 FAX: (907) 488-6118

March 11, 2010

Representatives Bob Herron and Cathy Munoz
Co-Chairs, House Community & Regional Affairs Committee
Juneau AK, 99801

Reference: CS HB202 – "Municipal Code Adoption Processes" Document

Dear Rep. Herron and Rep. Munoz,

I want to thank you for allowing me to testify today and I do plan on calling in during the next hearing if there are any additional questions.

As I stated in my testimony today the Alaska Fire Chief's Association, per the request of Senator Paskvan, has taken a comparison sheet developed by Senator Menard that compares CS SB129 (CS HB202) to AS 29.25.020 and added the Municipal Code Adoption Processes for the following communities: City of Fairbanks, City and Borough of Juneau, City of Ketchikan, Municipality of Anchorage, Kodiak Island Borough & City of Kodiak (joint process), City of Seward, Mat-Su Borough and the City of Sitka.

I hope that this information is useful in your review of the testimony we have provided.

The question was asked today "Why are we opposed to additional hearings?" My testimony and that of the municipalities represented today and those who will testify next week is not that we are opposed to additional hearings. Our testimony has been that municipalities far exceed the minimum standards of AS 29.25.020 and those of CS HB202 and the bill is not needed. An examination of attached document "Municipal Code Adoption Processes" will demonstrate that.

There are plenty of opportunities afforded to all members of a community who are so inclined to participate in the code adoption process and we encourage that. If a community were to undertake the discussion of residential sprinkler requirements, I believe that those individuals who are interested would find ample opportunities to participate in the processes already in place in these communities. If the code adoption process for a municipality is flawed, as the testimony today from Paul Michelsohn from Anchorage clearly stated theirs is, then the communities are the best ones to make those changes.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Tucker", written over a horizontal line.

Jeff Tucker, President
Alaska Fire Chief's Association

Municipal Code Adoption Processes

AS 29.25.020	CS for Senate Bill 129	Fairbanks Code Adoption Process	City & Bor. of Juneau Code Adoption Process	Ketchikan code Adoption Process	Municipality of Anchorage Code Adoption Process						
		All these meetings are public and notices of these meetings are posted on line, in news paper, at City Hall. Plus word of mouth.									
1	Post 5 days prior to first hearing	1	Code Officials work together and review propose changes and formulate final draft.	1	Professional architects, engineers and contractors applications are reviewed by the Assembly Human Resources Committee and they form a recommendation to the Assembly in open public session for appointment to the Code Review Advisory Board.	1	Ketchikan Fire Department follows along with the State of Alaska during their changes and amendments to the code. We will provide suggestions and comments during this process in the hopes of providing a cohesive set of codes. As in the latest change from the 2003 IFC to 2006 IFC.	1	The code review portion starts with the formation of committees which are chaired by a member of the building board. Currently there are seven committees reviewing the various codes up for adoption. The Building Official sends out a mass email with over 600 contacts requesting interested parties to respond. The committees are made up of anyone who responds to the call for committee, within reason and consist typically of 10-15 members. The committees have representatives of the private sector and the public sector. Once the committees are formed they meet to determine their schedule.		
2	May adopt an ordinance after one public hearing.	2	Post 30 days prior to first hearing.	2	Proposed changes are presented to the Code Commission. Code Commission is made up of two Structural Engineers, two architects, one electrical engineer, one mechanical engineer, three general construction contractors and two alternates with experience in construction and design.	2	The appointments to the Code Advisory Review Board (CARB) are confirmed by vote of the Assembly	2	Determines which State of Alaska adopted codes, changes or amendments are to be accepted, deleted, or amended. We then incorporate those changes into a draft of the Codes that would be submitted to the Council after public comments are taken.	2	The review process consist of an comparison of the current code to the proposed code, further examination of the proposed code, a review of the past local amendments as well as the State of Alaska's amendments, and a call for proposed local amendments. The building official's guiding principle for the formation of local amendments has typically been for geographical and climatic reasons.
		3	Shall schedule 3 public hearings in a 60 day period.	3	Code Commission holds several meetings to discuss and review proposed changes and amendments. Commission seeks input from concern citizens.	3	The CARB meets periodically over a 2 1/2 year period to review, line by line, all the latest editions of the model codes (International Building, Mechanical, Fire, Residential, etc. codes), the modifications to the model codes affected by the State Fire Marshal Office and local code modifications. These meetings are open to the public and each is advertised before the meeting takes place. Testimony from the public is welcomed and the minutes of the meetings are available to the public.	3	We have several meetings with the effected city department heads to discuss potential changes to the codes and their effects on the city of Ketchikan, and accept input from these areas of expertise.(Engineering, Water, Sewer, Power, Roads, etc., etc., Departments)	3	All proposed local amendments are submitted to the committee for recording and subsequent voting before they are compiled and submitted to the building official for proper formatting. This step may take 3-4 months to complete.
		4	May not consider ordinance sooner than 60 days after first public hearing.	4	Final draft of the code changes are put together and put into an proposed ordinance Ordinance is given to the council members and brought up for first reading	4	The CARB presents its recommendations to the Assembly Public Works Committee. The Assembly Public Works Committee consists of Assembly Members elected by the citizens of the community to represent them. These meetings are advertised and are open to the public. Public testimony is welcomed and minutes of the meetings are available to the public. The Public Works Committee may modify or delete any of the recommendations.	4	We offer a Public hearing to discuss changes and this meeting is advertised for as per requirements. We also offer to provide a meeting with the local builders, architects, and engineers for further discussions. This is in addition to the previously mentioned public hearing. We mold relevant considerations into the draft for further discussions.	4	The municipal attorney's office receives the formatted title 23 proposal for review in the second step. This step may take 2-3 months to complete.

Municipal Code Adoption Processes

	Kodiak Code Adoption Process		Seward Code Adoption Process		Mat-Su Code Adoption Process		Sitka Code Adoption Process
1	The Joint Building Code Review Committee, made up of a licensed plumber, electrician, engineer, and contractor/builder, together with the Fire Department reviews all codes to be adopted and or amended.	1	Code officials follow the State of Alaska's proposed changes and amendments process. These items along with local amendments are incorporated into a draft document.	1	Codes are introduced by Borough staff or by Assembly member(s). If Borough staff introduce Code or Non-Code legislation, it has been prepared with a great deal of due diligence. "Open-houses" have been conducted to elicit public input, affected citizens have been notified by mail, the issue has been posted on the Borough website, etc. Contemporary examples include our building of two new fire stations in the core area (Stations 6-3 and 6-6), our proposed Fire Training Complex, the Hatcher Pass Ski Area, the Port McKenzie Rail Extension, to name a few. Many of our Codes have Advisory Boards that review the Code and allow for public scrutiny prior to the introduction of the Code to the Assembly (such as our).	1	The CBS Building Department tracks and participates in the State of Alaska adoption process and determines which State adopted codes are to be accepted, amended or deleted. The code official then reviews and compares the proposed codes with current codes, reviews local and State amendments, considers proposed local amendments and prepares a draft ordinance.
2	All meetings are scheduled in advance and advertised. They are open to the public. We review the State FM's revisions as well as any changes to the code since the last code cycle.	2	Several meetings are held with elected officials, Department heads, local contractors and builders to discuss and review the proposed changes.	2	For residential fire sprinkler systems, any proposed Code would first be presented to the Planning Commission and the Fire Service Area Board of Supervisors for each fire service area. Each of these Commissions and Boards would hold Public Hearings, and then make a recommendation to the Assembly.	2	Advertised public meetings are held, including at the Builder's Seminar, organized by the CBS Building Department, where public input is actively solicited.
3	We do not have a set number of meetings but instead have enough meetings so the committee is comfortable with their recommendation. In 1999 we had 7 meetings, 2005 we had 2meeting, 2006, 4 and 2008 we had 4.	3	Final draft of the code changes are put together into a proposed ordinance to be introduced to the City Council for the first reading and public comment. Notice of this meeting is provided consistent with the requirements of AS 29.25.020 and the Seward City Code.	3	At the beginning of each advertised Assembly meeting Public Hearing, Borough staff provides a comprehensive overview for the legislation being proposed. Once completed, the general public then has 3-minutes for each person wanting to make their opinions known to the Assembly prior to final vote on the Code.	3	A final draft, incorporating the concerns of builders, designers and the general public is prepared and submitted to the municipal legal department for review and formatting.
4	It is a recommendation from the committee to the City of Kodiak Council and the Kodiak Island Borough's Assembly that starts the adoption process.	4	If approved as introduced the proposed ordinance is published as public reading for the next council meeting, typically a 2 week time frame.	4	Introduction. An ordinance may be introduced by any member or committee of the assembly, or by the mayor or manager, at any regular or special meeting of the assembly. Each ordinance shall be assigned a serial number, and shall be introduced in writing in the form required by ordinance. The clerk shall be provided with the original ordinance and shall make and distribute copies to the assembly, mayor, and manager for introduction.	4	The Building Official then meets with the City and Borough assembly in an open work session to discuss the proposed adoption. The draft ordinance is then presented to the City and Borough Assembly at their regularly scheduled and advertised meeting for first reading. It is brought back at a subsequent meeting for second and final hearing. The discussion at both Assembly meetings is open for full participation from the public.

Municipal Code Adoption Processes

AS 29.25.020	CS for Senate Bill 129	Fairbanks Code Adoption Process	City & Bor. of Juneau Code Adoption Process	Ketchikan code Adoption Process	Municipality of Anchorage Code Adoption Process
		5 At Second reading...concern citizens can again comment to the council on the proposed changes	5 The Assembly Public Works Committee presents its recommendations for code adoption and modifications to the full Assembly. A minimum of two meetings, one month apart are held. The first is for introduction of the Ordinance. The second is open to public input and debate as well as modification of the recommendations. Both meetings are advertised.	5 A 30 day comment period is given for suggested changes and further discussions on matters of interest from the input gathered from these meetings.	5 After this review the proposed title 23 is submitted to the Assembly as an ordinance.
		6 Council then takes action (votes up or down).	6 The Assembly votes on the recommendations of the Public Works Committee in open session.	6 Initial presentation to the Ketchikan City council of staff recommendations, which is followed by an additional 30 day public comment period.	6 Before the ordinance can be approved it shall be subjected to public comment. The ordinance has a public comment period and when it is put on the assembly agenda it can received public testimony before it is voted on by the assembly.
			7 The adopted code provisions become effective 30 days following the vote.	7 Second presentation to the Ketchikan City council for a final decision on the codes and or amendments.	7 This final step will take a minimum of 30 days to complete. We estimate the 2009 codes will be in place and ready to be enforced starting January, 2011.
				A 30 day window is then in effect prior to the adopted codes begin taking effect.	
				8 The City of Ketchikan Building Officials Office follows a procedure that is generally in line with the above mentioned layout for code adoptions.	

Municipal Code Adoption Processes

	Kodiak Code Adoption Process		Seward Code Adoption Process		Mat-Su Code Adoption Process		Sitka Code Adoption Process
5	There are two Council/ Assembly meetings for adoption. Once approved the Borough ordinance goes into effect immediately and the City has a 30 day grace period before it becomes law.	5	The proposed ordinance is read a second time and open again for public comment. This is followed by Council action (vote).	5	Action. After introduction, an ordinance shall be set for public hearing by the affirmative vote of a majority of the assembly	5	The Assembly votes on the proposed adoption and it becomes final 30 days after the vote.
			If approved the ordinance becomes enacted 10 days following the vote.	6	Publication. The proposed ordinance shall be published by its title, summarizing the proposed action and with a notice setting out the time and place for public hearing on the ordinance, and the time and place for its consideration by the assembly. A copy of the proposed ordinance shall be available at the clerk's office.		
				7	Hearing. The public hearing shall follow the publication by at least five calendar days. At the hearing, copies of the ordinance shall be distributed to any persons present who request them, or the ordinance shall be read aloud in full. All interested persons present shall have an opportunity to be heard. The hearing shall be only for the purpose of receiving testimony and comments concerning the ordinance. The hearing may be held separately or in connection with a regular or special meeting and may be adjourned as necessary.		
				8	Adoption. After the hearing, the assembly shall consider the ordinance and may adopt it with or without amendment, or reject it. The borough clerk shall print and make available copies of the adopted ordinance.		
				9	Effective date. Ordinances take effect upon adoption or at a date specified in the ordinance.		



Capital City Fire / Rescue
820 Glacier Avenue
Juneau, AK. 99801
Eric Mohmann , Fire Chief

March 17, 2010

The Honorable Representatives Herron and Munoz
House Labor and Commerce Committee Co-Chairs
State of Alaska

RE CS HB 202:

Dear Representatives Herron and Munoz:

Thank you for the opportunity to testify before your committee today on Committee Substitute HB 202. Representative Herron asked that I provide a summary of the questions I asked during my testimony and my comments on previous testimony by other parties.

In summary, the questions and concerns are:

1. The cost-benefit analysis provision of the committee substitute appears to be vague in scope. This could be either a very extensive or very perfunctory analysis. What are the parameters envisioned for the analysis by the authors of the bill?
2. Representative Herron, you indicate in your Sponsor Statement, and your staffer indicated in his testimony that the bill would only affect ordinances adopted that affect "All" buildings; not individual buildings where special circumstances such as difficult access for firefighting would not prohibit sprinkler mandates. I am confused in that I thought that if an ordinance is passed, it has to be equally applied to all persons within the jurisdiction. Is selective enforcement legal?
3. The International Fire Code which has provisions that do apply to one and two family dwellings has exceptions and allowances for the installation of NFPA 13D (one and two family) residential sprinkler systems; specifically concerning fire apparatus access roads and fire hydrants. Under the provisions of this bill, would the cost-benefit analysis and public hearings outlined be required to allow these exceptions to be used?
4. What criteria would be used for a determination that the residence in question would fall under the designation of special circumstances? Might that be an inability of the fire department to effectively fight a fire in a building of a certain size, or distance from a fire station, or lack of a fire hydrant system, or light weight construction, etc.?

Mr. Michaelsohn, testified before I did that "the Anchorage code adoption system was flawed". As he is the Chair (or past Chair) of the code adoption committee in Anchorage, I do not dispute his allegation. However, the code adoption program in Juneau is open, transparent, well advertised and offers public comment and input at numerous times during the lengthy code adoption process. If there is a problem in Anchorage, he should be discussing his concerns with the Anchorage

March 17, 2010

Assembly. The code adoption process is and should remain a local issue as long as it meets or exceeds the regulations in AS 29.25.010. Our process certainly does.

Sincerely,

Eric Mohrmann
Fire Chief



Capital City Fire / Rescue
820 Glacier Avenue
Juneau, AK. 99801
Eric Mohmann, Fire Chief

March 19, 2010

The Honorable Co-Chairs Herron and Munoz
Community and Regional Affairs
House of Representatives
State of Alaska
Juneau, Alaska

RE: HB 202

Dear Representatives,

During the public hearing on CS HB 202 on March 18, 2010, some of the testimony provided was very inaccurate. Although the effectiveness of residential sprinkler systems is not the issue at hand, I would like to provide some information that may assist you in deliberations on the bill.

Testimony was provided that residential sprinkler systems would cost \$20,000 to \$30,000 per installation. It was further alleged that there would be a requirement for alarm systems, huge water bladder reservoirs, annual inspection fees, piping in the attic will freeze, that sprinklers were not a life saving system just property conservation and that smoke detection systems were 97% effective in saving lives from fire.

1. Cost: a 2008 study by the Fire Protection Research Foundation of ten communities across the United States and Canada showed the average cost to be \$1.61 per square foot. This report examined both rural residences on wells and homes served by a water utility. It also examined homes located in both warm and cold climates. The highest cost was for a system on a well, with copper pipes and with antifreeze that cost \$3.66 per square foot.
2. NFPA 13 D is the standard for the installation of sprinkler systems in one and two family dwellings.
 - Provided that control valves are locked in the open position, an alarm system is optional (section 7.1.1)
 - A ten-minute water supply is required for two sprinkler heads if the residence exceeds 2,000 square feet in area. If it is one story high and 2,000 square feet or less, a seven-minute water supply is required by the standard. The minimum flow from a head is 13 gallons per minute. Many residential sprinkler heads have flow requirements of 16 to 20 gallons per minute. Thus, the water requirements at even the upper end would be 400 gallons.

If a tank and pump were required, the water would be contained fit in a rectangular tank measuring four feet by four feet by three and one-half feet. (4X4X3.5) This is smaller than most coffee tables.

- Neither NFPA 13D nor the International Residential Code nor the International Fire Code require any annual inspections on residential sprinkler systems. NFPA 13 D recommends a

monthly visual inspection of the pressure gauge and control valve by the owner. (Section A 4.1.1)

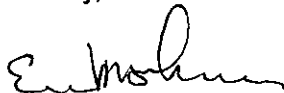
- NFPA 13D exempts required installation of sprinklers in closets less than 24 square feet in area if they are sheet rocked, garages, porches, carports, attics, crawl spaces and similar concealed spaces. (Sections 8.6.3, 8.6.4, 8.6.5). Numerous water-filled residential sprinkler systems have been in use for years in residences in freezing climates including Fairbanks, Alaska.
- A residential sprinkler system is designed for life safety. The scoping statement in NFPA 13D (Section 1.2.1) reads: "The purpose of this standard shall be to provide a sprinkler system that aids in the detection and control of residential fires and thus provides improved protection against injury and life loss."

The National Fire Protection Association reports on their web site (NFPA.org) that

- A recent study showed that 96% of US Households have at least one smoke detector.
- From 2003 to 2006, no smoke detectors were present or none operated in 41% of reported home fires.
- In almost 2/3 of reported home fire deaths from 2003 to 2006, there were no smoke detectors present or they were not working.

Thank you for allowing me to provide these clarifications to you.

Sincerely,



Eric Mohrmann
Fire Chief

Attachment

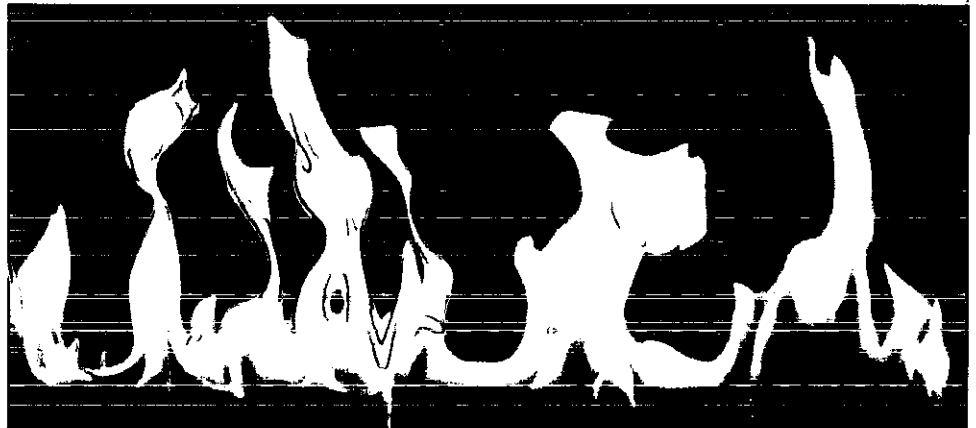
Cc:

Representative Harris
Representative Keller
Representative Millett
Representative Cissna
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**THE
FIRE PROTECTION
RESEARCH FOUNDATION**
Research in support of the NFPA mission

Home Fire Sprinkler Cost Assessment



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Fire Protection Research Foundation
Home Fire Sprinkler Cost Assessment

Final Report

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Executive Summary

Residential fire sprinkler ordinances have been adopted by several hundred United States communities for use in single-family dwellings. Such systems have been shown to provide significant life safety benefits, however the installed cost of these systems remains as a point of uncertainty and a potential barrier to broader adoption. Informal estimates of typical installation costs can vary widely and influence decision makers' views on the viability of sprinkler systems in new homes. Accordingly, the purpose of this study is to provide a national perspective on the cost of home fire sprinklers by developing data on installation costs and cost savings for ten communities distributed throughout the United States. The study also explores the range of insurance premium discounts which are available to homeowners with sprinkler systems in their houses.

To obtain information on the cost of installing residential sprinkler systems, ten case study communities were selected: nine in the United States, and one in Canada. The ten communities offer diversity in terms of sprinkler ordinance status, geographic location, housing style, and sprinkler system variables such as the type of piping material and the water supply source (municipal or on-site). For each of these communities, three building plans were collected from builders and sprinkler installers, along with sprinkler system cost data and other related cost and system information.

The term "sprinklered square feet" (sprinklered SF) reflects the total area of sprinklered spaces, including basements, garages, and attics when applicable. This term is used to better characterize the cost of sprinklers per unit of space which is covered by the system, especially since many of the homes have sprinklers in spaces beyond the normal living space, such as a garage. In terms of absolute costs, the total sprinkler system costs to the homebuilder ranged from \$2,386 to \$16,061 for the 30 houses.

The cost of sprinkler systems to the homebuilder, in dollars per sprinklered SF, ranged from \$0.38 to \$3.66. This range represents the 30 different house plans, with the average cost being \$1.61 per sprinklered SF. The low end of this range

(\$0.38/sprinklered SF) represents a California house in a community with a long-standing ordinance, sprinklers in the attic and the garage (in addition to the living space), and some potential pricing benefits from a volume relationship with the sprinkler contractor. The high end of this cost range (\$3.66/sprinklered SF) represents a Colorado house on well water and a system constructed with copper piping which utilized anti-freeze for freeze protection during the winter. These costs include all costs to the builder associated with the sprinkler system including design, installation, and other costs such as permits, additional equipment, and increased tap and water meter fees – to the extent that they apply. When accounting for any available credits given for the use of residential sprinklers (as was the case in Wilsonville, OR), the total sprinkler system costs to the builder averaged \$1.49 per sprinklered SF.

Variables associated with higher cost systems included extensive use of copper piping (instead of CPVC or PEX), an on-site water supply (instead of municipal water), local requirements to sprinkler additional areas like garages or attics, and higher local sprinkler permit fees. The cost data also support the concept that communities with sprinkler ordinances in effect for more than five years tend to experience market acceptance and increased competition leading to lower system costs.

Credits or “trade-offs,” which could include incentives like greater fire hydrant spacing in a community with sprinklers, were also investigated in each of the ten communities. While trade-offs may be used in communities as part of the zoning approval process for specific developments, just one of the ten communities had a credit or trade-off that applied to the houses which were analyzed. Wilsonville, OR, offers a credit of \$1.21 per square foot of living space in an effort to partially offset the costs of sprinklers.

As complementary data to the cost analysis, a survey of available insurance premium discounts for homeowners with sprinkler systems was conducted. For each of the ten communities where sprinkler cost data was analyzed, the average insurance premium discount (as a percentage) was obtained from five insurers with significant market share

in the state. Discount savings percentages ranged from 0 to 10% among all companies and agencies surveyed, with an average premium discount of 7%. Related issues such as limits on the overall discount allowed for protective devices, sprinkler system requirements, and any potential insurance penalties for sprinklers were also explored. There were no instances discovered of insurance penalties or extra fees associated with the use of residential sprinkler systems due to concerns such as system leakage.

Insurance quotes for a theoretical prototype house were also obtained for the nine United States communities and one Canadian community. Quotes were obtained with and without a sprinkler system in an effort to estimate the discount that may result from having a sprinkler system. Annual discount savings averaged \$22, or 3.42% of the annual premium. The difference in this discount compared to the average percentage discount found in the survey is likely due to the disconnect between generally quoted ranges and the real discounts allowed on real policies. As sprinkler systems become more common in given areas and this discount becomes a more common topic in the consumer-insurance agent dialogue, it is anticipated that actual discounts would more closely track with general ranges.

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I. Introduction

In 1975 the National Fire Protection Association (NFPA) introduced Standard 13D: Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Mobile Homes.¹ Since that time there have been approximately ten updates to the standard to reflect practical experience and to accommodate such things as nonmetallic piping and multipurpose systems. NFPA Standard 13D and related standard NFPA 13R² have evolved and been balanced to optimize system costs and fire safety for specific types of residential occupancy buildings.

Although residential sprinklers have been adopted by many communities, only 2% of all existing one- and two-family homes included a sprinkler system as of 2003.³ Although the life safety benefit of home fire sprinklers is well validated, installed cost remains a major barrier to their acceptance by homebuilders and local regulators. In 1986, the City of Scottsdale commissioned an independent study of the cost to install an NFPA 13D compliant system in an average single-family residence in that city. The study reviewed installation and related costs associated with sprinklers, as well as where sprinklers would result in cost savings.

In September 2007, the National Institute of Standards and Technology (NIST) released a cost benefit analysis that concluded the multipurpose residential sprinkler systems are economical across three housing types: townhouse, colonial style two-story, and a ranch design. Multipurpose systems (a system integrated with the home plumbing system) are allowed in some locations but were not used as the basis of the Scottsdale study, as it was completed prior to the updates in the 13D standard which permitted multipurpose systems.

Since 1986, the number of communities in the United States with sprinkler ordinances has increased, resulting in increased efficiencies in design, manufacturing and installation, as well as greater regulatory, insurance and builder acceptance. Further, the more widespread installation of these

¹ "Mobile Homes" was replaced with "Manufactured Homes" in the 1994 edition.

² Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, NFPA 13R.

³ www.usfa.fema.gov/downloads/pdf/nrfsi-03report.pdf

systems provides the opportunity to take a broader look at the costs and cost savings associated with home fire sprinklers in today's housing industry. A broader range of cost data will be of value to local communities considering sprinkler ordinances, homebuilders and homeowners considering the installation of sprinklers, and other industry stakeholders.

The purpose of this study is to provide a national perspective on the cost of home fire sprinklers by developing data on installation costs and cost savings for ten communities, distributed throughout the United States.

II. Cost Analysis of Residential Sprinkler Systems

A. Criteria for Community Selection

To obtain information on the cost of installing residential sprinkler systems, ten case study communities were selected. The selection of the communities was based on the status of a local sprinkler ordinance, geography, availability of data, and other factors. In an effort to obtain a cross-section of jurisdictions with varied experiences, the communities selected include five that have had an ordinance in effect for more than five years, two that have had an ordinance in effect for five years or less, two that have never had an ordinance, and one that had an ordinance which has subsequently been repealed. The basis for these criteria was to capture potential cost differences that exist between regions with high rates of sprinkler regulation and those with lower rates of regulation (and presumably lower frequency of installations).

The broad geographic spread of the case study communities, as seen in the following section, provides variation which reflects different local circumstances. Such differences may include the type of installer, materials used, and specific system requirements – which all contribute to the cost of the system. The geographic spread also allowed for a variety of housing types to be analyzed. For example, while basement foundations are typical in the Northeast, slab foundations are more typical in places like California.

While the status of the local sprinkler ordinance and the geographic location of communities were the primary selection criteria, several other factors were evaluated with the intent of gaining a diverse set of data. For instance, communities which allow the use of multipurpose systems were sought to be included in the sample. And in fact, two communities that commonly install multipurpose systems were included in the cost analysis. Likewise, the selected communities cover a range of sprinkler piping materials, with CPVC (most common), copper, and PEX.

An effort was also made to select communities which would provide a mix of housing types in terms of the number of stories and foundation system. These housing features can significantly impact the extent and cost of a sprinkler system. The selection process also took into consideration the typical sprinkler installer in a community (sprinkler contractor or plumber), in an effort to include communities with both models.

As a result of the varied technical requirements between sprinkler systems installed in areas with and without a municipal water supply, building plans connected to non-municipal (on-site) water supplies were also captured in the selection. The study includes two communities where the building plans analyzed were on well water systems, allowing the characterization of the associated costs.

B. Community Overview

The ten communities selected for the cost analysis are shown below:



The selection of communities satisfies the various criteria and overall provides a diverse mix of sprinkler systems in terms of type of system, house, piping material, installer, water supply, etc. A Canadian community with a well established ordinance was also included to add more diversity to the community mix.

C. Selection of House Plans and Obtaining Cost Data

Within each case study community, the selection of house plans for obtaining cost data was typically based on builder or sprinkler contractor recommendations from local fire departments or local homebuilder associations. Nearly all builder and contractor participants were generally quite willing to share house plans and cost data documentation on sprinkler systems, as well as responding to a wide range of related questions.

All of the house plans and associated cost data obtained for this study were for homes that have been built since 2005, allowing for the analysis of recent cost figures. Three house plans were requested from each builder in an effort to obtain a broader sample. Actual house plans were obtained from the builder or sprinkler contractor with sprinkler system information, installation costs to the builder, and any additional costs to the builder not included in the installation cost. In cases where the builder could not provide additional cost information, local government offices were consulted on items such as permit fees or increased tap fee charges.

Overall, the thirty house plans reflect a cross-section of housing types nationwide, including one- and two-story homes; basement, slab, and crawl space foundations; and custom, semi-custom, and production homes. House sizes, measured in terms of "sprinklered square feet", averaged 4,118 sprinklered SF, ranging from 1,913 to 6,542 sprinklered SF. Throughout this report, the term "sprinklered SF" is frequently used, and reflects the total area of sprinklered spaces, including basements, garages, and attics when applicable. This term is used to better characterize the cost of sprinklers per unit of space, especially since many of the homes have sprinklers in spaces beyond the normal living space, such as a garage. For the sake of comparison, the thirty houses averaged 3,660 square feet living space, ranging from 1,723 to 6,360 sf. For the houses with basement

foundations, the area of the basement (unfinished or finished) was included in calculating the house's living space square footage.

House Size for 30-Home Sample

(Square feet)

	Sprinklered Area*	Living Area**
Mean	4,118	3,660
Median	4,124	3,441
Minimum	1,913	1,723
Maximum	6,542	6,360

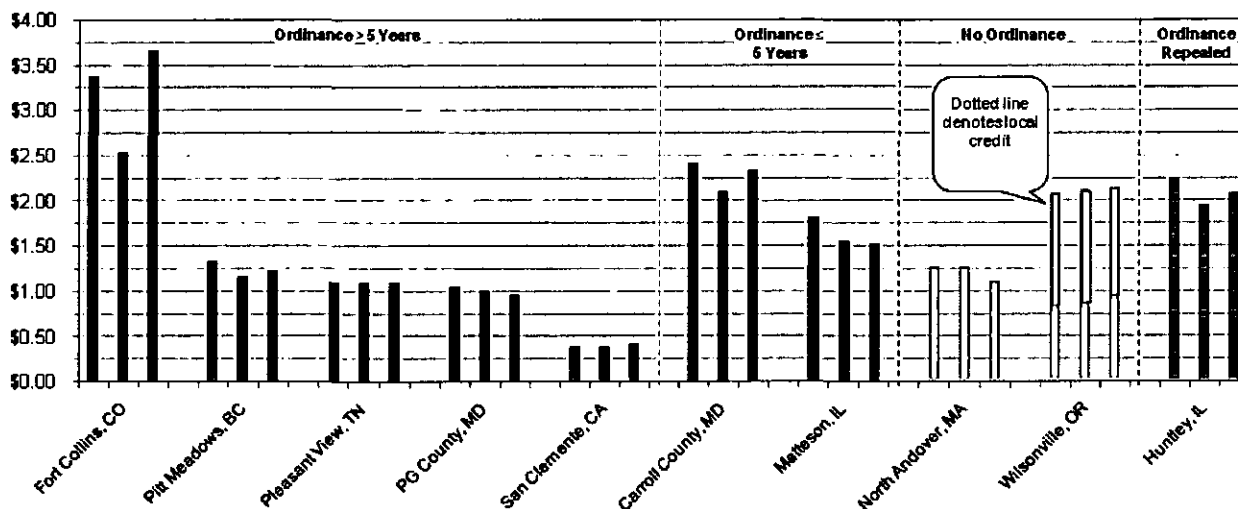
* Sprinklered SF includes all spaces with sprinkler coverage

**Living area SF includes all livings spaces including basements (unfinished or finished)

D. Sprinkler System Costs

The cost of sprinkler systems to the homebuilder, in dollars per sprinklered SF, ranged from \$0.38 to \$3.66. This range represents the thirty different house plans, with the average cost being \$1.61 per sprinklered SF. This figure includes all costs associated with the sprinkler system including design, installation, and other costs such as permits, additional equipment, increased tap and water meter fees – to the extent they apply. When accounting for any additional costs and any available credits (Wilsonville, OR), the total sprinkler system costs to the builder averaged \$1.49 per sprinklered SF. Sprinkler system costs to the homebuilder are shown in the graph and table below, with more detailed cost data included in Appendix A.

Sprinkler System Costs to the Homebuilder(\$/Sprinklered SF)



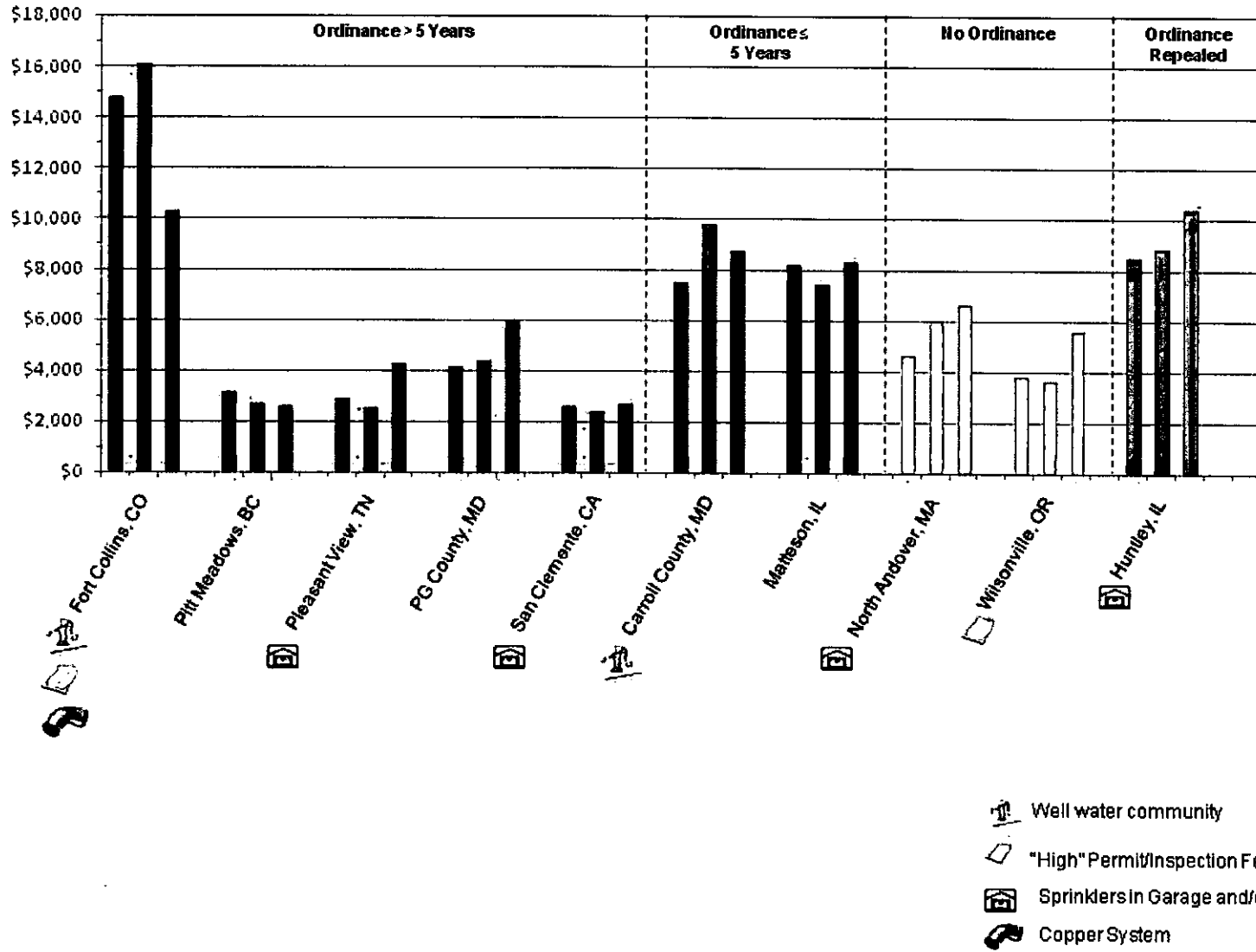
Sprinkler System Costs to the Homebuilder

	Cost (\$/sprinklered SF)	Cost (\$/living space SF)	Cost With Available Credits (\$/sprinklered SF)	Cost with Available Credits (\$/living space SF)
Mean	\$1.61	\$1.72	\$1.49	\$1.60
Median	\$1.42	\$1.49	\$1.23	\$1.38
Minimum	\$0.38	\$0.74	\$0.38	\$0.74
Maximum	\$3.66	\$3.66	\$3.66	\$3.66

The data above reflects the sprinkler system bid price plus all associated costs for the system which were not included in the bid (e.g. permit fee, increase in water service line, increase in tap fee). In several of the case study communities, these additional costs were already included in the contractor's bid price (like a permit fee) or these cost impacts did not apply (like an increased tap fee). One case study community, Wilsonville, OR, offers a \$1.21 per square foot credit in an effort to partially offset the costs of sprinklers. When accounting for this credit across the entire 30-home sample, the total sprinkler system costs to the builder averaged \$1.49 per sprinklered SF.

In addition to the cost of sprinklers per unit of space, the total cost per house is also an important metric. The following graph relates the total cost of the sprinkler system to the builder for all thirty house plans, with price-influencing variables noted for each community.

Total Installation Cost



It should be noted that the variables identified in the graph above, such as the use of copper piping, were identified as significant factors in the overall price of the sprinkler system through discussions with the builder or contractor, and more detailed cost data in some cases. However, given the small size of the data set and other limitations, this research did not attempt to specifically quantify the pricing influence of variables like copper piping or well water systems for use on a broader basis. Several system variables, including those identified on the graph, are discussed and summarized below. Many of these factors are discussed further in the Individual Community Analysis section of this report.

E. Sprinkler System Variables

Sprinkler System Requirements and Extent of Coverage

Sprinkler systems provisions which go beyond NFPA 13D minimum requirements are sometimes found in local ordinances. Such modifications may require additional types of spaces to be sprinklered, such as garages. In the ten communities analyzed, local modifications include requiring all bathrooms (regardless of size) to have fire sprinklers (Matteson, IL); requiring fire sprinklers in garages (Huntley, IL, North Andover, MA, Pleasant View, TN, and San Clemente, CA); and requiring fire sprinklers in attics (San Clemente, CA).

Since adding sprinkler coverage to spaces like garages necessitates additional piping, sprinkler heads, and in some cases systems which can be used in areas reaching freezing temperatures, this factor is significant to note when assessing system costs.

Type of Pipe Used

Systems in the study used a mix of metallic (copper) and nonmetallic (CPVC or PEX) pipe. In communities using solely nonmetallic pipe, installation costs averaged \$1.18 per sprinklered square foot. Several communities used CPVC piping in unexposed areas and copper in exposed areas like unfinished basements. In such cases, installation costs averaged \$1.56 per sprinklered square foot. The houses analyzed in Fort Collins, CO, used exclusively copper piping, with an average installation cost of \$3.19 per sprinklered square foot. This suggests that the type of piping used in systems can substantially impact the overall job cost.

Sprinkler System Costs by Type of Pipe

	CPVC	CPVC/ Copper	Copper	CPVC	CPVC/ Copper	Copper
	\$/Sprinklered SF			\$/Living Space SF		
Mean	\$1.18	\$1.56	\$3.19	\$1.30	\$1.65	\$3.19
Median	\$1.10	\$1.56	\$3.37	\$1.24	\$1.56	\$3.37
Minimum	\$0.38	\$0.95	\$2.53	\$0.74	\$0.95	\$2.53
Maximum	\$2.40	\$2.21	\$3.66	\$2.40	\$2.49	\$3.66

Water Source

While most of the houses assessed rely on municipal water sources, two of the communities (Carroll County, MD, and Fort Collins, CO) included homes reliant on well water. Sprinkler systems of this type require a booster pump, which according to estimates from sprinkler contractors, can add roughly \$2,000 to \$3,600 to the overall system cost. Installation costs in dollars per sprinklered square foot for these two communities ranged from \$2.09 to \$3.66. This results in an average of \$2.73 per sprinklered square foot, compared to the \$1.18 average for houses in those communities with a municipal water supply. Consequently, it is evident that a home's water supply source can be a significant factor in increasing price.

Sprinkler System Costs by Water Source

	Municipal	Non- Municipal	Municipal	Non- Municipal
	\$/Sprinklered SF		\$/Living Space SF	
Mean	\$1.18	\$2.73	\$1.31	\$2.73
Median	\$1.10	\$2.47	\$1.24	\$2.47
Minimum	\$0.38	\$2.09	\$0.74	\$2.09
Maximum	\$2.21	\$3.66	\$2.49	\$3.66

Permit and Inspection Fees

Communities often have a combined permit and inspection fee for the installation of sprinkler systems. While two of the case study communities do not have any fee for sprinkler permit and

inspection (Pleasant View, TN, and San Clemente, CA), the other eight communities do have such fees. In these communities, those permit and inspection fees which were identified ranged from \$50 to just under \$800, although in some of the case studies the permit fees were layered into the overall system bid and were not identifiable as single line item costs. While some of the ten communities have a flat fee, others calculate permit and inspection fees based on the size of the house or valuation of the construction. In determining which communities should be classified as having “high” permit and inspection fees, a threshold amount of \$350 was set as a “high” based on the limited data available on the range of fees.

System Design Type

Multipurpose systems combine plumbing and sprinklers into one system and piping network, resulting in continuous flow of water circulating in the system. Conversely, a standalone sprinkler system uses dedicated sprinkler piping supply, with water flowing only when a sprinkler is activated. In analyzing the system type used, data was obtained for multipurpose systems (six homes) and standalone sprinkler systems (twenty-four homes). In communities where multipurpose systems are used, installation costs in dollars per sprinklered square foot averaged \$1.04. In communities where standalone systems were used, installation costs averaged \$1.61 per sprinklered SF.

Sprinkler System Costs by Design Type

	Multipurpose (6 Homes)	Standalone (24 Homes)	Multipurpose (6 Homes)	Standalone (24 Homes)
	\$/Sprinklered SF		\$/Living Space SF	
Mean	\$1.04	\$1.61	\$1.04	\$1.73
Median	\$1.02	\$1.39	\$1.02	\$1.49
Minimum	\$0.81	\$0.38	\$0.81	\$0.74
Maximum	\$1.32	\$3.66	\$1.32	\$3.66

Type of Foundation

House foundation types in the study varied depending on geographic location. While basement foundations were the prevalent foundation type in the eastern communities, slab or crawl space

foundations were more common in the western communities of the study. The following table depicts house foundation types by region, based on U.S. Census Bureau data:

2007 Foundation Type Market Shares

	Nationwide (U.S.)	Northeast	Midwest	South	West
Full/Partial Basement	27.7%	73.6%	73.7%	10.6%	18.6%
Crawl Space	18.4%	10.5%	6.2%	19.2%	27.3%
Slab	52.7%	14.0%	19.7%	68.7%	53.5%
Other	0.6%	0.7%	0.1%	0.9%	0.4%
Not Reported	0.5%	1.2%	0.3%	0.6%	0.2%

For houses in the study with basement foundations, sprinkler system costs averaged \$1.81 per sprinklered square foot. System costs for houses with slab foundations averaged \$0.81 per sprinklered square foot, while houses with crawl spaces had an average cost of \$0.92 per sprinklered square foot.

Sprinkler System Costs by Foundation Type

	Basement (20 homes)	Slab (6 homes)	Crawl Space (4 homes)	Basement (20 homes)	Slab (6 homes)	Crawl Space (4 homes)
	\$/Sprinklered SF			\$/Living Space SF		
Mean	\$1.81	\$0.81	\$0.92	\$1.90	\$0.99	\$1.00
Median	\$1.68	\$0.78	\$0.88	\$1.68	\$0.97	\$0.88
Minimum	\$0.95	\$0.38	\$0.81	\$0.95	\$0.74	\$0.81
Maximum	\$3.66	\$1.12	\$1.10	\$3.66	\$1.32	\$1.44

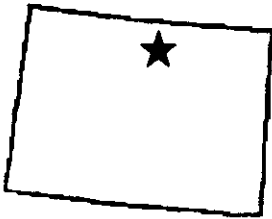
It should be noted that these costs, when presented in terms of dollars per sprinklered square foot, reflect the cost impacts of the foundation system but simultaneously incorporate the impacts of installing sprinklers in garages and attics in some cases. In other words, the limited data set and number of variables involved with each particular data point do not allow a more thorough analysis of this issue within this research.

F. Individual Community Analysis

The following table summarizes the communities, research houses, and sprinkler systems analyzed within each of the ten communities, followed by more detailed summaries of each jurisdiction. Note that for information such as pipe type, system type, and several other categories, the data in the table refers specifically to the 30 homes analyzed in the study, not community requirements.

Community	Sprinkler Ordinance Information	Year of Ordinance Adopted	Local Modifications to 13D	System Type	Pipe Type	Sprinkler Head Type	Water Supply	Foundation Type
Fort Collins, CO	13D > 5 years	1986	None	standalone	Copper	concealed; semi-recessed in exposed areas	Well water	Basement
Pitt Meadows, BC	13D > 5 years	1998	None	multipurpose	CPVC	semi-recessed	Municipal	Slab
Pleasant View, TN	13D > 5 years	2002	Sprinklers or a 1-hour rated assembly required in garage	standalone	CPVC	concealed	Municipal	2 Basement 1 Crawl Space
Prince George's County, MD	13D > 5 years	1992	None	standalone	CPVC; copper in basements	concealed; semi-recessed in exposed areas	Municipal	Basement
San Clemente, CA	13D > 5 years	1980	Sprinklers required in garages and attics	standalone	CPVC	concealed	Municipal	Slab
Carroll County, MD	13D < 5 years	2006	None	standalone	CPVC	concealed; semi-recessed in exposed areas	Well water	Basement
Matteson, IL	13D < 5 years	2004	All bathrooms must have sprinklers, regardless of size	standalone	CPVC; copper in basements	concealed; semi-recessed in exposed areas	Municipal	Basement
North Andover, MA	no ordinance	N/A	Sprinklers in garages	standalone	CPVC	concealed	Municipal	Basement
Wilsonville, OR	no ordinance	N/A	None	multipurpose	PEX	semi-recessed	Municipal	Crawl Space
Huntley, IL	13D repealed	2005	2 Sprinkler heads required in garages	standalone	CPVC; copper in basements	concealed; semi-recessed in exposed areas	Municipal	Basement

Fort Collins, Colorado



Fort Collins, Colorado has mandated NFPA 13D since 1986. The community is served by the Poudre Fire Authority. Residential sprinkler systems are typically installed by sprinkler contractors, but the installation may also be done by a plumber. Both standalone and multipurpose systems have been installed in homes in Fort Collins, and pipe type is typically plastic (CPVC or PEX), but may also be metallic (copper). The housing styles in Fort Collins range from manufactured housing to custom homes larger than 5,000 square feet, typically with basement foundations.

In the case study of Fort Collins, three house floor plans were obtained from a local sprinkler contractor. All three homes were built on a basement foundation, thus requiring sprinkler heads in the basement in addition to the main living areas per NFPA 13D. Including the basement area, the three homes had living space ranging from 2,797 to 6,360 square feet. In sprinklered square footage, the three homes ranged from 2,797 to 6,360 square feet (sprinklered area = living space area). The cost of the systems to the builder ranged from \$10,250 to \$16,061. The cost of the systems ranged from \$2.53 to \$3.66 per sprinklered SF.

Fort Collins – Sprinkler System Costs

	System Cost	Sprinklered Space		Living Space	
		Size	\$/SF	Size	\$/SF
House 1	\$14,745	4,373	\$3.37	4,373	\$3.37
House 2	\$16,061	6,360	\$2.53	6,360	\$2.53
House 3	\$10,250	2,797	\$3.66	2,797	\$3.66

In each home, the sprinkler contractor installed a standalone system using copper piping.⁴ Concealed sprinkler heads were used in the main living area, while semi-recessed sprinkler heads

⁴ The sprinkler contractor has traditionally used only copper for sprinkler systems, believing it to be superior to plastic both in performance and longevity. The contractor is considering switching to plastic on their larger projects to remain competitive in the local market.

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were used in areas where piping is exposed. Design fee, inspection fee, and permit fee were included in the sprinkler contractor's installation price. It is important to note, however, that the permit fee varies depending on the valuation of the individual home. Thus, permit fees for the three case study homes ranged from \$510.46 to \$799.83. The contractor's installation price also included an anti-freeze system, a system flow switch and alarm, and a backflow preventer. Because all three homes rely on well water, a booster pump and tank was required for the sprinkler system, which was also included in the contractor's installation price.

A supplemental bid for the sprinkler system installations in Fort Collins may help to characterize the relatively high system costs which were obtained for the homes. A second residential sprinkler contractor in the Fort Collins area quoted the system installations on the same three homes with a range of \$8,000 to \$12,500. This difference from the actual contractor bid range (\$10,250 to \$16,061) may be heavily influenced by the type of pipe used for the systems. PEX was used in the supplemental system bid design, while copper was used in the actual plans. PEX pipe is flexible tubing that is significantly less expensive than copper.

Pitt Meadows, British Columbia



Pitt Meadows, British Columbia has mandated NFPA 13D since 1998. The community is served by the Pitt Meadows Fire Department. There are no specific requirements for residential sprinkler systems beyond those of NFPA 13D. Residential sprinkler systems are typically installed by sprinkler contractors. Both standalone and multipurpose systems have been installed in homes in Pitt Meadows, and pipe is typically CPVC. Typical housing type in Pitt Meadows is two-story, 2,500 square feet in living space, with a crawl space or slab foundation.

In the case study of Pitt Meadows, three house floor plans were obtained from a semi-custom builder. All three homes were built on a slab foundation. The three homes had living space (and sprinkler square footage space) ranging from 2,109 to 2,342 square feet. The cost of the systems to the

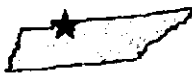
builder ranged from \$2,560 to \$3,090.⁵ When considered in terms of dollars per unit of space, the cost of the systems ranged from \$1.15 to \$1.32 per sprinklered SF (U.S. dollars).

Pitt Meadows – System Costs

	System Cost	Sprinklered Space		Living Space	
		Size	\$/SF	Size	\$/SF
House 1	\$3,090	2,342	\$1.32	2,342	\$1.32
House 2	\$2,690	2,336	\$1.15	2,336	\$1.15
House 3	\$2,560	2,109	\$1.21	2,109	\$1.21

The sprinkler contractor installed a standalone system using CPVC piping and standard white semi-recessed sprinkler heads were used. Design fee, inspection fee, and permit fee were included in the sprinkler contractor’s installation price. It is important to note, however, that the permit fee is calculated as 0.95% of the sprinkler system construction value. Thus, permit fees for the three case study homes ranged from \$24.32 to \$29.35. The contractor’s installation price also included a system flow switch and alarm, and a backflow preventer.

Pleasant View, Tennessee



Pleasant View, Tennessee has mandated NFPA 13D since 2002. The community is served by the Pleasant View Volunteer Fire Department. In addition to the requirements of NFPA 13D, Pleasant View requires sprinkler coverage in the garage of homes. Standalone systems are the more common system used in Pleasant View, with CPVC pipe typically used. Typical housing type in Pleasant View ranges from 1,200 to 4,000 square feet of living space, both one- and two-story homes, with differing foundation types.

⁵ The original prices were in Canadian dollars (CAN). Amounts were converted to USD (U.S. dollars) based on currency exchange rates of \$1.00 CAN to \$1.0099 USD as of March 2008 (when the costs were incurred).

In the case study of Pleasant View, three house floor plans were obtained from a semi-custom builder. Two of the homes were built with a basement foundation; the other home had a crawl space. The three homes had living space ranging from 1,723 to 3,326 square feet. In addition to sprinkler coverage in the living space, sprinklers were also installed in the garages. Thus, total sprinklered space in the three homes ranged from 2,612 to 3,826 sprinklered SF. The total cost of the sprinkler systems to the builder ranged from \$2,489 to \$4,208. When considered in terms of dollars per unit space, the cost of the system for each of the three homes was \$1.10 per sprinklered SF.

Pleasant View – System Costs

	System Cost	Sprinklered Space		Living Space	
		Size	\$/SF	Size	\$/SF
House 1	\$2,872	2,612	\$1.10	2,112	\$1.36
House 2	\$2,489	2,273	\$1.10	1,723	\$1.44
House 3	\$4,208	3,826	\$1.10	3,326	\$1.27

The sprinkler contractor installed a standalone system using CPVC piping and concealed sprinkler heads. The design fee for the sprinkler system was included in the sprinkler contractor's installation price. Pleasant View does not charge an inspection fee or permit fee for residential sprinkler systems. The contractor's installation price also included a system flow switch and alarm, and a backflow preventer.

All three homes use a municipal water source. An increased water service line size is needed in Pleasant View to allow for the potential increase in water flow associated with the sprinkler system. This increase from 3/4" to 1" does not result in an increase in price for the sprinkler system installation, as all building lots now come with this increased line size. Increases in water meter size or water tap fee were not required or incurred.

Prince George's County, Maryland



Prince George's County, Maryland phased in the requirement of NFPA 13D beginning in 1987, when county council approved the mandate of residential sprinklers. On January 1, 1992, the final stage of the law went into effect stating that from that point on all residential structures, including single-family homes, must be fully protected by a NFPA Approved 13-D residential sprinkler.⁶ The county is served by the Prince George's County Fire Department. There are no specific requirements for residential sprinkler systems beyond those of NFPA 13D. Residential sprinkler systems are typically installed by sprinkler contractors. Standalone systems are the common system used in Prince George's County, and pipe type is typically CPVC. Typical housing type in Prince George's County is two-story, roughly 3,000 square feet in living space, with a basement foundation.

In the case study of Prince George's County, three house floor plans were obtained from a regional production builder. All three homes were built on basement foundations. Including the basement area, the three homes had living space ranging from 3,903 to 6,170 square feet. The amount of sprinklered square footage ranged from 3,903 to 6,170 square feet. The cost of the systems to the builder ranged from \$4,100 to \$5,886. When considered as dollars per square foot of sprinkler coverage, the cost of the system ranged from \$0.95 to \$1.05 per square foot.

⁶ Ronald Jon Siarnicki, "Residential Sprinklers: One Community's Experience Twelve Years after Mandatory Implementation," January 2001.
September 10, 2008

Prince George's County – System Costs

	System Cost	Sprinklered Space		Living Space	
		Size	\$/SF	Size	\$/SF
House 1	\$4,100	3,903	\$1.05	3,903	\$1.05
House 2	\$4,332	4,345	\$1.00	4,345	\$1.00
House 3	\$5,886	6,170	\$0.95	6,170	\$0.95

The sprinkler contractor installed a standalone system using CPVC piping, using both concealed and standard white semi-recessed sprinkler heads. Design fee, inspection fee, and permit fee were included in the sprinkler contractor's installation price. The contractor's installation price also included a system flow switch and alarm, and a backflow preventer.

San Clemente, California



San Clemente, California has mandated NFPA 13D since 1980. The community is served by the Orange County Fire Authority. In addition to the requirements for residential sprinkler systems stated by NFPA 13D, the community also requires sprinkler coverage in the garage and attic space of homes. Standalone systems are the common system used in San Clemente, with CPVC pipe typically used. Typical housing type in San Clemente ranges from 2,500 to 5,000 square feet with slab foundations.

In the case study of San Clemente, three house floor plans were obtained from a production builder. All of the homes were built on slab foundations with living space ranging from 3,214 to 3,482 square feet. With garage and attic space considered, sprinklered space ranged from 6,329 to 6,542 square feet. The cost of the systems to the builder ranged from \$2,386 to \$2,655. When considered in terms of dollars per square foot of sprinkler coverage, the cost of the systems ranged from \$0.38 to \$0.41 per square foot. These low costs for the sprinkler system are likely the result of volume pricing

(the builder indicated that the contractor does a large volume of work with them) and the competitive market as a result of the length of the ordinance's existence.

San Clemente – System Costs

	System Cost	Sprinklered Space		Living Space	
		Size	\$/SF	Size	\$/SF
House 1	\$2,565	6,542	\$0.39	3,482	\$0.74
House 2	\$2,386	6,329	\$0.38	3,214	\$0.74
House 3	\$2,655	6,448	\$0.41	3,358	\$0.79

The sprinkler contractor installed a standalone system using CPVC piping and concealed sprinkler heads. The design fee and inspection fee for the sprinkler system was included in the sprinkler contractor's installation price. San Clemente does not charge a permit fee for residential sprinkler systems—the city promotes the use of residential sprinkler systems by eliminating such a fee. The contractor's installation price also included a system flow switch and alarm, and a backflow preventer.

All three homes use a municipal water source. There is no need for an increased water service line size, water meter size, or tap fee as a result of the sprinkler system installation.

Carroll County, Maryland



Carroll County, Maryland has mandated NFPA 13D since 2006. The county is served by local paid and volunteer fire departments. There are no specific requirements for residential sprinkler systems above and beyond those of NFPA 13D. Standalone systems are the common system used in Carroll

County, although multipurpose systems may also be used. CPVC pipe is typically used in finished areas of homes, with copper used in unfinished areas. Typical housing in Carroll County is about 1,800 square feet for one-story ranches, and 3,500 square feet for two-story homes, with basement foundations.

September 10, 2008

In the case study of Carroll County, three house floor plans were obtained from a semi-custom builder. All three homes were built with a basement foundation, with living space (including basement) ranging from 3,131 to 4,686 square feet. The cost of the systems to the builder ranged from \$7,499 to \$9,800. When considered in terms of dollars per square foot of sprinkler coverage, the cost of the systems ranged from \$2.09 to \$2.40 per sprinklered square foot.

Carroll County – System Costs

	System Cost	Sprinklered Space		Living Space	
		Size	\$/SF	Size	\$/SF
House 1	\$7,499	3,131	\$2.40	3,131	\$2.40
House 2	\$9,800	4,686	\$2.09	4,686	\$2.09
House 3	\$8,750	3,772	\$2.32	3,772	\$2.32

Because all three homes rely on well water, a booster pump and tank was required for the sprinkler system, which was included in the contractor’s installation price. The sprinkler contractor installed a standalone system using CPVC piping. Concealed sprinkler heads were used in unexposed areas and semi-recessed sprinkler heads were used in exposed areas. The design fee, inspection fee, and permit fee for the systems were included in the sprinkler contractor’s installation price. The contractor’s installation price also included a system flow switch and alarm, and a backflow preventer.

Matteson, Illinois



Matteson, Illinois has mandated NFPA 13D since 2004. The community is served by the Matteson Fire Department. There are no specific requirements for residential sprinkler systems beyond those of NFPA 13D. Standalone systems are the more common system used in Matteson, with CPVC pipe typically used. Typical housing type in Matteson is about 3,000 square feet, both one- and two-story homes, usually with basement

foundations.

September 10, 2008

In the case study of Matteson, three house floor plans were obtained from a semi-custom builder. All three homes were built with a basement foundation, with living space (including the basement area) and sprinklered space ranging from 4,562 to 5,478 square feet. The cost of the systems to the builder ranged from \$7,407 to \$8,329, or \$1.52 to \$1.80 per sprinklered square foot.

Matteson – System Costs

	System Cost	Sprinklered Space		Living Space	
		Size	\$/SF	Size	\$/SF
House 1	\$8,198	4,562	\$1.80	4,562	\$1.80
House 2	\$7,407	4,740	\$1.56	4,740	\$1.56
House 3	\$8,329	5,478	\$1.52	5,478	\$1.52

The sprinkler contractor installed a standalone system using CPVC piping. Concealed sprinkler heads were used in unexposed areas and semi-recessed sprinkler heads were used in exposed areas. The design fee for the sprinkler system was \$50, and the inspection fee and permit fee were a combined \$150. The contractor’s installation price also included a system flow switch and alarm, and a backflow preventer.

All three homes use a municipal water source. An increase in water service line size is needed in Matteson to accommodate the potential increase in water flow associated with the sprinkler system. This increased service line cost the builder an additional \$700. Increase costs for a larger water meter or water tap fee were not incurred.

North Andover, Massachusetts



North Andover, Massachusetts does not require residential sprinklers by law, but instead has implemented NFPA 13D through local zoning. Sprinklers are a part of the zoning approval process, as discussed in a later section of the report. The community is served by the North Andover Fire Department. In addition to the requirements for residential

sprinkler systems stated by NFPA 13D, the North Andover Fire Department requires sprinkler coverage in the garage. Standalone systems are the common system used in North Andover, with CPVC pipe typically used. Typical housing type in North Andover is about 2,000 to 3,500 square feet, both one- and two-story homes, usually with basement foundations.

In the case study of North Andover, three house floor plans were obtained from a local developer in the community. All three homes were built with a basement foundation, with living space (including the basement area) ranging from 3,084 to 5,422 square feet. With garage square footage considered, the three homes ranged from 3,568 to 5,906 sprinklered square feet. The cost of the sprinkler systems to the builder ranged from \$4,500 to \$6,500, or \$1.10 to \$1.26 per sprinklered square foot.

North Andover – System Costs

	System Cost	<i>Sprinklered Space</i>		<i>Living Space</i>	
		<i>Size</i>	<i>\$/SF</i>	<i>Size</i>	<i>\$/SF</i>
House 1	\$4,500	3,568	\$1.26	3,084	\$1.46
House 2	\$5,800	4,632	\$1.25	4,148	\$1.40
House 3	\$6,500	5,906	\$1.10	5,422	\$1.20

The sprinkler contractor installed a standalone system using CPVC piping. Concealed sprinkler heads were used in unexposed areas and semi-recessed sprinkler heads were used in exposed areas of the home. The design fee and inspection fee were included in the cost to the builder, while the permit fee was a separate cost at \$50 per home. The contractor’s installation price also included a system flow switch and alarm, and a backflow preventer.

All three homes use a municipal water source. An increase in water service line size was needed to accommodate the potential increased water flow associated with the sprinkler system. This increase cost the builder an additional \$450. An increase in tap fee at a cost of \$500 was also incurred. There was no additional cost incurred related to the water meter size.

Wilsonville, Oregon



Wilsonville, Oregon does not require residential sprinklers by law, but has required NFPA 13D in the planned community of Villebois. The community is served by Tualatin Valley Fire and Rescue. There are no specific requirements for residential sprinkler systems beyond those of NFPA 13D. System installations are typically done by a plumber; thus a multipurpose system is the most common system used in the area. Typical housing type in Wilsonville is between 2,000 to 3,000 square feet, often with a crawl space foundation.

In the case study of Wilsonville, three house floor plans were obtained from a developer in the region. All three homes were on a crawl space, with living space (and sprinklered square footage) ranging from 1,913 to 2,917 square feet. The total cost of the systems to the builder (before any credit is applied) ranged from \$4,014 to \$5,892, or \$2.02 to \$2.10 per sprinklered square foot

The City of Wilsonville offers a \$1.21 per square foot of living space credit to the builder to offset the costs associated with sprinklers. This is a one-time credit, offered at the time of system installation. The credit cannot be any greater than the water meter system development charge for a 3/4" meter, which is currently \$4,436 – regardless of the size of the home. In rare situations, a large home requiring a 1" water meter may receive a greater credit, but only if proof is shown that this increased water meter size is directly a result of water flow requirements for the sprinkler system.

When accounting for the impact of this credit, the sprinkler system costs for the three Wilsonville homes range from \$0.81 to \$0.89 per sprinklered square foot, as shown in the table below.

Wilsonville – System Costs

	System Cost	Sprinklered Space			Living Space		
		Size	Credit (\$/SF)	\$/SF	Size	Credit (\$/SF)	\$/SF
House 1	\$4,178	2,005	\$1.21	\$0.87	2,005	\$1.21	\$0.87
House 2	\$4,014	1,913	\$1.21	\$0.89	1,913	\$1.21	\$0.89
House 3	\$5,892	2,917	\$1.21	\$0.81	2,917	\$1.21	\$0.81

The plumber installed a multipurpose system using PEX piping and standard white semi-recessed sprinkler heads. The design fee was included in the cost to the builder, while the inspection and permit fee was a separate cost to the builder, at \$360 per home. The system did not feature a flow switch and alarm, but a required backflow preventer was included in the installation cost. All three homes use a municipal water source. An increase in water service meter size from 5/8" to 3/4" was needed to accommodate the increased water flow associated with the sprinkler system.

Huntley, Illinois



Huntley, Illinois mandated NFPA 13D in 2005, and the mandate was repealed by the Village of Huntley in 2007. Residential sprinkler systems are currently a "mandatory option" in the Village of Huntley—builders must offer homeowners the option to install a residential sprinkler system. While 13D is not required in the village itself, sprinkler systems are still required in the county portion of the fire district. When NFPA 13D was required, sprinkler coverage was also required in the garages of homes. System installations are typically done by a sprinkler contractor, using CPVC pipe. Typical housing in Huntley ranges from 2,000 to 4,500 square feet, usually with basement foundations.

In the case study of Huntley, three house floor plans were obtained from a local sprinkler contractor. All three homes were built with a basement foundation, with living space (including the basement area) ranging from 3,400 to 4,560 square feet. With garage areas considered, the three homes ranged from 3,835 to 5,045 sprinklered square feet. The cost of the sprinkler systems to the builder ranged from \$8,476 to \$10,406, or \$1.93 to \$2.21 per sprinklered square foot.

Huntley – System Costs

	System Cost	Sprinklered Space		Living Space	
		Size	\$/SF	Size	\$/SF
House 1	\$8,476	3,835	\$2.21	3,400	\$2.49
House 2	\$8,851	4,575	\$1.93	4,030	\$2.20
House 3	\$10,406	5,045	\$2.06	4,560	\$2.28

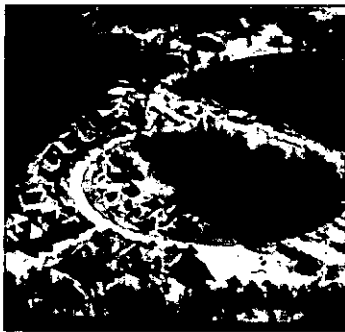
The sprinkler contractor installed a standalone system using CPVC pipe in all areas except the basement, where copper was used. Concealed sprinkler heads were used in unexposed areas and semi-recessed sprinkler heads were used in exposed areas. The design fee for the system was included in the sprinkler contractor's installation price, while the inspection fee and permit fee were a combined \$300, an additional cost outside of the sprinkler contractor's installation price. The contractor's installation price also included a system flow switch and alarm, and a backflow preventer.

All three homes use a municipal water source. An increase in water service line size from 1" to 1 1/2" was required to accommodate the increased water flow associated with the sprinkler system. This increase in water line size cost the builder an additional \$821.

G. Credits and Trade-Offs

Trade-offs is a general term for allowances that can be made in the building construction or the development planning when sprinkler systems will be used in the houses. At the house level, a trade-

off could be a waiver of using fire-rated drywall in attached garages when the garage will be sprinklered. At the development level, trade-offs can include greater spacing of fire hydrants, narrower road widths, reduced water main sizes, relaxed requirements for the number of neighborhood exits, and others.



Aerial View of North Andover Subdivision Illustrating Cluster Zoning

Potential trade-offs at the development level and the house level were investigated for all ten communities. Possible trade-offs were particularly scrutinized in North Andover, Massachusetts and Wilsonville, Oregon. Neither community has a mandated residential sprinkler ordinance, so incentives of some type could be reasonable tools to encourage the use of sprinklers.

North Andover has experienced tremendous growth in the past thirty-five years and has implemented cluster zoning as a way to preserve open space in the community. In subdivisions such as Hickory Hills, several additional building lots have been made available through cluster zoning, while still allowing for a large amount of open space in the development. Cluster zoning involves smaller lots and tighter setbacks, with larger parcels of dedicated open space nearby. The former North Andover Fire Chief viewed cluster zoning as a potentially greater fire risk (as homes are built closer together), resulting in a requirement for residential sprinklers for such developments as an additional safety measure. Additionally, because North Andover lacks the manpower for a new fire station, residential sprinkler systems can buy the fire department time in the event of an emergency. As a result, the town planning board created cluster-zoned subdivisions in North Andover as specially permitted lots, where developers and builders are required to install residential sprinkler systems in homes. Although the planning board does sometimes offer a decrease in the width of streets, increased spacing between fire hydrants, and the elimination of a turnaround for cluster developments, none of these trade-offs were offered in Hickory Hills.

Wilsonville, OR provides a per-house credit intended to help cover the cost to install a residential sprinkler system. The credit is limited to the current water meter system development charge. Thus, the one-time credit changes as the system development charge changes. Beyond this credit offered

by the City of Wilsonville, there were no documented development-level or house-level trade-offs in the ten communities.

For communities where garages are sprinklered, there were no trade-offs identified related to drywall specifications. For each of the four communities in the study with sprinklered garages, the additional coverage is treated as an added safety measure, to be implemented in addition to the traditional fire-rated drywall required by building codes. In many cases, local jurisdictions will require sprinkler coverage in the garage when there are bedrooms and/or other living areas above the garage.

Although evidence of trade-offs was not found in the case study communities, there is a general knowledge in the industry that trade-offs may be implemented on more of a case-by-case basis integrated with the zoning approval process for developments, rather than as a standard community policy. Negotiations are often made between a developer and the Authority Having Jurisdiction (AHJ). Such agreements may be made in order for a developer to avoid penalty for not installing sprinklers.

III. Insurance Discounts for Residential Sprinkler Systems

A. Methodology for Estimating Insurance Premium Reductions

A 2007 study conducted by the National Association of Home Builders (NAHB) economics department showed that insurers do offer meaningful discounts for residential sprinkler systems, but that the discounts varied from state to state. For this study, an insurance survey was created to examine insurance companies and local agencies in the nine states where case study communities were located. This survey was both quantitative and qualitative, gathering not only average insurance premium discounts, but also information on insurance company categorization and/or requirements for discounts, and the familiarity of consumers with such discounts. This information is intended to help round out the case studies and provide meaningful data on actual insurance incentives and policies.

For each community, the average insurance premium discount (as a percentage) was obtained from five insurance companies. The National Association of Insurance Commissioners (NAIC) 2007 Market Share Reports for Property/Casualty Insurance Groups and Companies were used to identify the top five insurance companies in each state. In cases where insurance discounts could not be obtained from a top-five company, discounts were obtained from subsequent companies from the NAIC report list. In cases where information could not be obtained directly from an insurance company, local insurance agencies were contacted.

B. Insurance Premium Discounts for Residential Sprinkler Systems

Discount savings percentages are derived from the whole annual homeowner's insurance premium (rather than just a portion of the premium). Discount savings percentages ranged from 0 to 10% among all companies and agencies surveyed, with an average discount savings percentage premium of 7%.

In California, annual homeowner's insurance premium discount percentages were obtained from Allstate, State Farm, Farmers, Auto Club Enterprises, and Nationwide. Discounts ranged from 0 to 10%.

In Colorado, annual homeowner's insurance premium discount percentages were obtained from State Farm, Farmers, American Family, Allstate, and Travelers. Discounts ranged from 3 to 10%.

In Illinois, annual homeowner's insurance premium discount percentages were obtained from Allstate, State Farm, Country Financial, Farmers, and American Family. Discounts ranged from 5 to 10%.

In Maryland, annual homeowner's insurance premium discount percentages were obtained from Allstate, State Farm, Travelers, Nationwide, and Erie. Discounts ranged from 4 to 10%.

In Massachusetts, annual homeowner's insurance premium discount percentages were obtained from Commerce, Andover, Chubb & Son, Travelers, and Liberty Mutual. Discounts ranged from 5 to 10%.

In Oregon, annual homeowner's insurance premium discount percentages were obtained from State Farm, Farmers, Allstate, Country Financial, and American Family. Discounts ranged from 5 to 10%.

In Tennessee, annual homeowner's insurance premium discount percentages were obtained from State Farm, Tennessee Farmers, Allstate, Travelers, and Nationwide. Discounts ranged from 0 to 10%.

In British Columbia, annual homeowner's insurance premium discount percentages were obtained from Aviva, Canadian Northern Shield, Economical Insurance, Dominion of Canada, and Gore Mutual. Discounts ranged from 0 to 12%.

These findings are summarized in the table below.

State	Insurance Company	Market Share in State/Province	Percentage Discount for Residential Sprinklers
Maryland	Allstate	21.02%	4%
	State Farm	16.61%	10%
	Travelers	13.01%	10%
	Nationwide	11.12%	5%
	Erie	6.38%	5%
Tennessee	State Farm	26.54%	10%
	Tennessee Farmers	15.30%	5%
	Allstate	11.43%	10%
	Travelers	5.53%	10%
	Nationwide	5.24%	0%
Illinois	State Farm	32.68%	10%
	Allstate	18.22%	10%
	Country Insurance	5.02%	5%
	Farmers	6.60%	6%
	American Family	5.23%	10%
Massachusetts	Commerce	10.02%	5%
	Amover Companies	6.45%	5%
	Chubb & Son Inc.	7.83%	10%
	Travelers	7.65%	7%
	Liberty Mutual	7.03%	6%
Colorado	State Farm	23.62%	10%
	Farmers	15.45%	5%
	American Family	12.42%	10%
	Allstate	10.28%	5%
	Travelers	3.85%	3%
California	State Farm	20.23%	10%
	Farmers	17.03%	10%
	Allstate	13.33%	10%
	Auto Club Enterprises	4.33%	0%
	Nationwide	3.52%	6%
Oregon	State Farm	25.28%	10%
	Farmers	19.02%	5%
	Allstate	10.65%	10%
	American Family	4.17%	10%
	Country Insurance	4.07%	5%
British Columbia	Aviva	8.05%	5%
	Canadian Northern Shield	6.23%	13%
	Economical Insurance	6.18%	0%
	Dominion of Canada	3.11%	0%
	Gore Mutual	1.85%	0%

Categorization of Sprinkler Systems

Many insurance companies classify the discount offered for residential sprinkler systems by the extent of sprinkler coverage in the home. While these exact categories and their specific requirements differ between companies, most insurers typically classify system types into "partial" or "full" systems. A partial system generally means sprinkler coverage in the main living area only. In a few instances, partial may be defined as sprinkler coverage in the utility room only. A full system often means sprinkler coverage in all areas of the home, including the basement or crawl space, all bathrooms, closets, and hallways. In some instances, a full system classification may also require sprinkler coverage in garages. Furthermore, several companies required the sprinkler system to be monitored with an alarm. For the purposes of this insurance survey, the discount percentage offered by an insurer that most closely aligned with the fire sprinkler ordinance requirements for the particular case study community being assessed was used.

Most insurance companies consider a residential sprinkler system to be a protective device. Other protective devices warranting homeowner's insurance discounts include a monitored fire alarm connected to the sprinkler system (which may range from a 3 to 5% discount based on limited feedback from insurance agents), smoke detector, fire extinguisher, security system, deadbolt locks, and home location in a gated community. The majority of insurance companies place a cap on the maximum discount percentage offered for all protective devices. This cap ranged from 10 to 20% in the survey, with an average protective device discount cap of 14%.

Penalties/Fees as a result of System Leakage

The presence of a residential sprinkler system can raise concern about the risk of accidental water leakage from the system. According to the Insurance Services Office, Inc. (ISO) standard "Homeowners 3—Special Form" policy provides for coverage due to damages from residential fire sprinkler system leakage provided that reasonable care has been taken to maintain heat in the building to prevent freezing of the residential fire sprinkler system. Essentially residential fire sprinkler piping is treated the same as regular household plumbing as far as coverage and pricing for ISO's

standard Homeowners program. Thus, there is no extra charge for the coverage of the peril of fire sprinkler leakage.⁷

This issue was probed in the insurance survey to see if the homeowner's insurance policy typically covers sprinkler system leakage. Insurers interviewed in the study echoed the preceding ISO recommendations. Insurance companies routinely treat sprinkler system piping the same as a plumbing system. Sprinkler system leakage is reported as a loss. Accidental sprinkler system leakage is most likely covered under the homeowner's insurance policy, whereas sprinkler system leakage as a result of a maintenance issue may not be covered by the policy. Claims adjusters determine whether or not sprinkler system leakage is covered under the homeowner's policy, often on a case by case basis.

Document Requirements for Discounts

For those insurance companies offering premium discounts for residential sprinkler systems, many require proof of the system's installation or existence. Methods of providing proof to insurance company underwriters vary among companies. However, the most common include an interior inspection of the home, a copy of the installation certificate and/or receipt, submitting pictures of the actual system, and providing the name of the sprinkler contractor. In some instances, one or more of these may be required by an insurer. In other cases, an insurer may not require any proof at all—the homeowner would simply be required to notify the insurer of the system installation upon application. It is important to note that misrepresentation in the application could put the homeowner in breach and possibly void parts or all of the policy.

Homeowner Awareness of Discounts

Homeowners are often informed of possible insurance savings for sprinklers by their insurance agent. An insurance agent typically gathers fact-finding information about the homeowner and the property in an initial or renewal appointment with the homeowner purchasing insurance. It is common for an insurance agent to ask the homeowner at this time if the property being insured has certain protective devices, including a residential sprinkler system.

⁷ Fire Sprinkler System Leakage in ISO Homeowners Policy, Insurance Services Office, 2008.
September 10, 2008

C. Related Issues Affecting the Magnitude and Availability of Discounts

The level of insurance discount knowledge varied greatly, which was particularly evident in comparing a region where residential sprinkler systems are very common to a region where residential sprinkler systems are not common. This often resulted in varying levels of an agent's familiarity with residential sprinkler systems and the insurance premium discount offered by their insurance company. Insurance agents with modest familiarity with residential sprinkler systems typically referred to the insurance company manual to obtain insurance premium discount information.

In obtaining information on possible penalties as a result of sprinkler system leakage, many agents were unsure of or unfamiliar with such penalties. Agents explained that insurance company underwriters deal with the claims process that would result if a sprinkler system were to accidentally leak.

D. Home Insurance Quotes for a Sample Home

As a separate part of the insurance study to complement the information obtained from the insurance survey, insurance policy quotes were obtained for the nine United States communities and one Canadian community using a theoretical prototype house. For the United States communities, the prototype house was a two-story 2,500 square foot colonial with an unfinished basement and one-car attached garage. Quotes were obtained with and without a sprinkler system in an effort to estimate the discount that may result from having a sprinkler system. Discount savings in dollars ranged from \$5 in Huntley, IL to \$53 in North Andover, MA, with an average savings of \$22. As a percentage from the quoted price without a sprinkler system, savings ranged from 1.14% to 6.68%, with an average of 3.42%.

For the Canadian community, the prototype house was a two-story 2,300 square foot home with crawl space, located in Pitt Meadows, British Columbia. Similar to the United States communities, quotes were obtained with and without a sprinkler system. Discount savings in dollars was \$55, and the percentage discount from the quoted price without a sprinkler system was 4.83%.

Community	Actual Residence Value	Quoted Residence Value	Premium without Sprinklers	Premium with Sprinklers (all areas)	Discount Savings(\$)	Discount Savings (%)
PG County (Bowie), MD	\$244,836	\$245,000	\$970	\$919	\$51	5.26%
Pleasant View, TN	\$223,612	\$224,000	\$600	\$588	\$12	2.00%
Matteson, IL	\$294,414	\$294,000	\$455	\$443	\$12	2.64%
Huntley, IL	\$282,051	\$282,000	\$438	\$433	\$5	1.14%
San Clemente, CA	\$316,172	\$316,000	\$674	\$661	\$13	1.93%
Fort Collins, CO	\$228,639	\$229,000	\$411	\$404	\$7	1.70%
Carroll County (Finksburg), MD	\$243,361	\$243,000	\$519	\$485	\$34	6.55%
Wilsonville, OR	\$274,138	\$274,000	\$342	\$332	\$10	2.92%
North Andover, MA	\$285,162	\$285,000	\$794	\$741	\$53	6.68%
Pitt Meadows, BC	--	\$305,000	\$1,139	\$1,084	\$55	4.83%

As noted in the above table, the average discount in all the communities when using a prototype home to get actual bids was less than the percentage range found in the insurance survey. This shows that there is variance in the discount percentage offered which can be best attributed to competitive market pricing.

Appendix A – Sprinkler System Costs by Community

Community and House Plan	Area of Sprinklered Spaces (SF)	Living Space (SF)	TOTAL COST	Local Sprinkler Credit	Net Cost (contractor + additional + credits) in \$/SF of Sprinklered SF	Net Cost (contractor + additional + credit) in \$/SF of Living Space
Fort Collins, CO - House 1	4,373	4,373	\$14,745	0	\$3.37	\$3.37
Fort Collins, CO - House 2	6,360	6,360	\$16,060	0	\$2.53	\$2.53
Fort Collins, CO - House 3	2,797	2,797	\$10,250	0	\$3.66	\$3.66
Pitt Meadows, BC - House 1	2,342	2,342	\$3,090	0	\$1.32	\$1.32
Pitt Meadows, BC - House 2	2,336	2,336	\$2,690	0	\$1.15	\$1.15
Pitt Meadows, BC - House 3	2,109	2,109	\$2,560	0	\$1.21	\$1.21
Pleasant View, TN - House 1	2,612	2,112	\$2,872	0	\$1.10	\$1.36
Pleasant View, TN - House 2	2,273	1,723	\$2,489	0	\$1.10	\$1.44
Pleasant View, TN - House 3	3,826	3,326	\$4,208	0	\$1.10	\$1.27
Prince George's County, MD - House 1	3,903	3,903	\$4,100	0	\$1.05	\$1.05
Prince George's County, MD - House 2	4,345	4,345	\$4,332	0	\$1.00	\$1.00
Prince George's County, MD - House 3	6,170	6,170	\$5,886	0	\$0.95	\$0.95
San Clemente, CA - House 1	6,542	3,482	\$2,565	0	\$0.39	\$0.74
San Clemente, CA - House 2	6,329	3,214	\$2,386	0	\$0.38	\$0.74
San Clemente, CA - House 3	6,448	3,358	\$2,655	0	\$0.41	\$0.79
Carroll County, MD - House 1	3,131	3,131	\$7,499	0	\$2.40	\$2.40
Carroll County, MD - House 2	4,686	4,686	\$9,800	0	\$2.09	\$2.09
Carroll County, MD - House 3	3,772	3,772	\$8,750	0	\$2.32	\$2.32
Matteson, IL - House 1	4,562	4,562	\$8,198	0	\$1.80	\$1.80
Matteson, IL - House 2	4,740	4,740	\$7,407	0	\$1.56	\$1.56
Matteson, IL - House 3	5,478	5,478	\$8,329	0	\$1.52	\$1.52
North Andover, MA - House 1	3,588	3,084	\$4,500	0	\$1.26	\$1.46
North Andover, MA - House 2	4,632	4,148	\$5,800	0	\$1.25	\$1.40
North Andover, MA - House 3	5,906	5,422	\$6,500	0	\$1.10	\$1.20
Wilsonville, OR - House 1	2,005	2,005	\$4,178	(\$1.21)	\$0.87	\$0.87
Wilsonville, OR - House 2	1,913	1,913	\$4,014	(\$1.21)	\$0.89	\$0.89
Wilsonville, OR - House 3	2,917	2,917	\$5,892	(\$1.21)	\$0.81	\$0.81
Huntley, IL - House 1	3,835	3,400	\$8,476	0	\$2.21	\$2.49
Huntley, IL - House 2	4,575	4,030	\$8,851	0	\$1.93	\$2.20
Huntley, IL - House 3	5,045	4,560	\$10,406	0	\$2.06	\$2.28