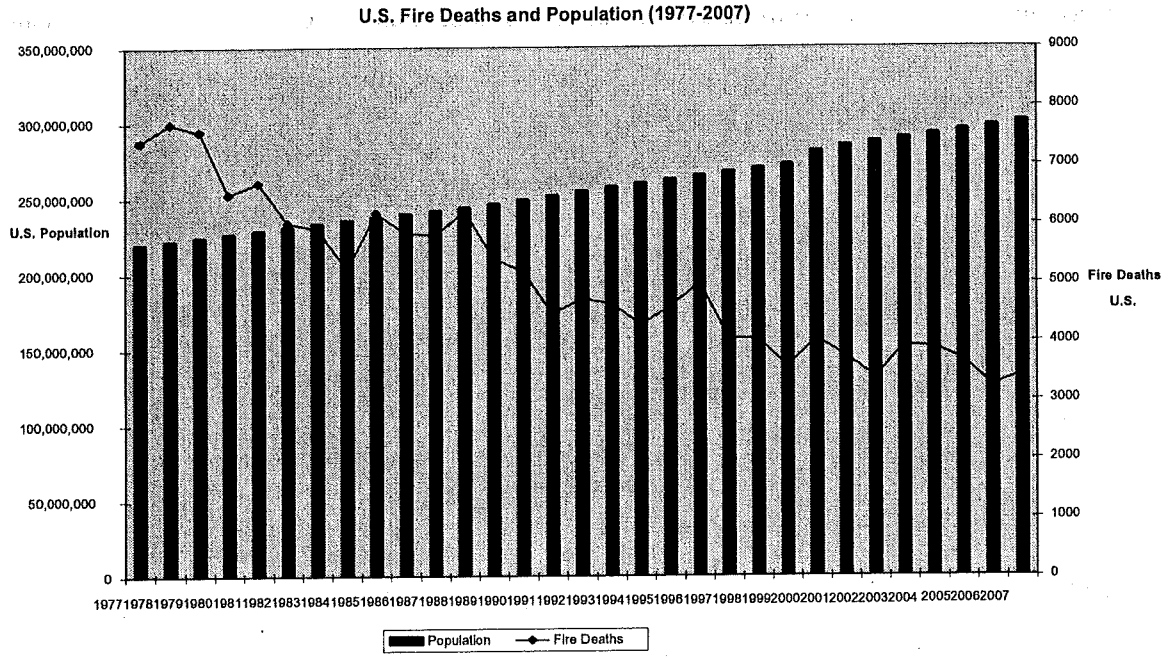
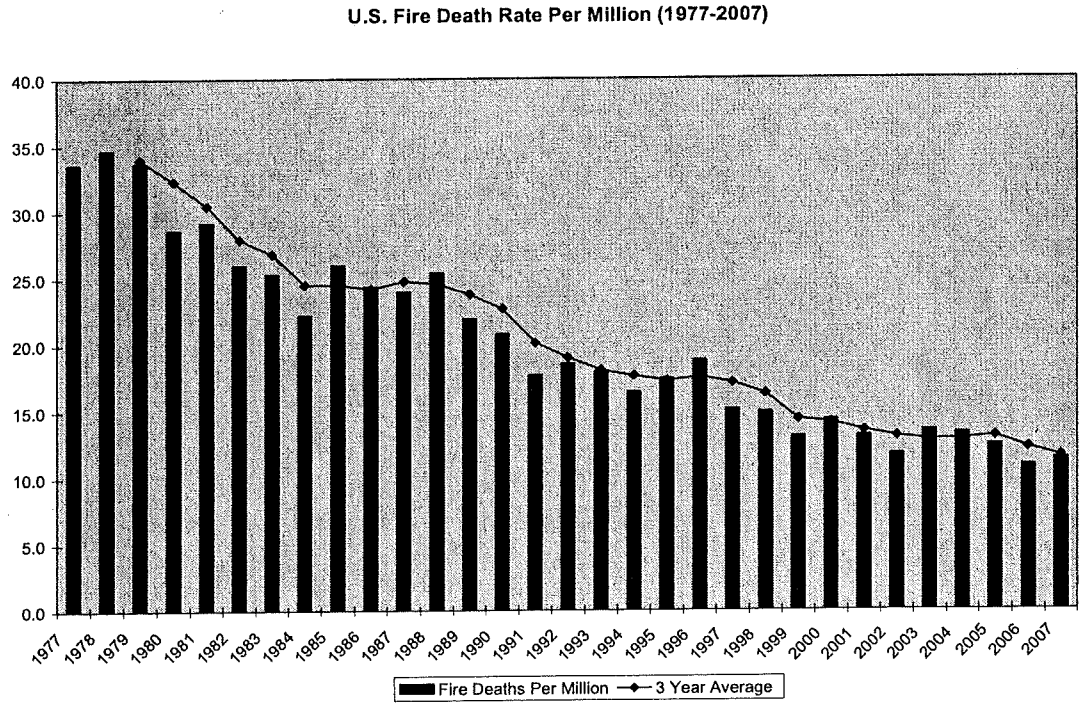
US Fire Deaths

Over the past three decades the number of individuals dying in fires has fallen dramatically. Between 1977 and 2007 the number of U.S. fire deaths declined 54 percent.



Source: National Fire Protection Association

This reduction understates the true improvement in fire safety, as the US population grew by more than 80 million persons during the 30 year period. The fire death rate per million people, a better measure of fire safety, fell from 33.6 in 1977 to 11.4 in 2007—a full 66 percent.



Source: National Fire Protection Association

Age of Housing and Fire Death Correlations—*Older Homes at Greater Risk*

Findings from a number of existing studies consistently show that newer homes experience fewer fire deaths than older homes. A study conducted by the National Association of Home Builders (NAHB) in 1987 found that fatality rates increased with the age of homes. For example, houses less than seven years old had fatality rates one-third of houses seven to 17 years old, and one-sixth the rate of houses that were more than 25 years old. Nearly identical results were obtained in a California Building and Industry Association study released in 1996. That study found that the average fatality rate in residential dwellings in California consistently increased as the housing stock aged. Interestingly, they found this relationship to be true for every successive four-year period going back all the way to 1956. More recently, it's been found that, in Dallas, residential fire-related injuries declined in every decade for houses built after 1949 (*New England Journal of Medicine / 2001*) That is, houses built in the 1980s were found to be safer than those built in the 1970s, which, in turn, were found to be safer than those built in the 1960s, and so on.

A statistical study prepared by NAHB in 2005 found that residential fire death rates are lower in counties where the housing stock is newer, home prices are higher, and the share of manufactured housing is lower. Analyzing a dataset of actual information from 458 counties using data from the U.S. Census Bureau and the National Center for Health Statistics, the research found that the higher the home prices, the greater the percentage of new construction, and the lower the share of manufactured housing, the lower the fire death rate. Counties with a larger share of new homes have a lower fire death rate because new homes are safer.

Fire Fatalities in Residential Dwellings via Year of Construction: California (1986-1991)

FIRE FATALITIES (1952-1991)		
YEAR BUILT	**NUMBER**	**PERCENT OF TOTAL**
1987-1991	0	0.00%
1982-1986	9	1.30%
1977-1981	16	2.30%
1972-1976	41	5.80%
1967-1971	52	7.40%
1962-1966	79	11.20%
1657-1961	80	11.30%
1952-1956	88	12.40%
Pre 1952	341	48.30%
Total**	706	100.00%

Source: California Building Industry Association: Fire Fatalities In Residential Dwellings

Average Annual Fatalities – Adjusted For Housing Stock

Year Built	Total Fire Fatalities (1986-1991)	Annual Average Fatalities ÷ 6 Years	Residential Housing Stock	Average Fatalities (Per Million Units)
1987-1991	0	0	1,016,709	0
1982-1986	9	1.5	1,069,956	1.4
1977-1981	16	2.67	975,018	2.74
1972-1976	41	6.83	980,089	6.97
1967-1971	52	8.67	907,766	9.55
1962-1966	79	13.17	1,119,290	11.77
1957-1961	80	13.33	1,042,387	12.79
Pre 1957	429	71.5	4,043,194	17.68

Source: California Building Industry Association: Fire Fatalities In Residential Dwellings

Priced Out

Each additional cost increasing mandate reduces the number of people who are able to enter the new home market. Increased costs will result in fewer people being able to afford a newer home. Pricing Consumers out of the newer home market will place them in older homes that were not built to today's more stringent building codes.

United States Households Priced Out of the Market by an Increase in House Prices in 2009

Area	Mortgage Rate	House Price	Monthly Mortgage Payment	Taxes and Insurance	Minimum Income Needed	Households That Can Afford House
United States	5.00%	$200,900	$1,021	$242	$54,129	56,194,993
United States	5.00%	$201,900	$1,026	$243	$54,398	55,948,972
Difference		$1,000	$5	$1	$269	**-246,021**

Households Priced Out of the Market for a median Priced New Home by a $1,000 Price Increase

Metro Area	Median new home price	Income needed to qualify	Number of households	Households priced out
Bellingham, WA MSA	$265,579	$78,185	74,183	105
Bremerton-Silverdale, WA MSA	$382,270	$112,538	92,477	86
Kennewick-Richland-Pasco, WA MSA	$311,851	$91,807	76,266	100
Longview, WA MSA	$282,855	$83,271	37,746	56
Mount Vernon-Anacortes, WA MSA	$204,530	$60,212	42,319	107
Olympia, WA MSA	$208,103	$61,264	89,061	191
Portland-Vancouver-Beaverton, OR-WA MSA	$384,419	$113,170	803,442	707
Seattle-Tacoma-Bellevue, WA MSA	$417,053	$122,777	1,280,591	1,310
Spokane, WA MSA	$231,009	$68,007	177,754	386
Wenatchee, WA MSA	$234,170	$68,938	39,057	88
Yakima, WA MSA	$262,917	$77,401	76,288	89
			Total	**3,225**

**Total Includes Portland and Beaverton, OR*

Households Priced Out of the Market for a median Priced New Home by a $5,000 Price Increase

Metro Area	Median new home price	Income needed to qualify	Number of households	Households priced out
Bellingham, WA MSA	$285,000	$77,863	71,056	607
Bremerton-Silverdale, WA MSA	$265,000	$74,303	88,937	847
Olympia, WA MSA	$240,000	$67,481	89,057	1,121
Portland-Vancouver-Beaverton, OR-WA MSA	$265,000	$74,244	811,622	7,434
Richland--Kennewick--Pasco, WA MSA	$185,000	$52,039	74,081	1,032
Seattle--Bellevue--Everett, WA MSA	$370,000	$102,559	970,420	6,566
Spokane, WA MSA	$160,000	$45,164	162,545	2,515
Tacoma, WS MSA	$260,000	$74,063	272,311	2,671
Yakima, WA MSA	$165,000	$45,368	76,059	1,073
			Total	**23,866**

**Total Includes Portland and Beaverton, OR*

(1)

RESIDENTIAL FIRE SPRINKLER COST TO HOMEBUYER

HOME LOCATION: MONDAVIO, LOT 41 10334 155th AVE. NE
2722 S.Q. FT.

DEVELOPMENT PHASE COST

WATER METER SUPPLY / YOKE	$1,849.00
INTEREST CARRY COST 1 YR. @ 9.%	166.41

HOME CONSTRUCTION COST

1" WATER METER RCFC	$2,289.00
METER DROP CHARGE	232.50
INTEREST CARRY COST 112 DAYS @ 9.%	70.13
FIRE SPRINKLER PERMIT	214.00
* HOUSE FIRE SPRINKLER INSTALLATION	6,127.00
INTEREST CARRY COST 88 DAYS @ 9%	132.95
INSTALLATION PERIOD INTEREST CARRY COST ~5 DAYS /	549.86
* WATER SERVICE LINE INSTALLATION (AVERAGE)	419.83
INTEREST CARRY COST ON LINE 142 DAYS @ 9.%	14.70
* TAX ON TAXABLE ITEMS ABOVE @ 8.8%	576.12
SUBTOTAL	12,641.50
BUILDER'S OVERHEAD & PROFIT	2,781.13
COST TO HOMEBUYER	$15,422.63

ON-GOING COST TO HOMEBUYER ±$150.00/YR.
BACKFLOW DEVICE TEST

(2)

RESIDENTIAL FIRE SPRINKLER COST TO HOMEBUYER

HOME LOCATION: MONDAVIA, LOT 8 15534 NE 106TH WAY
3,994 SQ. FT.

DEVELOPMENT PHASE COST

WATER METER SUPPLY / YOKE	$1,849.00
INTEREST CARRY COST 1 YR. @ 9.%	166.41

HOME CONSTRUCTION COST

1" WATER METER RCFC	$2,289.00
METER DROP CHARGE	232.50
INTEREST CARRY COST 112 DAYS @ 9.%	70.13
FIRE SPRINKLER PERMIT	214.00
* HOUSE FIRE SPRINKLER INSTALLATION	$8,389.00
INTEREST CARRY COST 88 DAYS @ 9%	182.03
INSTALLATION PERIOD INTEREST CARRY COST -5 DAYS /	549.80
* WATER SERVICE LINE INSTALLATION (AVERAGE)	419.83
INTEREST CARRY COST ON LINE 142 DAYS @ 9.%	14.70
* TAX ON TAXABLE ITEMS ABOVE @ 8.8%	775.18
SUBTOTAL	$15,151.64
BUILDER'S OVERHEAD & PROFIT	$3,333.36
COST TO HOMEBUYER	$18,485.00

ON-GOING COST TO HOMEBUYER ±$150.00/YR.
BACKFLOW DEVICE TEST

Fire Sprinkler Costs -City of Redmond - Northstar Project

Job costs associated with sprinkler installation:

Extra permit:	$500	
Extra time to build house:	$700	(3.5 days at $200/day carry cost)
Extra poly line to home for sprinklers:	$150	
T & shutoff at meter for ded. fire line:	$495	
Water meter box:	$225	See Note 1
Electrical for siren and flow switch:	$390	
Insulation tents at attic sprinkler lines:	$200	
Miscl costs-super, estimator:	$150	
TOTAL	**$2,810**	

Fire sprinkler quotes per plan:			System	Sales Tax	Plus assoc.	Sub total	Costs added as a % to Direct job costs: 1.78% Excise Tax	% Commission on Sales: 3% Listing	3% Sales	% Overhead Allow 30%	% Profit Allow 5%	Cost to Homeowner TOTAL
533 plan	3018sf		$4,999	$450	$2,810	$8,259	$147	$248	$248	$2,478	$413	$11,792
535 plan	3384sf		$5,560	$500	$2,810	$8,870	$158	$266	$266	$2,661	$444	$12,665
536 plan	3167sf		$4,999	$450	$2,810	$8,259	$147	$248	$248	$2,478	$413	$11,792
539 plan	3284sf		$5,180	$466	$2,810	$8,456	$151	$254	$254	$2,537	$423	$12,074
540 plan	4555sf	includes bsmt	$7,460	$671	$2,810	$10,941	$195	$328	$328	$3,282	$547	$15,622

Note 1: City requires the installation of a second meter box for the split connection at the existing 3/4" meter. It contains the shut off valves so the city may shut off the domestic supply without interrupting the fire service line.