

Clarification of Facts related to Residential Sprinkler Systems

Peterborough Fire/Rescue responds to the Petitioners with facts. Below are the petitioner's public statements and the facts as presented by Peterborough Fire/Rescue.

- The Petitioners: "The cost of installing sprinkler systems may be beyond the reach of many who would like to build. It is way beyond the \$1.00 per square foot that has been discussed, especially beyond municipal water supply.
A recent 1950sq. Ft. home in Peterborough:
\$4980.00 Installed System
\$1650.00 Pump and Tank upgrades
\$6630.00 Subtotal
\$8453.00 Interest (30 yr Mortgage @ 6.5%)
\$7.74/Sq. Ft Cost"

- ✓ **Fact: Actual figures must include the total sprinkled area, including basements and garages if sprinkled. Figures provided by petitioners include unspecified mark-up by top of the line contractor.**
- ✓ **Fact: Actual cost figures from Peterborough¹**

**New: Webb Road, 2002-Town Water
2200 Sq. Ft., Cost to builder \$1.10/sq. Ft. Sprinkled area.
Data Provided By Life Safety Fire Protection.**

**New: 719 Wilton Road, 2002-Private Well
2884 Sq. Ft Living space, plus garage, basement, knee walls and bonus room over garage. Cost to builder \$0.84/sq.ft.total sprinkled area, \$1.79 "living space".
Plans and Invoice available.**

**Retrofit:
220 General Miller Road, 2000-Private Well
3300 Sq. Ft Living space, plus garage, basement and garage attic. Cost to owner \$0.88/Sq. ft total sprinkled area. \$1.33/Sq. ft "living space".**

¹ Data from actual installations of residential systems in the Town of Peterborough, 2000-2002.

- ✓ **Fact: Nationwide figures are \$1.00 to 1.50 / sq ft average.**²
- ✓ **Fact: The cost of Residential Sprinklers compares with that of an upgrade in the quality of carpeting. Carpet upgrades are routine choices that most people do not regard as overly expensive, let alone a staggering cost that prevents them from buying a home. But sprinklers last the life of a home while carpet needs to be replaced at least every ten years, so the total cost of sprinklers is much less than the total cost of carpeting.**³
- The Petitioners: “Cost of ownership: Heat cannot be reduced in home using the “wet systems” because of freeze hazard, pipe failures have occurred resulting in considerable water damage.”
 - ✓ **Fact: Residential systems commonly use “Firefighter GL” Anti-Freeze.**⁴
 - ✓ **Fact: Some Wet residential systems are designed to be interconnected to domestic water, which would freeze as well.**
 - ✓ **Fact: Odds of accidental activation are 1 in 16 million**⁵
 - ✓ **Fact: A fire sprinkler on average uses 341 Gallons of water to control a fire. Firefighters on average use 2935 gallons. Reduced water damage is a major source of savings for homeowners.**⁶
- The Petitioners: “Older Housing Stock is the major contributor to fire problems in residential housing.”
 - ✓ **Fact: National Fire Protection Association (NFPA) analysis of fire data shows structure age is not a predictor of fire rates. This is because most fires occur because of human behavior.**⁷
- The Petitioners: “Fire Deaths are declining in the US.”
 - ✓ **Fact: Fire kills more people in the United States every year than all natural disasters combined**⁸
 - ✓ **Fact: 80% of all fire deaths occur in the home.**⁹

² Home Fire Sprinkler Coalition

³ Residential Fire Safety Institute; 2003 National Building Cost Manual.

⁴ See Actual 5 gallon Pail, on display

⁵ Automatic Sprinklers: a 15 Year Study, Rural/Metro Fire Department, Scottsdale, Arizona, 2002

⁶ Ibid

⁷ U. S. Fire Death Patterns by State, 1980-1991, National Fire Protection Association, September 1995, page 14. National Fire Protection Association, Fire Analysis & Research Division, 1 Batterymarch Park, Quincy, MA 02269-9101.

⁸ National Fire Protection Association 1998 Fire Loss in the U.S. and Fire in the United States 1987-1996 11th Edition

⁹ Ibid.

- ✓ **Fact: In the past 28 years there have been at least four fire deaths in Peterborough.¹⁰ Amidon, Bourgoine, Gagnon and Lindsay.**
- The Petitioners: “Hard wired interconnected smoke detectors make a significant difference in fire safety, are now required and inexpensive.”
- ✓ **Fact: Recent studies indicate the young and elderly do not wake up with smoke detectors and have difficulty egression. Studies show that smoke detectors reduce your likelihood of dying by 40-50%¹¹**
- ✓ **Fact: The fire death rate for senior citizens and children under the age of 5 is nearly double the risk of the average population.¹²**
- ✓ **Fact: Residential Sprinklers increase the likelihood of survival to over 97%¹³**
- The Petitioners: “Other Continuing enhancements in code requirements continue to improve the safety of new housing (arc fault detectors)”
- ✓ **Fact: Electrical systems are a distant fifth in the ranking of fire causes, accounting for 8 percent of all dwelling fires.¹⁴**
- ✓ **Fact: Over 80% of dwelling fires result from misuse of smoking materials, playing with matches and lighters, and arson.¹⁵**
- ✓ **Fact: New well insulated homes pose a greater threat. Energy efficient homes hold the heat and toxic gasses of a fire in, and speed up the time to a deadly flashover.**
- Existing codes require fire stops, blocking egress windows, etc.
- ✓ **Fact: Decades of fire loss data show that fire victims die long before a fire reaches the inside of a wall or ceiling where fire stops are located.**
- ✓ **Fact: The number of smaller or larger windows has never been found to be related to the number of residential fire deaths.¹⁶ This is because most victims are overcome before they can attempt to escape.**

¹⁰ Amidon, Gulf Road 10/72; Bourgoine, West Peterborough 12/74; Gagnon, Union Street 9/78; Lindsey, Vale Street 5/87. Peterborough Transcript various editions. Copies available at PFR.

¹¹ Automatic Sprinklers: a 15 Year Study, Rural/Metro Fire Department, Scottsdale, Arizona, 2002

¹² Investigator Rodenhiser, New Hampshire State Fire Marshal's Office

¹³ Automatic Sprinklers: a 15 Year Study, Rural/Metro Fire Department, Scottsdale, Arizona, 2002

¹⁴ Patterns of Fire Casualties in Home Fires by Age and Sex, National Fire Protection Association, September 1995

¹⁵ Annual reports from the United States Fire Administration, the National Fire Protection Association and the Consumer Product Safety Commission

¹⁶ The model building codes accept windows with 5.7 square feet of openable area as escape windows.

- ✓ **Fact: NFPA 101 Life safety code does not require egress windows if residential sprinklers are present.**¹⁷
- The Petitioners: “Existing Town Driveway Regulations and subdivision approval requirements guarantee adequate emergency equipment access.”
- ✓ **Fact: Existing Driveway regulations in Subdivision and Zoning improve access but do not guarantee emergency access**¹⁸
- ✓ **Various conditions can lead to first unit on scene times of 4 to 20+ min.**

Other resources used in the development of this data:

<http://www.homefiresprinkler.org/hfsc.html>

<http://www.firesafehome.org/sprinklers/Answers.asp>

<http://www.usfa.fema.gov/dhtml/public/facts.cfm>

<http://www.nfsa.org/>

<http://www.nfpa.org/Home/index.asp>

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¹⁷ NFPA 101 Life Safety Code, 21-2.2.2, 1997 Edition.

¹⁸ Town of Peterborough Subdivision Regulations, 237-14.1; Town of Peterborough Zoning Regulations, 245-25.