

Stakeholder Perceptions of Home Fire Sprinklers

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Abstract

For years there have been debates across the country on whether or not to adopt code requirements that mandate home fire sprinklers. While the fire protection industry argues home fire sprinklers are essential for improving the safety of the homes' occupants, many in the home building industry have argued against mandatory fire sprinklers because of the additional costs associated with them. As more and more states and jurisdictions consider adoption it seemed valuable to gauge stakeholder perceptions in states with widespread adoption. While the fire protection and home building industry are at the forefront of the debate on home fire sprinklers, the reality is that implementing requirements for home fire sprinklers impact a variety of stakeholder groups.

To best understand the impact that home fire sprinkler requirements have on these stakeholder groups, this study focuses on the only two states in the country with mandatory requirements for home fire sprinklers, California and Maryland. The full report includes an analysis of the overall experience and perceived value of the systems by homeowners, local government officials and water purveyors. These stakeholder groups were identified because they are all directly impacted by the requirements for home fire sprinklers. Although covered in the key findings, this paper only provides additional detail on the homeowner stakeholders.

Keywords: Home fire sprinklers, fire suppression

Key Findings

Homeowners- The majority of homeowners have a very positive view of sprinklers and would seek to have them included in their next home. Their positive view is most clearly associated with a sense of improved life safety (94 %). Generally, they are less knowledgeable about specific details such as additional features, inspections, or sprinkler

requirements. The majority of homeowners did not worry about water damage, however, 16 or 32 % indicated concern for water damage either to furniture or the structure, or both.

Local Government Officials – When asked about the effects home fire sprinklers have on the homes in their jurisdiction it is clear that most local government officials view them in a positive light. The majority of participants believe that home fire sprinklers help reduce death and injury to both residents and firefighters, and help in reducing the costs due to fire damage. The conversation about home fire sprinklers seems to be more prevalent in Maryland than in California but in both states the majority felt the conversation was positive. While very few people indicated there was any negative tone to the conversation surrounding home fire sprinklers, when they did, cost was the identified as the biggest issue.

Water Purveyors – Most water purveyors in both California and Maryland required a larger service line (1 to 1-1/2 ") and a larger meter (3/4" to 1-inch) in advance of the sprinkler requirement taking effect. Purveyors typically deal up to the meter, so once the service line and upgraded meter are in place, water utilities have very little concern for home fire sprinklers. In Maryland, they are aware of the regulation but leave the application, implementation, maintenance and performance to the permit and fire engineering departments. Purveyors in California have similar responses, however, 4 of the 15 interviewed identified additional requirements beyond NFPA 13D or additional fees beyond usage.

Data Analysis- Homeowners

Table 1 identifies the home characteristics of the 50 homeowner survey respondents (25 in each state) representing a good mix of townhouses and single family detached homes as well as those on public water and well systems.

Table 1. Housing Characteristics.

Survey Housing Characteristics- All Homes	
Type of Home	
Single-Family Homes	36
Townhomes	13
No Response	1
Water Supply	
Public Water	46
Well & Septic	4
Year Built	
Before 2013	37
After 2013	13

Participants were asked to identify how important the presence of home fire sprinklers was to their purchasing decision. Respondents could choose 1 of 5 answer options; Not Important at All, Not Very Important, Didn't Think Much About It, Somewhat Important, or Very Important. As highlighted in the chart below, the majority of homeowner respondents (54 %) identified the presence of the home fire sprinklers as being either somewhat or extremely important to their purchasing decision.

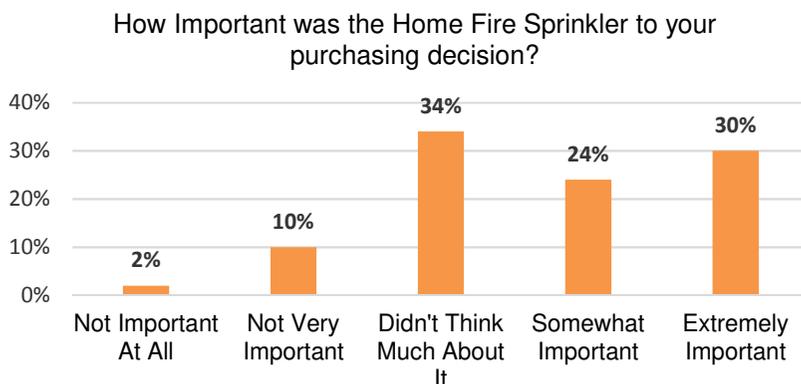


Fig. 1. Importance of home fire sprinklers in purchasing decisions.

The top answer choice for this question was “Didn’t Think Much About It” (17) followed by “Very Important” (15) and then “Somewhat Important” (12). Only 6 respondents total selected either “Not Very Important” (5) or “Not Important at All” (1).

Participants were also asked to identify various features relating to their home fire sprinklers including: a separate water heater, backflow preventer, pump & tank and water flow alarm. The survey results indicate that homeowner knowledge of these additional features and inspections is extremely limited.

When asked whether their home fire sprinkler was regularly inspected, 28 % of respondents indicated that it was. Another 28 % of respondents did not know if their home fire sprinklers were regularly inspected and the highest percentage, 44 %, said their home fire sprinklers were not inspected regularly.

It is important to note that NFPA 13D, the standard for home fire sprinkler installation for 1 and 2 family dwellings and manufactured homes, does not require regular inspections of the home fire sprinklers. Certain jurisdictions may have implemented specific regulations that require home fire sprinklers to be inspected, however that information was not gathered for this study. Additionally, many general home inspections may include some level of assessment of the installed home fire sprinklers.

The depth of these inspections is unknown and could be simply checking to see that sprinkler heads are installed and not necessarily an inspection of the entire system.

Are your home fire sprinklers regularly inspected?

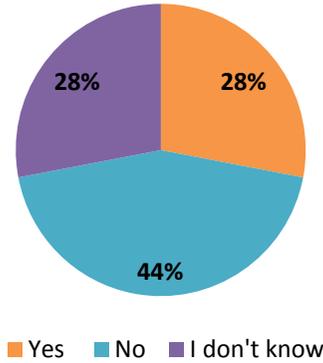


Fig. 2. Home fire sprinkler inspections.

When asked to identify any additional features of their home fire sprinklers, the overwhelming majority (62 %) did not know or could not identify any. For this question, respondents were able to choose all answer options that applied to their home. Those selecting “I don't know” indicates they didn't know of any additional features of their home fire sprinklers.

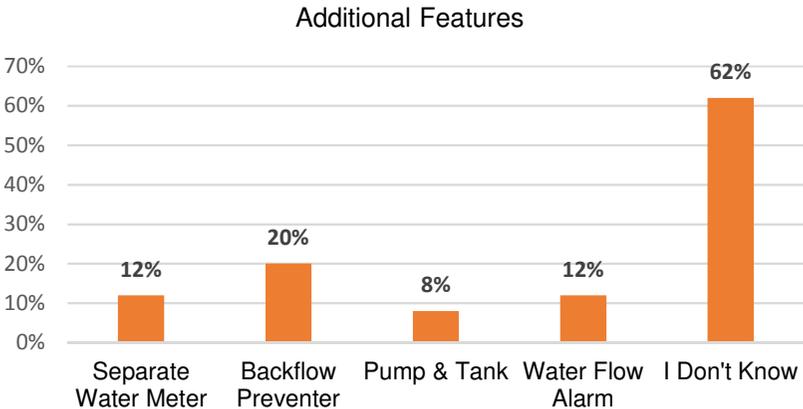


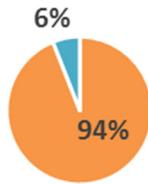
Fig. 3. Additional features of home fire sprinklers.

Perceived Benefits of Home Fire Sprinklers

The survey results show clear findings from questions relating to home fire sprinklers on a personal level. Respondents were asked several questions on some of the potential benefits of home fire sprinklers. The results for each of these questions indicates an overwhelmingly positive view of home fire sprinklers from homeowners.

- 94 % of participants indicated their home fire sprinklers provide them with a sense of safety. Only 3 out of 50 participants answered “no” to this question.
- 68 % of participants indicated that having home fire sprinklers adds value to their home. Only 2 respondents suggested home fire sprinklers do not add value to the home.
- 68 % of participants indicated that the presence of home fire sprinklers provides them with a reduction on their home insurance. While insurance rates vary from state to state, ISO data estimates the average reduction in home insurance to be 8 % with the presence of home fire sprinklers.

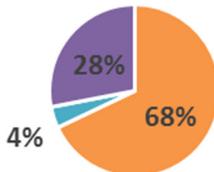
My home fire sprinklers provide me with a sense of safety



■ Yes ■ No

Fig. 4. Homeowner sense of safety.

Having the home fire sprinkler adds value to my home



■ Yes ■ No ■ I Don't Know

Fig. 5. Added value of home fire sprinklers.

Having the home fire sprinkler system lowers the cost of my homeowner's insurance

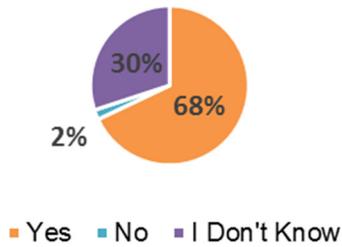


Fig. 6. Homeowner's insurance reductions.

Fear of Water Damage

A frequently cited issue and/or concern with home fire sprinklers is the effect of water damage from the sprinklers on the rest of the home. To identify the extent of this concern, the survey first asked all respondents whether they were afraid of water damage from their home fire sprinklers. Results indicate that while there is some concern for water damage, the majority (68 %) of homeowners are not afraid of water damage from their sprinklers.

I am afraid of water damage from my home fire sprinklers

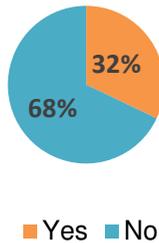


Fig. 7. Fear of water damage.

Preference for Home Fire Sprinklers

A significant majority of homeowner respondents in both California and Maryland indicated that they prefer to live in a home with fire sprinklers. 88 % of participants indicated their preference is to have home fire sprinklers installed in their home. The survey asked this question in two ways and results were similar across both questions.

I would prefer a home with a home fire sprinkler system

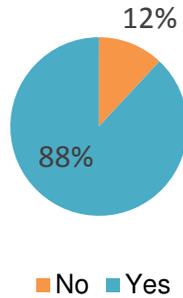


Fig. 8. Preference for a home fire sprinkler system.

For those who indicated they would prefer a home with home fire sprinklers, the reasons why are highlighted in Fig. 10. The chart shows a percentage of total respondents for the entire survey (50), not just those who were presented this question.

Reasons you would prefer a home with a home fire sprinklers

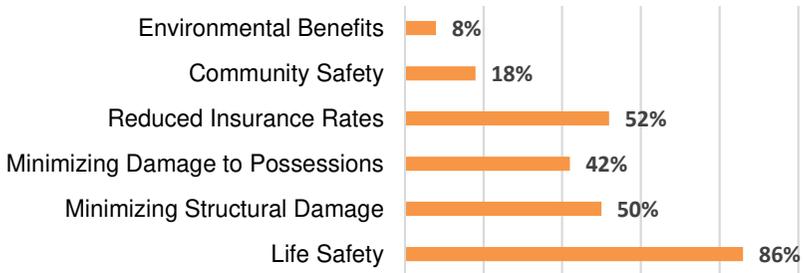


Fig. 9. Reasons for preferring a home with home fire sprinklers.

Home Fire Sprinkler Requirements

Although sprinkler systems are required in each of the jurisdictions answering the survey and were present in all the homes, many respondents either did not know or were unaware of a requirement for sprinklers. The results from this question further highlight the lack of knowledge homeowners have when it comes to specific details regarding home fire sprinklers.

Are home fire sprinklers required in your area?

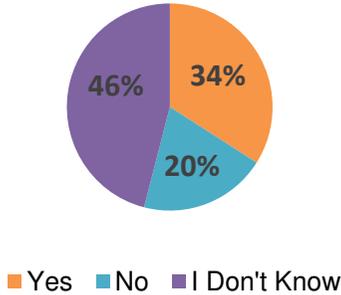


Fig. 10. Knowledge of home fire sprinkler requirements.

Perceived Cost of Home Fire Sprinklers

Survey participants were asked two related but independent questions about the cost of their home fire sprinklers. The first question asked whether the sprinkler system was included as a part of the cost of their home when they purchased it. The second question asked if they had incurred an additional cost for the home fire sprinklers. It is not clear how homeowners interpreted these related questions due to the high percentage of overlap between answers and respondents choosing “I don’t know.” What does seem to be clear is that the majority did not believe they paid an additional cost for the home fire sprinklers. The majority (62 %) of respondents answered that they did not know or left blank the question on what they would pay for home fire sprinklers installed in their home.

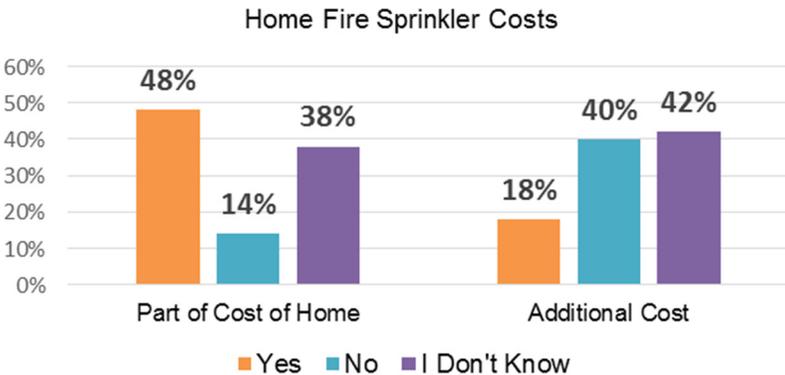


Fig. 11. Cost of home fire sprinklers.