# Chapter 2
# Community Selection

This section contains information relating to community selection. It details the criteria for selecting communities and provides an overview of the communities identified.

To obtain builder cost data, we identified 17 communities comprising 51 homes, typically three homes per community. In contrast, the 2008 benchmark study featured ten communities (30 homes) that were selected based primarily on geography, availability of data, system type, and sprinkler ordinance status. We contacted all ten of the original communities for participation in the current study to gather data on changes in system cost over time. However, for various reasons, only five of the original communities are included in the current study. For example since 2007, Huntley, Illinois, only requires that sprinkler systems are a "mandatory option," in which builders must provide homeowners with the *option* to install a fire sprinkler system. This factor combined with reduced building activity resulted in an inability to locate sprinkler projects in that community. Four additional communities: Matteson, Illinois; San Clemente, California; Pleasant View, Tennessee; and Wilsonville, Oregon also experienced a severe slowdown of residential building activity such that we were unable to locate sprinkler system projects. In order to make up for lost data, additional similar or neighboring communities were selected. Figure 2.1 illustrates the building activity from the communities in the 2008 study as well as the new additions for 2013. Building activity is important for two reasons—first as an indicator of community size and second as an indicator of a healthy building environment relative to community size. As this study period follows a severe downturn in the housing market followed by an uneven recovery, we needed communities that had ongoing building activity in order to capture recent cost data.

Communities surveyed in 2008 that are not included in the 2013 update are highlighted in yellow.

Although some communities included in the study also experienced low building activity, these are small communities in which we were successful in locating recent buildings. These communities provided important geographic diversity to the data. The current study includes four communities from Maryland and

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| Community | # Single Family Building Permits since 2008 |
|---|---|
| Addison, TX | 53 |
| Bakersfield, CA | 4,454 |
| Baltimore County, MD | 2,748 |
| Carroll County, MD | 1,015 |
| Cheatham and Davidson Counties, TN | 6,504 |
| Elk Grove, CA | 1,374 |
| Fort Collins, CO | 1,328 |
| Fresno, CA | 4,690 |
| Greenburgh, NY | 83 |
| Huntley, IL | 573 |
| Irvine, CA, | 2,754 |
| Kenmore, WA | 307 |
| Lake County, IL | 206 |
| Matteson, IL | 27 |
| Montgomery County, MD | 4,535 |
| North Andover, MA | 81 |
| Pitt Meadows, BC, Canada | 439 |
| Pleasant View, TN | 60 |
| Prince Georges County, MD | 4,497 |
| San Clemente, CA | 139 |
| Scottsdale, AZ | 1,032 |
| Wilsonville, OR | 262 |

**Fig. 2.1** Number of building permits since 2008

California as a result of these states having passed statewide sprinkler regulations in 2011. This data provides a better understanding of how the cost of a residential fire sprinkler system has been affected by a statewide requirement.

In addition to the effect of statewide sprinkler regulations, an effort was made to include communities that varied in terms of length of time a requirement for sprinkler systems was in effect. In total, nine communities had sprinkler ordinances

for more than 5 years, six had ordinances under 5 years, and three had no ordinance.[1]

Participating communities were selected to provide geographic diversity and reflect a variety of local circumstances that impact sprinkler system cost. Differences such as type of installer (sprinkler contractor or plumber), piping materials, and local modifications to NFPA 13D vary amongst the communities. Further, having a broad geographic range allowed for the inclusion of a variety of housing types. For example, basement foundations are typical in the Northeast, while a slab foundation is more common in California and Texas.

While the status of the sprinkler ordinance and the geographic location were primary selection criteria, several other factors were evaluated with the intent of gaining a diverse set of data. For instance, at least one community with plumber-installed multipurpose systems was included, and a concerted effort was made to include a system using passive purge (Fresno, CA).

Systems cover a range of sprinkler piping materials: Chlorinated Polyvinyl Chloride (CPVC, most common), Cross-linked Polyethylene (PEX) and some black steel and copper used in combination with CPVC in basements and garages. The water supply used in the sprinkler systems was also examined to determine differences between sprinkler system costs in areas with and without a municipal water supply. The current study includes seven homes on stored water systems (well water) with the remaining homes on public water supply.

The decline of new residential building activity was a major challenge in locating communities, particularly in the Southeast. About 15 Southeast communities having sprinkler ordinances were contacted, however, lack of building activity, as well as special provisions[2] within the ordinances made it difficult to collect data relevant for this study.

The 17 communities selected for the 2013 update are illustrated on the map in Fig. 2.2.

[1] Cheatham County, TN and Davidson County, TN were counted as one community for the overall purpose of the study because of their proximity. However, it is important to note that while Cheatham County has a sprinkler ordinance, Davidson County does not. For this reason, we included Cheatham County in the count of homes with sprinkler ordinances over 5 years and Davidson County as having no ordinance.

[2] Many of the Southeast communities' ordinances applied only to larger homes.

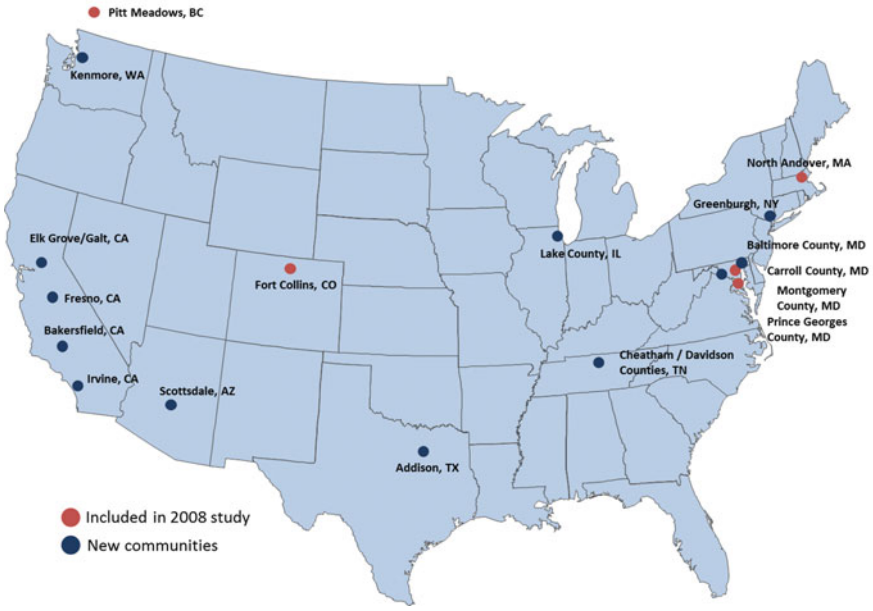



**Fig. 2.2** Communities included in the 2013 study showing geographic distribution



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