ABSTRACT

New York State Builders Association (NYSBA) commissioned **Asterhill Research Company** to conduct a Housing Study to assess the feasibility and impact of requiring fire sprinkler systems in newly constructed one and two-unit residential dwellings in New York State (excluding New York City). This study analyzed population, housing, and economic trends along with current market data to evaluate the practicality of mandating automatic fire sprinkler systems in new residential homes.

The National Fire Sprinkler Association (NFSA) and the U.S. Fire Administration (USFA) have promoted fire sprinkler systems in residential homes[61,62]. They state that residential fire sprinkler systems will save the lives of occupants and firefighters and reduce injuries. It is contended that property damages will be substantially reduced, and residential fire sprinkler systems are inexpensive to install during new construction. Fire sprinkler advocates continue to push for legislation to mandate automatic fire sprinklers in new one- and two-family structures.

In a review of fire fatalities between 2019 and 2023, the mean dwelling was built around 1932. No residential fire fatalities occurred between 2019 and 2023 in 1 and 2-unit homes built after 2000. There were an average of 64 fatalities (annually) or 3.0 fatalities per million in NYS. Cooking was the leading cause of residential fires, followed by heating and electrical malfunctions. Carbon monoxide poses the greatest threat to civilians and firefighters in residential structure fires, along with heat and oxygen deprivation[22]. FEMA reported in NYS that only 33% of dwellings in residential fire fatalities had smoke alarms, and not all of these smoke alarms were working.

The cost of residential fire sprinkler systems is not $1.30 to $3.00 per square foot, as represented by the advocates. The average cost in NYS is $8.42 to $10.47 per square foot, raising the cost of a new home by $20,000-$30,000 (3%-5%). This doesn't include the cost of annual maintenance and other service charges by local municipalities and water providers.

The cost of single-family homes in NYS has risen by more than 41% between 2019 and 2023. With mortgage rates increasing by 200% since 2020, the affordability of a new home has declined for most residents of New York State. With the median household income at $82,095 (2023) and the average cost of a new home exceeding $600,000, over 75% of families cannot afford a new home. The passing of any mandate requiring the new construction of 1 and 2-family dwellings to install a fire sprinkler system only contributes to making homeownership for new homes unattainable for the majority of New Yorkers.

Fire sprinkler systems do have system failures due to maintenance and environmental conditions. These systems cannot detect smoke or fire in walls, will not reduce carbon monoxide gas, and require maintenance.

Conclusion
Mandating residential fire sprinkler systems in the construction of new 1 and 2-family homes **will not reduce the number of residential fire fatalities in older existing dwellings**. The **high cost will make new homes more unaffordable and only favor the wealthiest.** If the goal is to save more lives, more effort should be made to make sure all residential dwellings have working smoke and carbon monoxide alarms.