



COLORADO
— ASSOCIATION OF —
HOME BUILDERS

FIRE SPRINKLERS IN SINGLE-FAMILY HOMES

Legal and Policy Considerations
for Housing and Fire Safety

FIRE SPRINKLERS IN SINGLE-FAMILY HOMES

LEGAL AND POLICY CONSIDERATIONS FOR HOUSING AND FIRE SAFETY

OVERVIEW

As Colorado's 64 counties and 273 municipalities consider adopting updated building codes, some local fire officials are again advocating for mandatory fire sprinklers in new single-family and "middle housing" construction. As policymakers evaluate these proposals, it is critical that the discussion be grounded in three key areas: the legal framework surrounding unconstitutional conditions, empirical data on residential fire fatalities, and modern building science reflected in current model codes.

The Colorado Association of Home Builders (CAHB) and the state's homebuilding community remain firmly committed to public safety. However, CAHB opposes fire sprinkler mandates **because the data consistently show that fire fatalities overwhelmingly occur in older homes built under outdated codes—not in newly constructed housing.** Today's building standards, combined with hardwired, interconnected smoke alarms, have significantly improved safety outcomes. While sprinkler mandates may be well-intentioned, they impose substantial costs on homebuyers while offering minimal, if any, reduction in fire fatalities in modern homes.

At the same time, housing attainability across the Front Range continues to erode. Rising interest rates and persistent inflation have pushed homeownership further out of reach. Mortgage rates have climbed from approximately 3.1% just a few years ago to over 6.8% today—one of the most dramatic increases in decades.

According to the National Association of Home Builders (NAHB), every \$1,000 increase in the price of a home prices an additional 1,699 Colorado households out of the market. Even modest cost increases can significantly impact access to homeownership. With a fire sprinkler system adding \$15,000 on average to the cost of a new home, this requirement could potentially price out more than 25,000 Colorado homebuyers out of the American Dream.

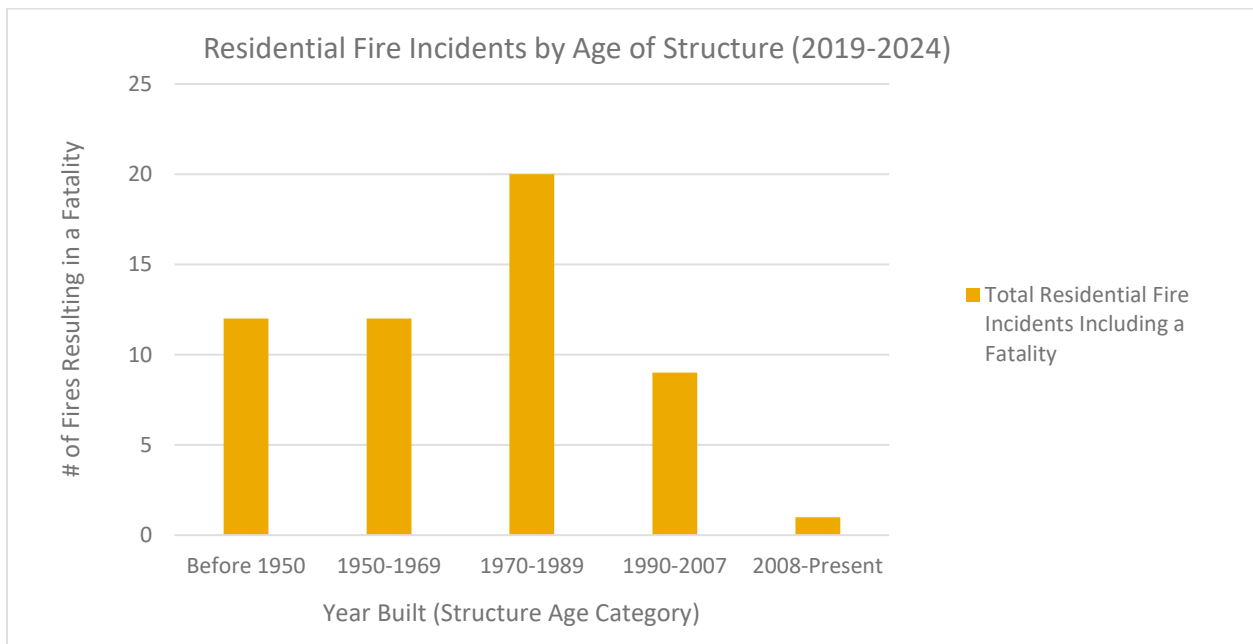
When costly requirements like fire sprinkler systems are added, more families are priced out of new homes and remain in older housing stock that presents greater fire risk. These homes are more likely to contain outdated electrical systems, aging appliances, or lack critical safety features such as modern smoke alarms and code-compliant egress. As a result, policies intended to improve safety may inadvertently keep families in less safe living conditions.

THE REAL RISK OF FIRE FATALITIES: OLDER HOMES BUILT UNDER OUTDATED CODES

CAHB analyzed residential fire data in Colorado over a five-year period (2019–2024), representing the most recent data available. During this time, there were 54 fatal accidental residential fires. **The average construction year of these homes was 1964. Only seven of these fatalities occurred in homes built after 2000, and just one occurred in a home built after 2008. In total, 87% of these incidents took place in homes constructed before 2000.**

This data makes clear that the overwhelming majority of residential fire fatalities occur in older homes—structures built decades ago, often before the adoption of modern safety measures such as hardwired smoke alarms, interconnected detection systems, and fire-resistant building materials.

This pattern is consistent nationwide: older homes built under outdated codes—and often containing aging electrical and heating systems—account for the vast majority of fatal residential fires.



CAHB analysis and interpretation of National Fire Incident Reporting System (NFIRS) data for Colorado residential fires, 2019–2025.

This pattern is consistent nationwide: older homes built under outdated codes, often with outdated electrical and heating systems, account for most fatal residential fires.

NO NEXUS BETWEEN NEW RESIDENTIAL CONSTRUCTION AND FIRE FATALITIES TO JUSTIFY FIRE SPRINKLER MANDATES

Under federal constitutional takings law, the United States Supreme Court recognized in *Nollan v. California Coastal Commission* that there must be a “nexus” between a condition imposed on new development and the issue or problem caused by the new development that the permit condition is intended to address. The data cited above demonstrates that there is no clear nexus between fire fatalities and the requirement to install fire sprinklers in new single-family homes and middle housing. Fire fatalities are almost nonexistent in newly constructed homes.

While fire sprinkler advocates argue that mandating fire sprinklers in new residential construction is essential to avoiding fire fatalities, Maryland’s experience tells a different story. Maryland adopted a statewide residential sprinkler mandate in 2012. Yet, despite this mandate, fire fatalities did not decline. Rather, fire fatalities in Maryland increased 35% since the mandate took effect. In Maryland there were 54 fire fatalities in 2012, but the number of fatalities increased to 73 in 2024.¹

This empirical data underscores what building professionals already know: mandating fire sprinklers in new homes is not the determining factor in reducing structure fire fatalities. Rather, working to ensure that older homes have working smoke alarms is significantly more likely to reduce the number of fire fatalities.

MODERN HOMES ARE BUILT SAFER

Homes today are designed and constructed with an array of fire safety improvements that make them significantly safer than older homes. The risk of fire fatalities is significantly lower in newly constructed homes because they include the following features:

- Hard-wired, interconnected smoke alarms in every bedroom and hallway provide a faster and more comprehensive alert system.
- Fire-resistant materials, including Type X gypsum board, provide fire blocking and sealed penetrations to prevent the spread of fire.
- Improved electrical systems with arc-fault protection and grounded circuits reduce the risk of electrical fires.
- Safer heating and cooking technologies, including ductless heat pumps and induction ranges, eliminate combustion and open flames.
- Better egress and larger windows ensure occupants can escape more easily in the event of a fire.
- Detached or air-sealed garages that are fire-blocked protect occupants from fires originating in the garage.

¹ Maryland State Fire Marshal Annual Fire Death Report, 2024.

SMOKE ALARMS SAVE LIVES

Fire safety can be effectively achieved—and fire fatalities avoided—without imposing costly sprinkler requirements on new construction. Because most fire-related fatalities occur in older homes without working smoke alarms, mandating sprinklers in new construction will have little impact on reducing overall number of fire-related deaths. Requiring and maintaining smoke alarms, alongside public education of their importance, remains the most practical and proven way to reduce home fire fatalities.

According to the NFPA, working smoke alarms reduce the risk of dying in a home fire by about 55%, and modern installations are much more reliable.

National Fire Protection Association (NFPA) data shows the survivability rate of a home structure fire is 99.59% when only hardwired smoke alarms are present. Adding sprinklers increases survivability by less than 0.3%. Clearly the cost of mandating sprinklers far outweighs the negligible benefit that could be achieved.

MAKING AN INFORMED CHOICE ON FIRE SAFETY

The decision to install fire sprinklers should be up to individual homeowners, not mandated by local jurisdictions. Given the cost to install and maintain fire sprinkler systems, and the effectiveness of hardwired smoke alarms, and modern building materials and construction techniques in newly constructed homes, homeowners themselves should weigh the data and make their own informed decision.

Cost of Sprinklers Unpredictable

While the key argument against mandates is that **new homes are already safe**, affordability remains a significant policy concern. Builders in Colorado report installed sprinkler system costs ranging from \$12,000 to \$17,000 per home, or roughly \$4.50 per square foot, excluding water lines, water meter upgrades and permitting fees.

Homebuilders and buyers must also consider additional expenses such as increased costs for architectural drawings—estimated at an extra \$1 per square foot, totaling more than \$2,500 per home—potential delays in the permitting process, and ongoing costs for annual sprinkler system testing, which homeowners are responsible for conducting.

Maintenance Issues Present Challenge

To function properly, residential sprinkler systems require ongoing monthly and annual maintenance by the homeowner. Maintaining a residential fire sprinkler system is not the same as maintaining a smoke alarm system. The fire sprinkler valves must be checked periodically to verify the system is activated. Sprinkler heads must be checked to make sure they are clear of obstacles. Homeowners must be careful not to block or paint over them.

Mandating sprinklers on homeowners adds ongoing maintenance costs, creating a financial burden that goes beyond the initial installation costs of these systems. We do not believe it is realistic to impose these maintenance requirements on homebuyers. Rather, homebuyers

should have the choice as to whether to install sprinklers and assume the necessary maintenance.

According to NFPA's 2021 "U.S. Experience with Sprinklers" fire departments in the U.S. responded to an estimated average of 4,700 non-fire activations of home fire sprinklers per year caused by a system failure or malfunction and 5,400 unintentional sprinkler activations per year.

Not Designed to Protect Against Wildfires

The HBA acknowledges that some Front Range municipalities have considered residential fire sprinkler requirements in response to the Marshall Fire. However, it is important to note that these systems are not designed to protect homes from wildfires. The State of California has been mandating sprinklers in single family homes since 2011, and it is very likely that the devastation caused by the Palisades fire in Los Angeles in 2025 included many homes with internal fire suppression systems.

While wildfire mitigation efforts are crucial, mandating expensive sprinkler systems will not address the primary threats posed by wildfires and will instead place an additional financial burden on homebuyers. However, consumers wishing to purchase a sprinkler system are not precluded from doing so, and those who would like to purchase one for their home can always make this request before their home is built.

Insurance Rebates do not Balance Costs

Consultation with the Rocky Mountain Insurance Association and the Insurance Information Institute indicates that insurance premium reductions for residential sprinkler systems are minimal or nonexistent.

BETTER POLICY ALTERNATIVES

CAHB supports measures that are more effective at enhancing safety and minimizing the risk of fire fatalities without compromising affordability:

- **Education and enforcement of smoke alarm requirements** in existing housing stock.
- **Public programs** to distribute and install alarms in low-income or older households.
- **"Mandatory offer" models** allowing consumer choice.
- **Continued modernization of building codes** that incorporate proven passive safety features.

These approaches address the *real* fire safety problem—older, noncompliant homes—while supporting housing affordability and consumer choice.

Importantly, these design and material improvements not only improve fire safety, but also contribute to long-term durability, environmental performance, and indoor air quality. New homes built to these evolving standards are both safer and more sustainable, providing substantial fire protection without the need for costly sprinkler mandates.

CONCLUSION

Fire safety in Colorado has improved dramatically because of better codes, construction materials, and smoke alarm technology—not because of sprinklers. The data—from local fire marshals to national NFPA and FEMA studies—tell a consistent story:

- ✓ Fires happen in older homes, not new ones.
- ✓ Smoke alarms save lives.
- ✓ Sprinkler mandates add cost, not safety.

CAHB urges policymakers to focus fire prevention efforts where they will make the greatest impact—maintaining smoke alarms and upgrading safety features in aging homes, not mandating unnecessary sprinkler systems in modern, code-compliant homes.

TOOLS & RESOURCES

REFERENCE MATERIALS

Home Building and Fire Safety: Fire Protection Engineering article authored by NAHB	Link to resource
Smoke Alarms Work: NAHB	Link to resource
Maryland State Fire Marshal Annual Fire Death Report, 2024	Link to resource