



USING CODES AND STANDARDS TO REDUCE RISK IN WILDFIRE-PRONE AREAS.

With wildfires an increasing concern, communities must take steps now to protect residents and property. Codes and standards developed by nationally recognized standards development organizations are an important aid to guiding comprehensive risk reduction. These standards represent the consensus of wildfire experts on the most effective and efficient means for reducing risk to people and property. As communities consider how to mitigate wildfire dangers to existing and future development, as well as allocate resources for safe and effective emergency response, these standards should serve as the basis for their actions.

The National Fire Protection Association® (NFPA®) has several standards to guide wildfire risk reduction in communities, many of which have recently been consolidated into a single publication: NFPA 1140, *Standard for Wildland Fire Protection* (2022). This document addresses risk reduction for existing and new development, as well as the operational needs of wildland firefighting, covering all the topics previously covered in the following standards:

- ▶ NFPA 1051, *Standard for Wildland Firefighting Personnel Professional Qualifications*
- ▶ NFPA 1141, *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas*
- ▶ NFPA 1143, *Standard for Wildland Fire Management*
- ▶ NFPA 1144, *Standard for Reducing Structure Ignition Hazards from Wildland Fire*

Where should standards-backed mitigation measures apply?

From clearing defensible space to choosing non-combustible materials for construction, there are a number of potential steps to reduce risk from wildfire embers

and flame spread. However, the first thing communities must consider is where these measures should apply. This determination is made according to physical factors that contribute to wildfire hazards, like vegetation, topography, and the presence or absence of fuel breaks, as well as the risk those hazards pose to homes and other community assets. The US Forest Service website [Wildfire Risk to Communities](#) provides a helpful starting point to understanding the level of relative risk in the community. However, communities often need more detailed assessments to direct their activities.

How can communities address existing homes, businesses, and other property at risk?

According to the US Forest Service, there are at least 43 million homes in the wildland/urban interface. The need to reduce risk to those homes and neighborhoods is substantial. Chapters 24 through 26 of NFPA 1140 provide a method and means for doing that. Under the standard, all development in the wildland/urban interface is subject to a risk assessment that identifies ignition pathways and vulnerabilities for the property and structures, including mobile homes and manufactured housing. The assessment, guided by the standard, serves as the basis for the property's wildfire hazard mitigation plan, which points owners to the necessary retrofits and property modifications needed to reduce ignition risk. Both NFPA 1140 and Chapter 17 of NFPA 1, *Fire Code*, contain language requiring property owners to carry out the actions detailed in the wildfire hazard mitigation plan on a timeframe set by the authority having jurisdiction. Both documents also require all properties to clear and maintain defensible space—removing dense vegetation, debris, and other combustible materials from around a structure.



How can communities reduce wildfire risks for new development in the wildland/urban interface?

NFPA 1140 contains provisions for ignition-resistant construction in Chapter 25. These requirements pertain to new construction or substantial renovations and cover the design, location, materials, and features for buildings in the wildland/urban interface. The standard directs users to materials and methods that are less combustible and requires lot configurations that reduce risk to neighboring structures. Under NFPA 1140, the requirements for a wildfire hazard mitigation plan and the maintenance of defensible space are applicable to new development.

With more structures retrofitted to resist ignition, fire departments are less likely to be overwhelmed by structure fires during a wildfire event. However, communities must still also consider the infrastructure needs of firefighters and other emergency response vehicles and personnel in the permitting of new development. NFPA 1142, *Standard on Water Supplies for Suburban and Rural Firefighting* (2022), offers an alternative method for calculating minimum water supply needs for firefighting where the available water supply is not sufficient to meet the requirements of the adopted fire code. This method takes into account the structure's construction type, occupancy type, dimensions, and exposure to adjacent structures.

In addition to water, firefighters need access. Chapters 10 through 18 of NFPA 1140 contain requirements for developments to ensure firefighters can reach homes in the wildland/urban interface to perform firefighting operations. These requirements include multiple access routes capable of accommodating emergency vehicles and evacuees, as well as ensuring structures are surrounded by enough space to mount firefighting operations. NFPA 1140 also contains provisions to help fire officials plan for responding to emergencies, plan for evacuations, and assess the capacity of the community's fire protection services.

How can communities in the wildland/urban interface determine their fire protection needs?

Well before a wildfire event, fire officials and other community leaders should evaluate their emergency response capabilities and address any gaps they discover. Chapters 19 through 23 of NFPA 1140 provide guidance for this assessment. Among other topics, these provisions cover incident planning, incident command, equipment and training needs, and development of a community-wide hazard mitigation plan through stakeholder input.

Who should enforce these requirements?

Wildfire is a community-wide issue that is unlikely to be solved by any single person, office, or agency. When using NFPA 1140, communities can assign responsibility for enforcing the requirements to several different personnel, as outlined by the following examples:

- ▶ The **zoning board and fire officials** could be responsible to verify that fire protection infrastructure meets Chapters 10 through 18.
- ▶ A **wildland/urban interface protection specialist** that meets the professional qualifications of Chapter 8 could be responsible to plan and oversee wildland fire management in accordance with Chapters 19 through 23.
- ▶ The **building or fire official** could be responsible to review plans and inspect construction for compliance with Chapters 24 through 26.
- ▶ A **wildland/urban interface coordinator** that meets the professional qualifications found in Chapter 9 could be responsible to bring all of these roles together into a cohesive strategy, along with implementing public education programs.

However, this is only one way to organize a wildland fire protection program. Each jurisdiction should follow NFPA 1140 in a way that fits the needs, capabilities, and resources of the community. Most importantly, local decision makers should work together and act now to understand the danger wildfire poses to their community. The standards discussed here can help lower that risk.

Learn more at nfpa.org/wildfire

