

Fire Protection for the Wildland-Urban Interface

The International Wildland-Urban Interface Code® Can Help Reduce the Risk of Fire Problems



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Steps for Adopting a Mandatory or Voluntary Wildland-Urban Interface Code

The IWUIC® can be used to create a fire protection plan for an entire community or subdivision. The vegetation management plan can include such items as greenbelts, tree thinning and maintenance of common areas to develop safe communities. The following steps are used when local jurisdictions, geographic areas or states are developing a WUI code requirement for new home construction:

- 1. Establish the area to be considered:** a jurisdiction, a city, a county, multi-counties, a geographic area or a state.
- 2.** It is important to **use local land use planning guides**, including GIS mapping that identifies specific WUI areas. It also is important to have a **Community Wildfire Protection Plan (CWPP)** that helps analyze the wildland fire problem. In addition, targeting jurisdictions that already have adopted the *International Residential Code*® (IRC) and the *International Fire Code*® (IFC) would be beneficial, as this helps in tying all aspects of building, fire and WUI codes into a systematic, integrated approach.
- 3. Establish the performance level** or similar guide for a WUI code initiative. Most jurisdictions, communities or states pursue programs that achieve certain requirements for new construction and vegetation management, as well as for fire suppression. Most processes take anywhere from six to 24 months from start of the planning process to code adoption, depending on the complexity of the area being considered.
- 4. Identify the types of homes to be affected.** Most WUI codes include new single-family homes and major renovations or additions to existing homes. Separate standards for multi-family housing (low-rise and highrise) and affordable/low-income housing also may be considered.
- 5. Obtain input from affected stakeholders**, including elected officials, homebuilders, contractors and trades, green building organizations, fire departments, wildland fire agencies and residents. Municipal building officials, planning staff and building code enforcement officials also should be consulted.
- 6.** In some instances, **basic training may be needed** prior to developing legislation to establish the need for this code and develop a basic awareness of provisions with stakeholder groups.
- 7. Prepare legislation requiring an advanced code.** Typically, city, county or state staff prepares a draft ordinance or legislation establishing the advanced code requirements, which is then implemented by the planning and building departments as a new code, or amendments to existing codes.
- 8. Adopt and enforce the code, and provide training and technical assistance** to planners, architects, developers and builders in complying with the new code requirements. This may include trade and inspector training programs and certification.
- 9. Track and evaluate progress** toward implementing the code annually, and review and update code requirements periodically, typically every three years.

For more information, visit the International Code Council's [wildfire safety page](#), or the [National Wildland Urban Interface Council](#).



The *International Wildland-Urban Interface Code*® (IWUIC) contains a process to evaluate the level of fire risk at individual properties and specifies ways to limit the spread of fires and, in some cases, prevent them.

One of the most common methods of fire spread is embers landing on a roof. As such, the IWUIC specifies fire-resistive roof coverings. The level of fire resistance is based on the level of fire risk; the higher the risk, the higher the fire-resistive rating. Depending on the level of fire risk, the exterior walls of the building also may need to be of ignition-resistant construction. This limits the ability of a fire approaching a building and igniting the exterior wall covering or components.

As the fire approaches a building, heat and embers will be trapped under eaves and exterior soffits. Therefore, these portions of the building must be protected. The same applies when fire approaches exterior decks, where heat and embers will be trapped beneath and can ignite the combustible portions of the exposed underside of the deck. The IWUIC recommends using fire-resistant materials for the deck, or enclosing the underside of the deck so heat cannot be trapped beneath.

Vulnerable points where fire or embers can enter a building also must be protected, as these areas have been the route of fire entering a building in many

cases. Protecting these openings is critical in keeping fire from extending to the interior of the structure.

In addition, windows can be either dual-pane or tempered glass, items commonly used in dwelling construction already; doors either can be made of non-combustible materials or have a thickness of 1-3/4 inches; and attic vent openings and under-floor vent openings must have 1/4-inch mesh wire covering and a limited size of the opening.

Water supply for firefighting must be made available when new construction occurs.

Methods are not limited and could include a fire hydrant system; storage tank; or a reservoir, lake, canal or stream. The water supply may be used either for fighting a fire within the building or for fighting the wildfire as it threatens buildings in the area.

In the highest level of fire risk, the IWUIC requires that fire sprinklers be installed in the building. The fire sprinkler system limits the potential for a fire in the building to become uncontrolled and spread to the wildlands. Fire sprinklers also are beneficial for “Defend-in-Place” scenarios, where the residents are expected to stay within the safety of their homes rather than evacuate.

The *International Wildland-Urban Interface Code*

also contains criteria for creating a “defensible space” around buildings. This area increases the ability for buildings to survive wildfires by slowing the rate of fire spread and intensity as the fire approaches a building.



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It also creates an area for firefighters to set up their operations around the building. Further, requirements for access roads into the wildland/urban interface area are designed to improve the ability for residents to evacuate, to improve the ability for firefighting equipment and personnel to approach the fire areas and to limit dead-end access roads, which create problems for both safe evacuation and firefighter access. **bsj**

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