

# Resilience 2021: The Case for Resiliency in the Wildland-Urban Interface

August 11, 2021 | Session Overview

## PANEL

**Shamim Rashid-Sumar, PE, FSFPE**, Vice President, Fire Codes and Standards, National Ready Mixed Concrete Association

**Bruce D. Bouch**, Fire Program Specialist, United States Fire Administration

## MODERATOR

**Daniel Kaniewski**, Managing Director, Public Sector, Marsh McLennan Advantage

## RESILIENCE 2021: WILDLAND-URBAN INTERFACE RESILIENCY OVERVIEW

The latest United Nations report on climate change has made one thing clear— something must be done. Rising temperatures and an increase in drought frequency mean wildfires will continue to threaten our communities year-round.

According to the National Interagency Fire Center, there are wildfires across 15 states in the U.S. There have been 107 large blazes that have burned through more than 2.2 million acres. That is about 500,000 more acres than this time in 2020, when a total of 10.1 million acres burned. Nearly 100 large wildfires remain uncontained.

These devastating statistics make it imperative that disaster resiliency be on the forefront of the recovery efforts, says Lakisha A. Woods, CAE, President and CEO of the National Institute of Building Sciences.

On August 11, 2021, NIBS hosted the fifth installment of the Resilience 2021 webinar series, covering wildfire causes and mitigation efforts, structural resiliency in the wildland-urban interface (WUI), building codes and standards for disaster preparedness, and costs associated with resilient design and construction.

We received nearly 500 registrants for this webinar. The

next Resilience 2021 webinar – [The Importance of Seismic Functional Recovery and Community Resilience in the Built Environment](#) – takes place September 8, 2021.

## WILDFIRES ARE A GLOBAL PROBLEM

The cost of wildfires is growing.

Shamim Rashid-Sumar, PE, FSFPE, Vice President, Fire Codes and Standards, National Ready Mixed Concrete Association, pointed to information from Munich RE, a reinsurer, that says “there have been \$23.1 billion in losses to wildfires in the U.S. in the five-year period between 2012-2019.”

2017 was a costly year, with \$17 billion in losses and that number continues to grow because of climate change, which is creating warmer and drier conditions.

But wildfires aren’t a problem restricted to the United States. Rashid-Sumar mentioned other countries – Turkey, Greece, Lebanon, and Australia – all of which have experience with this deadly disaster.

Steps toward resilience in the WUI include:

- Building with more robust materials
- Adopting updated building and WUI codes
- Adopting high-performance building standards

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- Incentivizing wildfire resilient construction

Site references:

- [National Ready Mixed Concrete Association](#)
- [Build With Strength](#)

## WILDLAND URBAN INTERFACE CODES AND STANDARDS

Adopting updated building and WUI codes is the first step in wildfire resilient construction. The 2021 International Wildland-Urban Interface Code (IWUIC) is model code, which supplements a jurisdiction's building code. It addresses requirements for structure density and location, limiting the number of structures permitted in at-risk areas.

IWUIC also covers building materials and construction, namely using fire-resistant materials in the construction of buildings, including noncombustible roof assembly, exterior walls, windows and doors.

It also features provisions for vegetation management, emergency vehicle access, water supply and fire protection.

Similarly, NFPA 1144 is the NFPA Standard for Reducing Ignition Hazards from Wildland Fire. It requires a wildland fire hazard assessment of structural ignition zones and has similar requirements for building design, location, and construction of new structures in the wildland.

Rashid-Sumar shared the case study of a home with a noncombustible exterior finish that was saved from a devastating wildfire in Laguna Beach, California in 2013. That wildfire consumed 17,000 acres of brushland and destroyed 366 homes. The home that was spared survived due to construction and landscape design: stucco cladding, Class A concrete tile roof with the ends sealed in concrete, double-paned glass, and fire-resistant landscaping. She also shared a series of homes built of Insulating Concrete Form (ICF) Construction which survived wildfire devastation in a San Diego suburb.

Site references:

- [2021 International Wildland-Urban Interface Code](#)
- [NFPA Standard for Reducing Structure Ignition Hazards from Wildland Fire, 2018 edition](#)

## CALIFORNIA HAS 11 MILLION PEOPLE LIVING IN THE WUI

Bruce D. Bouch, Fire Program Specialist, United States Fire Administration, said California has the most people living in the WUI, with 11 million. There are more than 70,000 communities at risk from wildfire nationwide. And while more than 7,900 communities at risk are in the West, more than 62,400 of the communities at risk are in the Midwest, East, and South.

Some communities may not be identified as being part of the WUI, but the risk of wildfire events still are present. Bouch defined the WUI as the "zone of transition" between unoccupied land and human development.

The United States Fire Administration is conducting an exploratory analysis of existing WUI data. The USFA is deeply engaged in the FEMA-wide effort to assess the impacts of climate change and adaptation across FEMA components and mission areas.

"We are bringing forward issues related to how climate change impacts affect our state, local, tribal and territorial fire service partners for all hazards, including their health and safety, operational demands and capacity, and expected increase in calls for fire service partners for all hazard events," Bouch said.

USFA actively has been socializing WUI and wildfire issues through this process, especially focusing on the critical role of the fire service to support prevention and community risk reduction of WUI risks in the context of climate change.

## TOOLS AND RESOURCES TO ADDRESS THE CHALLENGES OF THE WUI ENVIRONMENT

Bouch pointed to forward-thinking tools like InciWeb, an interagency all-risk incident information management system. The system was developed with two primary missions: To provide the public a single source of incident related information and provide a standardized reporting tool for the public affairs community.

USFA is heavily engaged in federal interagency, intergovernmental, and private sector partner initiatives on a broad spectrum of WUI topics and issues. In that respect, the USFA is developing America Burning: WUI, a co-funded research project with the U.S. Department of Agriculture's

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Forest Service and the U.S. Department of the Interior's Office of Wildland Fire. The contractual support by the International Association of Fire Chiefs is helping to bring the project to fruition. This report is building on the wildland issues raised in the original America Burning report of 1973.

The study will elevate national awareness on the highest level of the American WUI problem and inform potential priorities for future direction and activities. The timely release of this report will be an excellent resource to address the challenges of the evolving WUI environment. It will be available by year-end.

"We've got to do better in collecting the data," he said. "You have to have all the facts, all the information, and have one solid thought process so we're all on the same page ... so we can make the improvements, we can save lives and positively impact future generations."

Site references:

- [U.S. Fire Administration – Wildland-Urban Interface](#)
- [National Wildfire Coordinating Group - InciWeb](#)

## THERE'S MORE WORK TO BE DONE

When it comes to states that have adopted the IWUIC statewide, it's four: Pennsylvania, Montana, Utah, and Washington, says Daniel Kaniewski, Managing Director, Public Sector, Marsh McLennan Advantage.

"There's more work to be done here," Kaniewski said, adding that 16 other states have adopted the IWUIC on a local level. He also noted that FEMA hazard mitigation grant programs can help communities fund building code adoption and enforcement activities and other risk reduction projects and that these grant programs have recently received additional funding.

When it comes to incentivizing wildfire resilient construction, Rashid-Sumar offered some potential incentives that should be encouraged:

- Building permit rebates
- Property tax reductions
- Accelerated local permitting and inspection procedures for resilient properties
- Zoning benefits (i.e. density or height bonuses)
- More favorable developer agreements for the construction of resilient properties

- Revolving loan programs

Site references:

- [International Code Council – International Wildland-Urban Interface Code \(IWUIC\) Code Adoption map](#)
- [Insurance Institute for Business & Home Safety – Economics of Community Disaster Resilience](#)
- [U.S. Resiliency Council](#)
- [Federal Emergency Management Agency – Building Resilient Infrastructure and Communities \(BRIC\)](#)

## WHAT'S COMING UP

The next Resilience 2021 webinar is entitled [The Importance of Seismic Functional Recovery and Community Resilience in the Built Environment](#).

Nearly half of the U.S. population (150 million people) reside in portions of 42 states that are at risk of experiencing a damaging earthquake within the next 50 years. That's according to the NIST-FEMA Special Publication Recommended Options for Improving the Built Environment for Post-Earthquake Reoccupancy and Functional Recovery Time.

In regions of high seismic risk, where an earthquake hasn't occurred for some time, scenario studies predict deaths in the thousands, injuries in the tens of thousands, and hundreds of billions of dollars in direct economic losses, along with long-term, destabilizing impacts to community function.

Our nation's seismic risk is largely mitigated through earthquake-resistant buildings, which are regulated by model building codes. Federal policy now calls for improving functional recovery of the built environment to increase earthquake resilience at the community level. Functional recovery design represents a significant shift from the current safety-based practice for the building design and construction industry.

Join us September 8, 2021, as we discuss:

- Seismic functional recovery
- Community resilience
- Lifeline infrastructure systems
- Importance of "building beyond code"
- Seismic design and construction of buildings and other structures