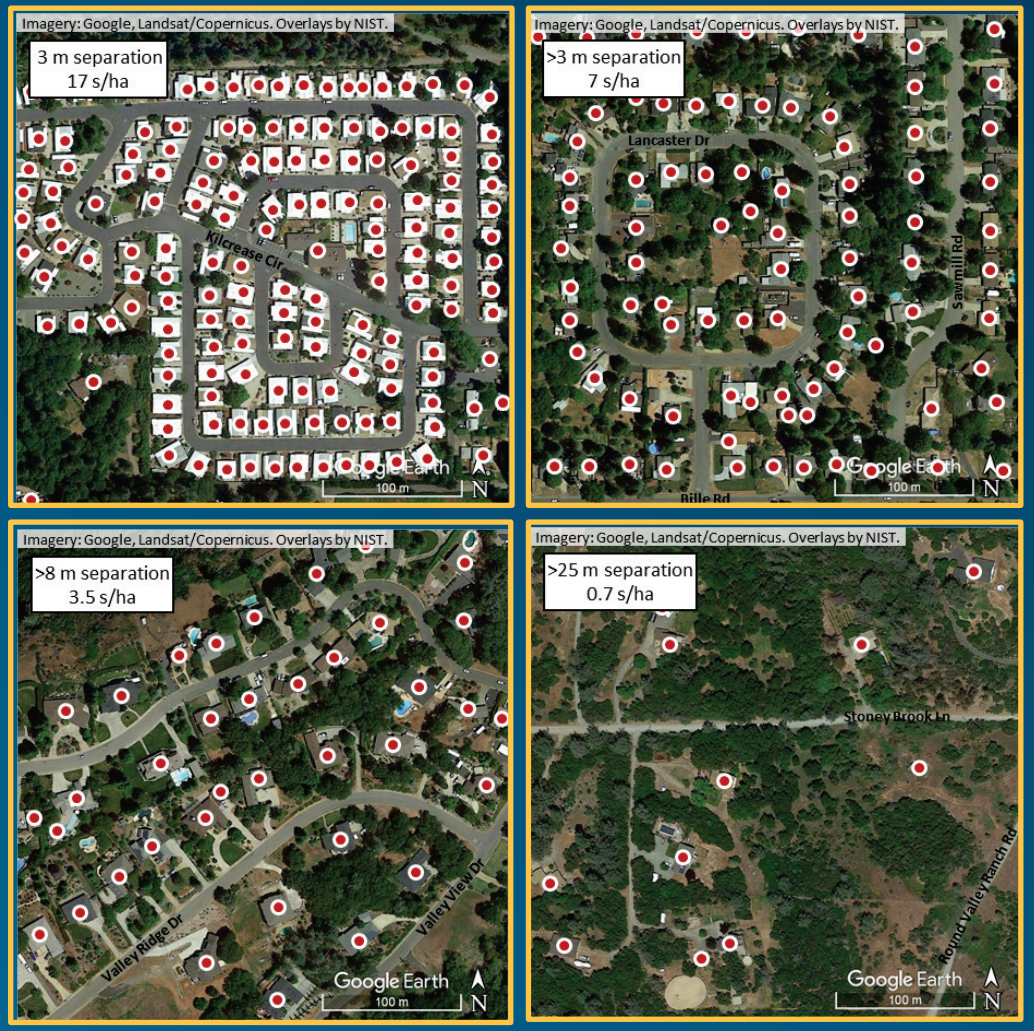
# HMM WUI Structure/Parcel/Community Design Considerations



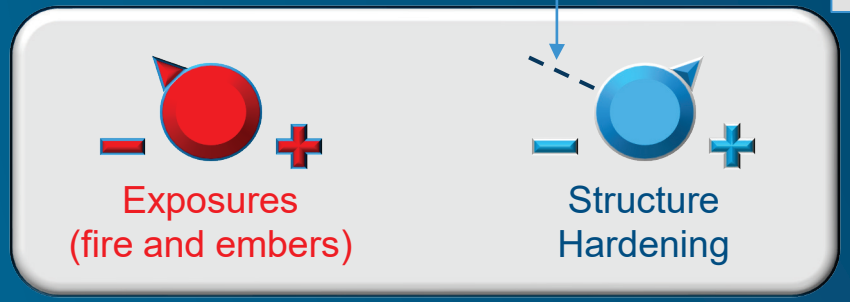

**NIST Camp Fire Report #3, Figure 2.**



# Exposures and Structure Hardening

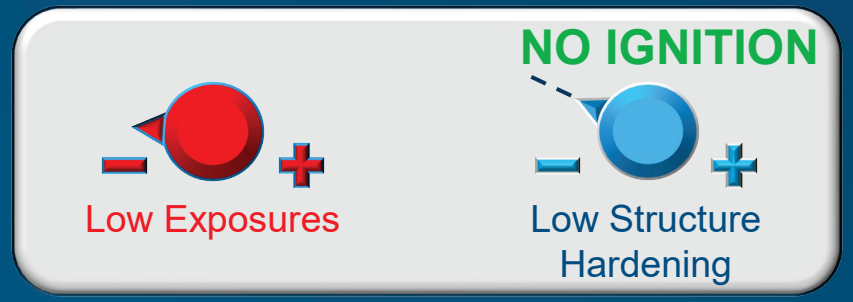


Baseline - ember hardening




➢ UNDERHARDENED


✓ EFFECTIVE HARDENING



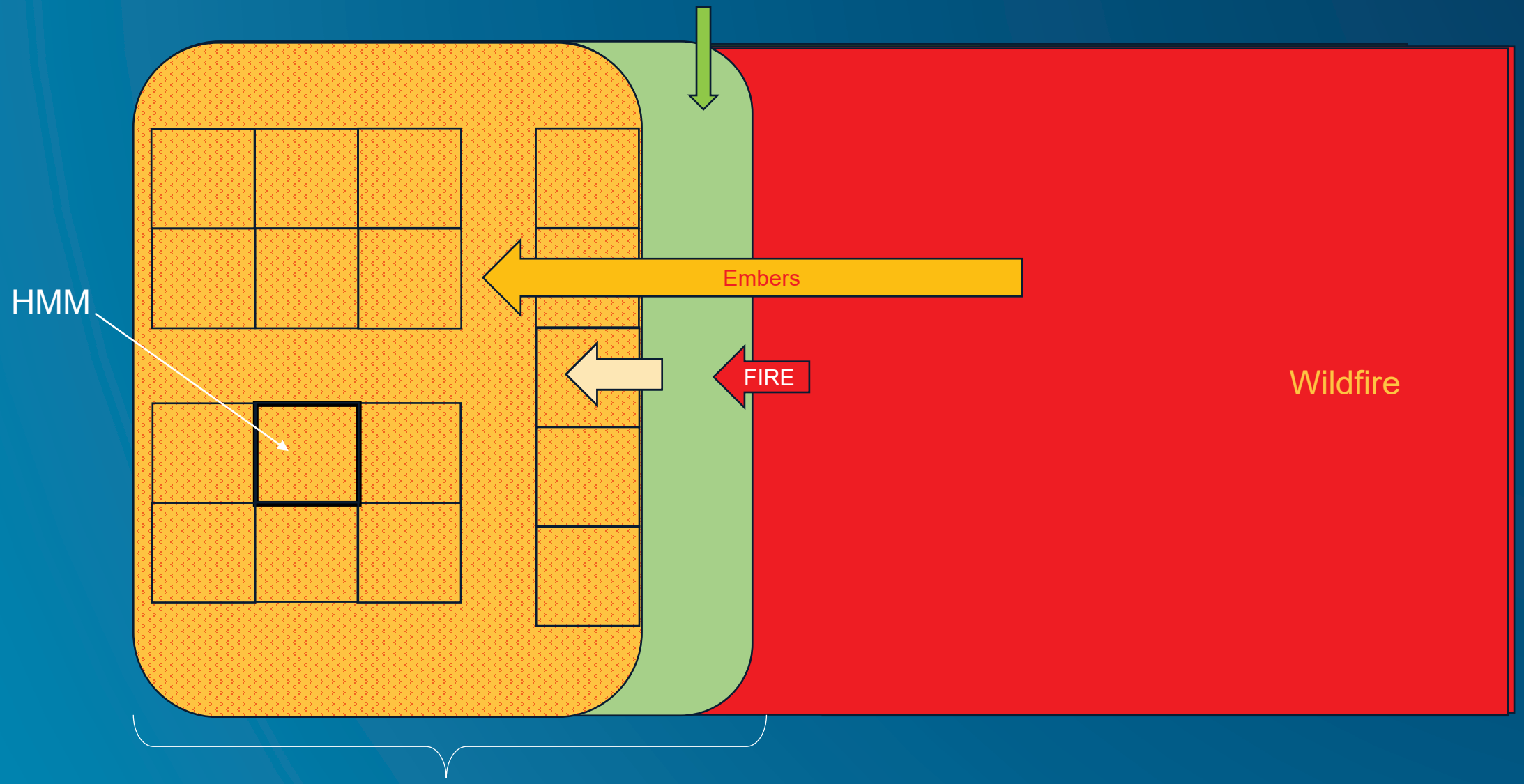

BCA TOOLS – utilize available exposure reduction options


✓ EFFECTIVE HARDENING


➢ OVERHARDENED

# WUI Community Exposures from Wildfire

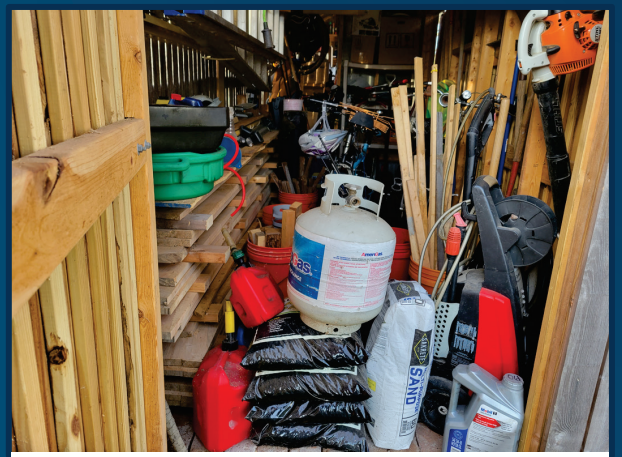





Community WUI Fire Hazard Evaluation Framework (NIST TN 2135, Appendix C)

# SSE Phase 1 Outputs

- Model validation data
- Effects of construction material on exposures
- Effects of shed size on exposures
- Effects of wind on exposure
- Target Response to different exposures
- SSD for different shed sizes
  - on flat ground
  - with some geometries



Example of Shed with Fuels

# Results Implementation



- Sheds and other auxiliary structures are part of the HMM
- Difference between “defensible” and “stand alone” in:
  - addressing new construction and
  - In mitigating existing community/parcel hazards
- Utilize Phase 1 findings to address both new and existing communities

# Implementation Paths forward:



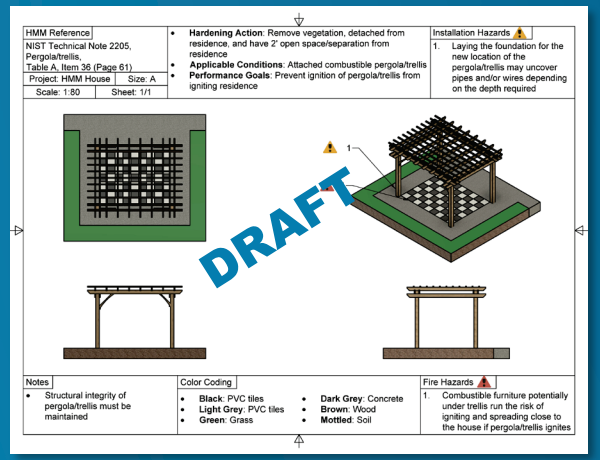
- Compare findings to existing national codes and adjust if necessary (consensus process)
- Address unregulated hazards – identify hazard mitigation pathways (national, state, and/or local level policies, rules and best practices)
- Address parcel to parcel shed exposures – issue not limited to Sheds.
- Assess performance of test methods and revise adjust if necessary (consensus process)

# HMM Tech Transfer Tool (HMM TTT)

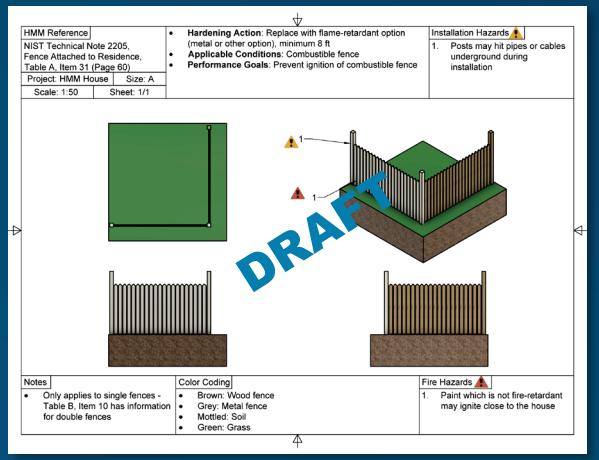
NIST
National Institute of Standards and Technology
U.S. Department of Commerce

HMM – Fire Science

Social Science




HMM TTT



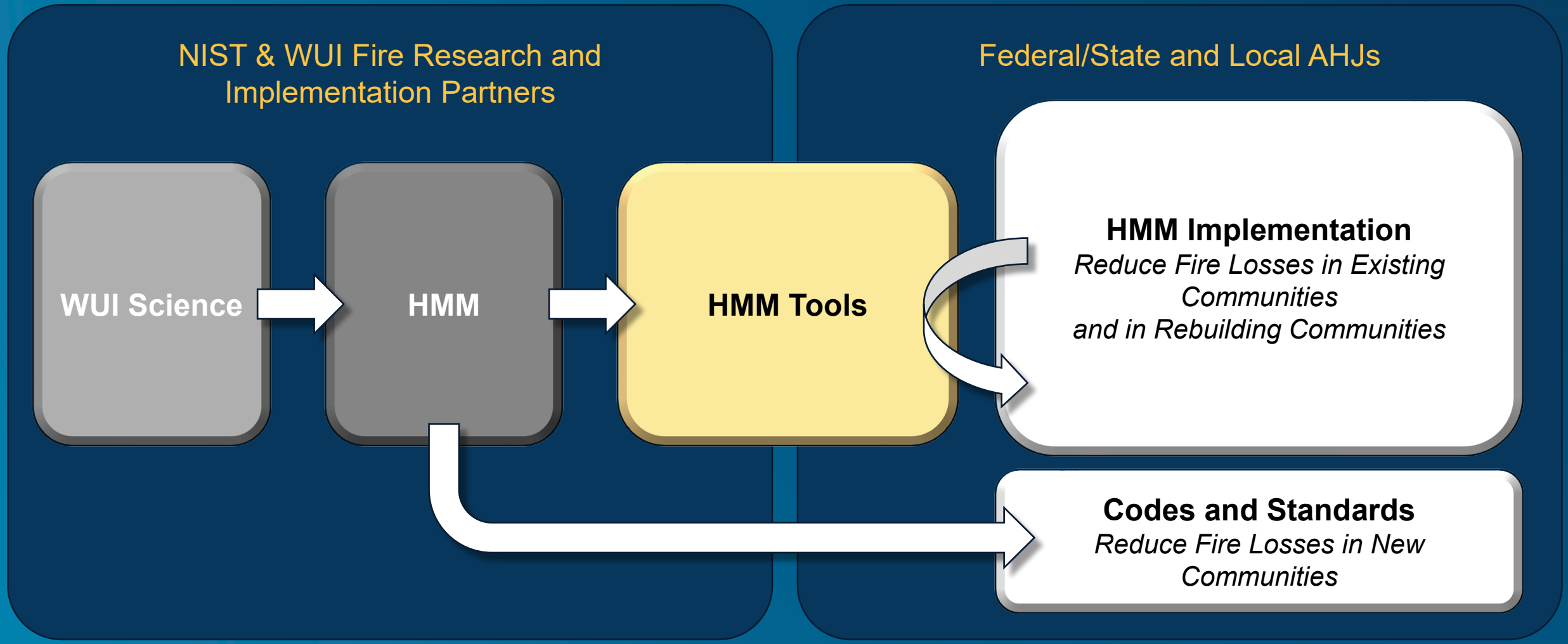

MODULE 1
for AHJs

MODULE 2
for Homeowners

MODULE 3
for Contractors

# Implementing HMM





# NIST WUI Research Overview

July2022

NIST National Institute of Standards and Technology U.S. Department of Commerce

2022 | NIST WUI DAYS 2022 | 2023 | 2024 | NIST WUI DAYS 2024

## Case Studies

FALL 2022

CAMP #4 NETTRA – Notification/ Evacuation/ Traffic and Temporary Refuge Areas

CAMP #5 Emergency Response/ Defensive Actions and Damaged Structures

## Hazard Mitigation Methodology (HMM)

NIST TN 2205

SPRING 2023

Graphical User Tool

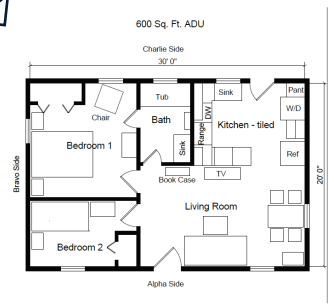
## Laboratory Research

### SSE

SPRING & FALL 2022

Sheds


RVs, ADUs and Single Family


Fences, Wood Piles

Emberometer

Sealants and Gaskets

**Fed:** IWG (including FEMA, USFA, HUD)
**States:** CA, OR, WY, CO, SC
**Codes and Standards/ Best Practices**
CA Chapter 7A & Chapter 49
ICC IWUI
NFPA 1140 & Firewise

HMM

CAMP

SSE

engineering laboratory

# Thank You

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