

# The Latest Science on WUI Fires and the Built Environment

EXPLORING ATMOSPHERIC EMISSIONS FROM WUI FIRES

# What is the WUI?

## Wildland Urban Interface (WUI)

*The line, area or zone where structures and other human development **meet or intermix** with undeveloped wildland or vegetation fuel.*





# Wildland Fuels vs. Urban (WUI) Fuels



Fuel in **wildland fires** includes:

- Dry or dead vegetation
- Living vegetation



Fuel in **WUI fires** includes:

- Vegetative biomass
- Physical structures
- The contents within a structure
- Vehicles

BEFORE: TUBBS



AFTER: TUBBS

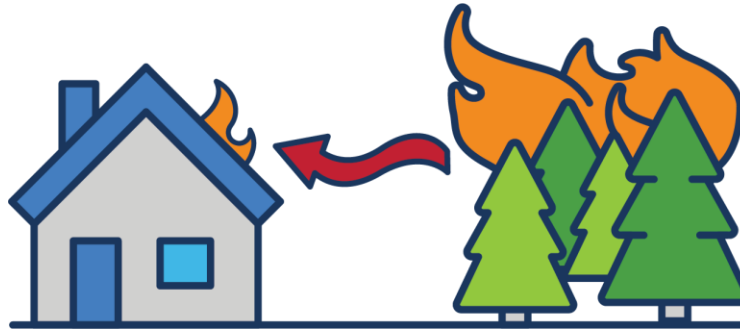


# Wildfires Spread in Three Ways



## Direct Flame Contact:

When the flames come into contact with additional fuel



## Heat Transfer:

When there is enough heat energy that a material can burn



## Embers:

When small pieces of burning fuel loft into the air and ignite additional fuel

### AREAS OF FOCUS:

- Structures as targets from WUI fires
- Structures as sources or spreaders of WUI fires



# Wildland Emissions vs. Urban (WUI) Emissions

## Wildland fire emissions:

- Particulate matter (PM)
- Volatile organic compounds (VOCs)
- Semi-volatile organic compounds (SVOCs)

## Urban (WUI) fire emissions:

- Metals
- Halogenated organics
- Chlorine
- Cyanates



# Emissions in the WUI

FUEL IN WUI WILDFIRES PRODUCE DIFFERENT TYPES OF POLLUTANTS

Atmospheric Emissions



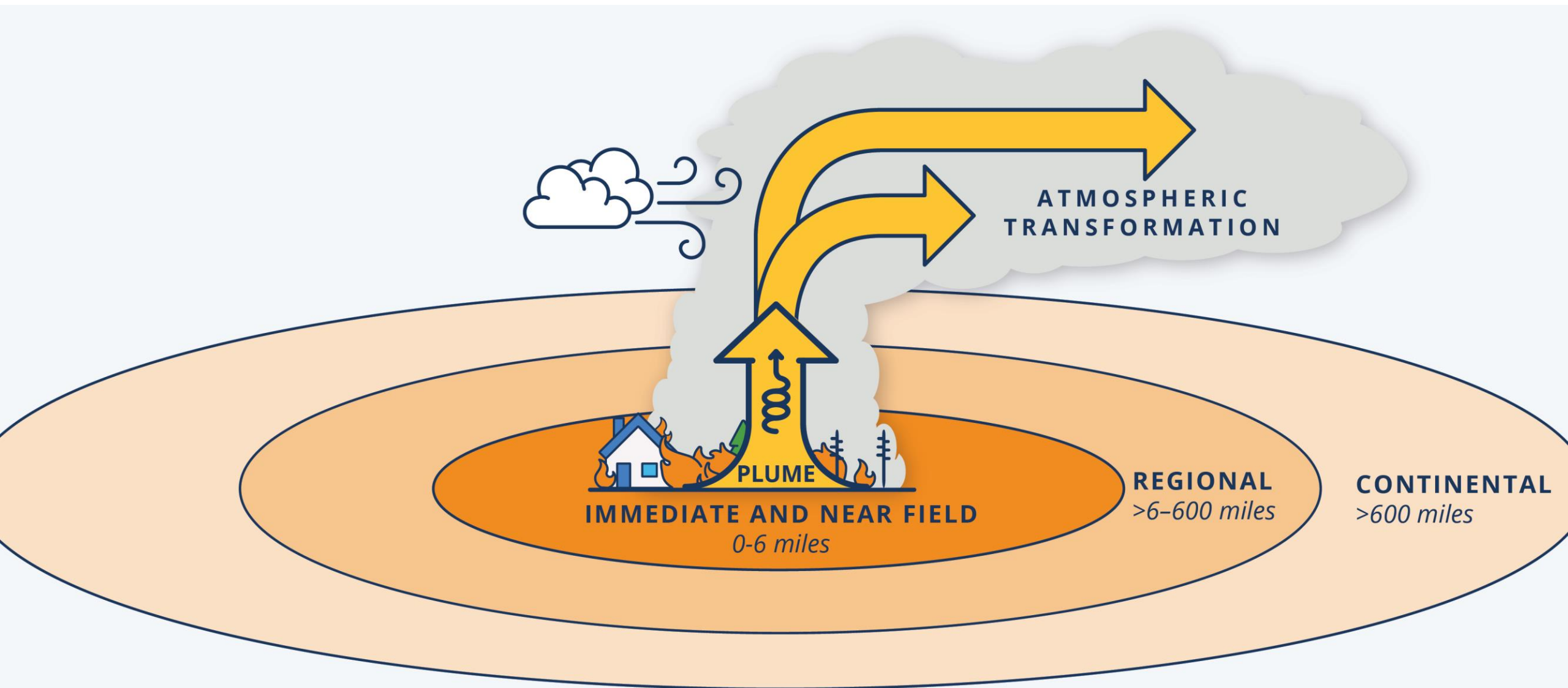
Residues



Effluents (liquid waste)



# The Plume





# Exposure Routes



Inhalation



Ingestion

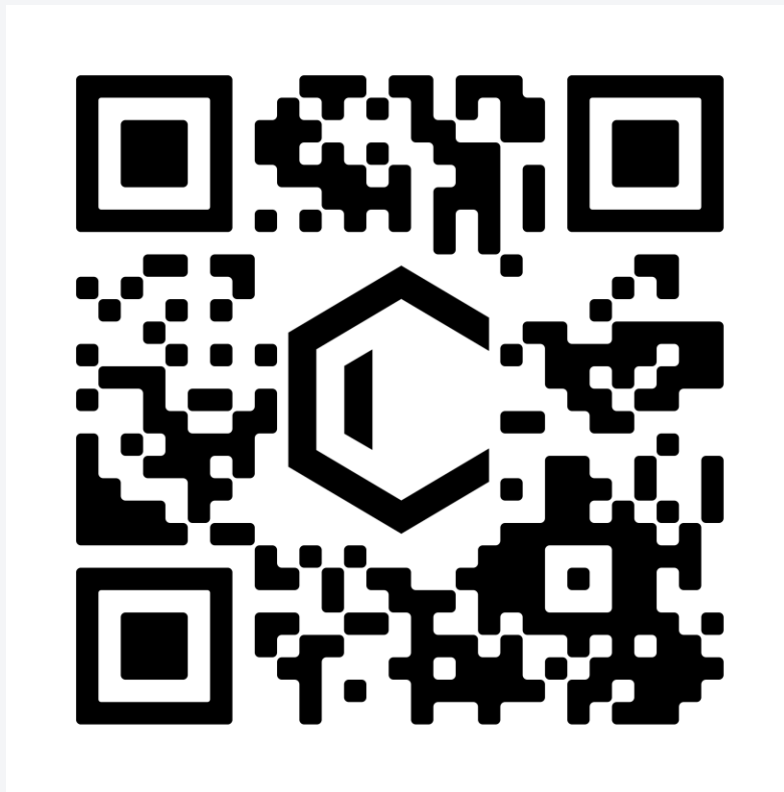


Dermal Transfer



When people returned to homes that survived the Marshall fire, some of them found what researchers describe as **“another disaster.”**

# CONTACT INFORMATION



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