



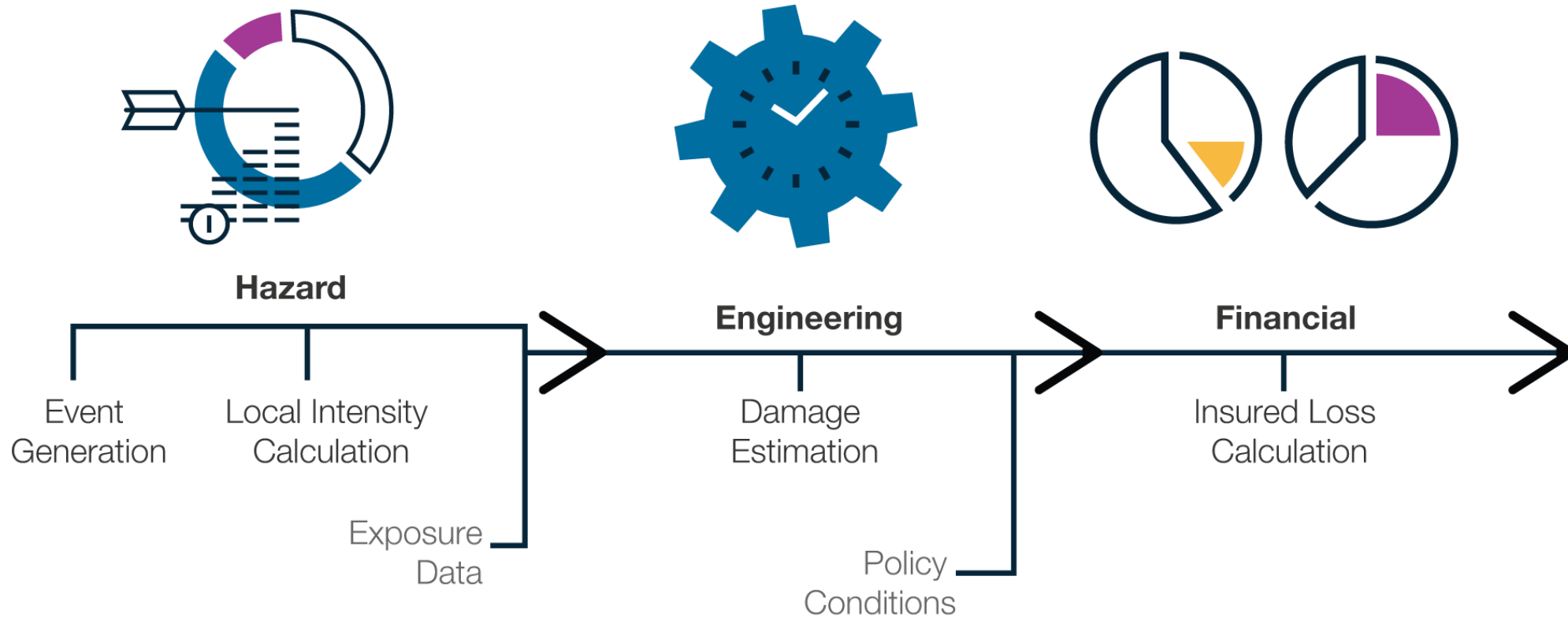
# Catastrophe Modeling Primer:

# Verisk Wildfire Model for the United States

Presentation to California State Assembly  
Insurance and Emergency Management  
Committees - Joint Hearing  
June 14, 2023

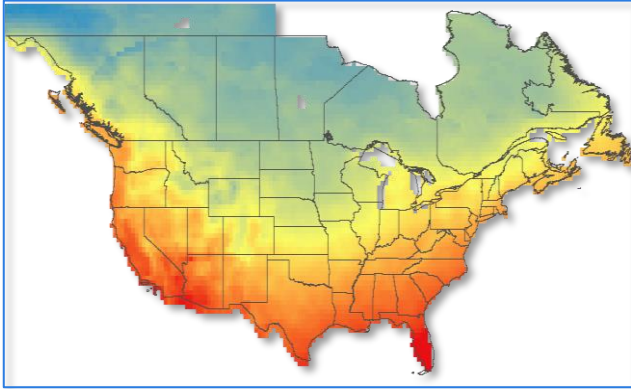
# Models Simulate Low Frequency, High Impact Events

- Frequent events have **abundant historical loss data** to accurately estimate losses
- Infrequent events do not, and require the use of **probabilistic models** to estimate losses
- Goal: Create many **realistic simulations** of loss-producing events

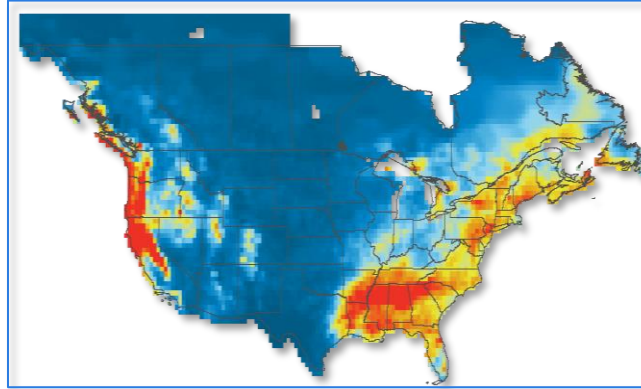


# Event “Catalog” Considers Variability in Weather and Fuels

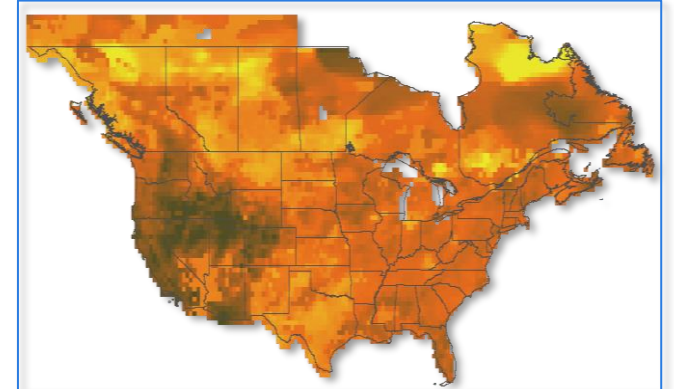
## Temperature



## Precipitation



## Drought



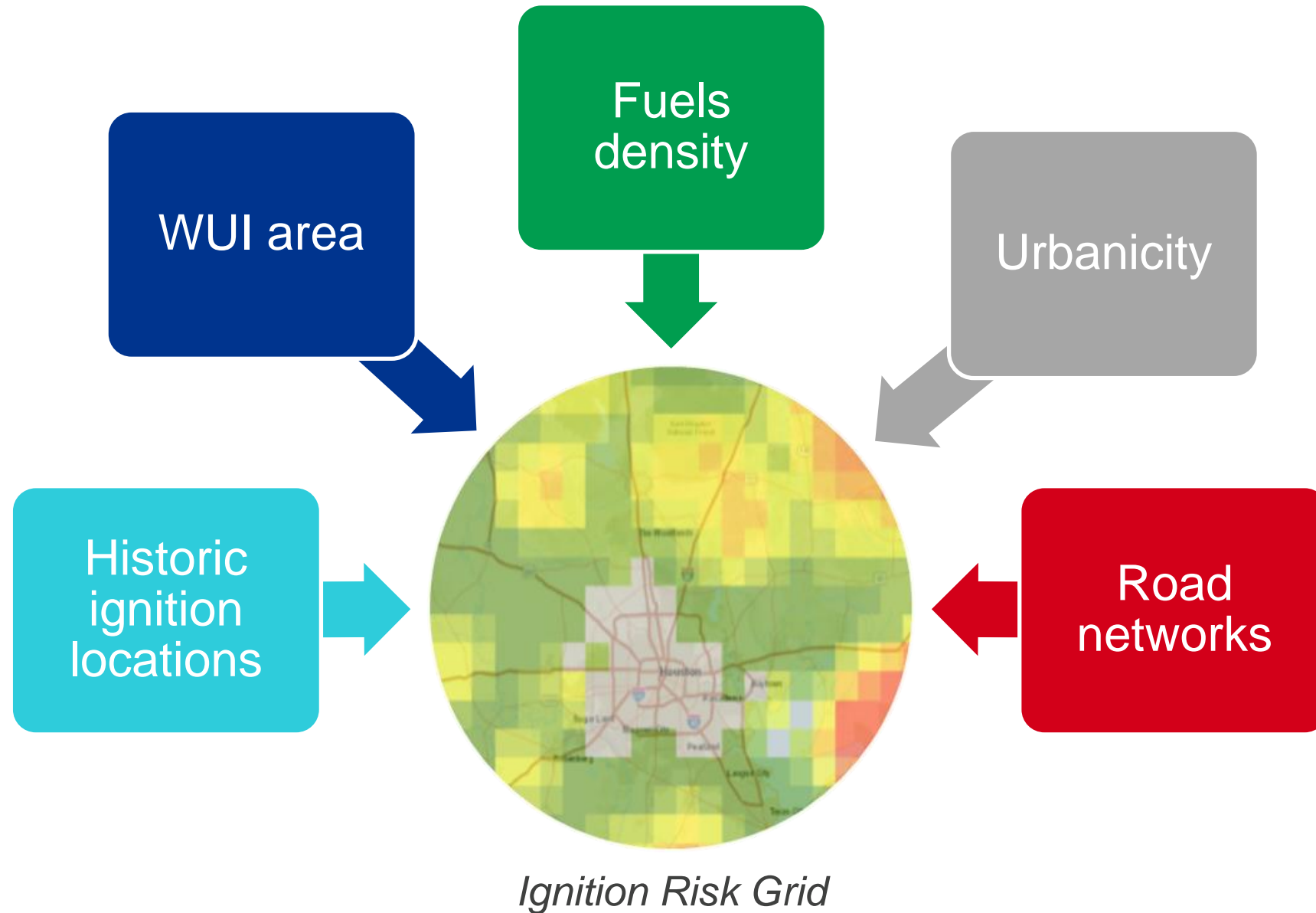
## Grass/Shrub/Mixed



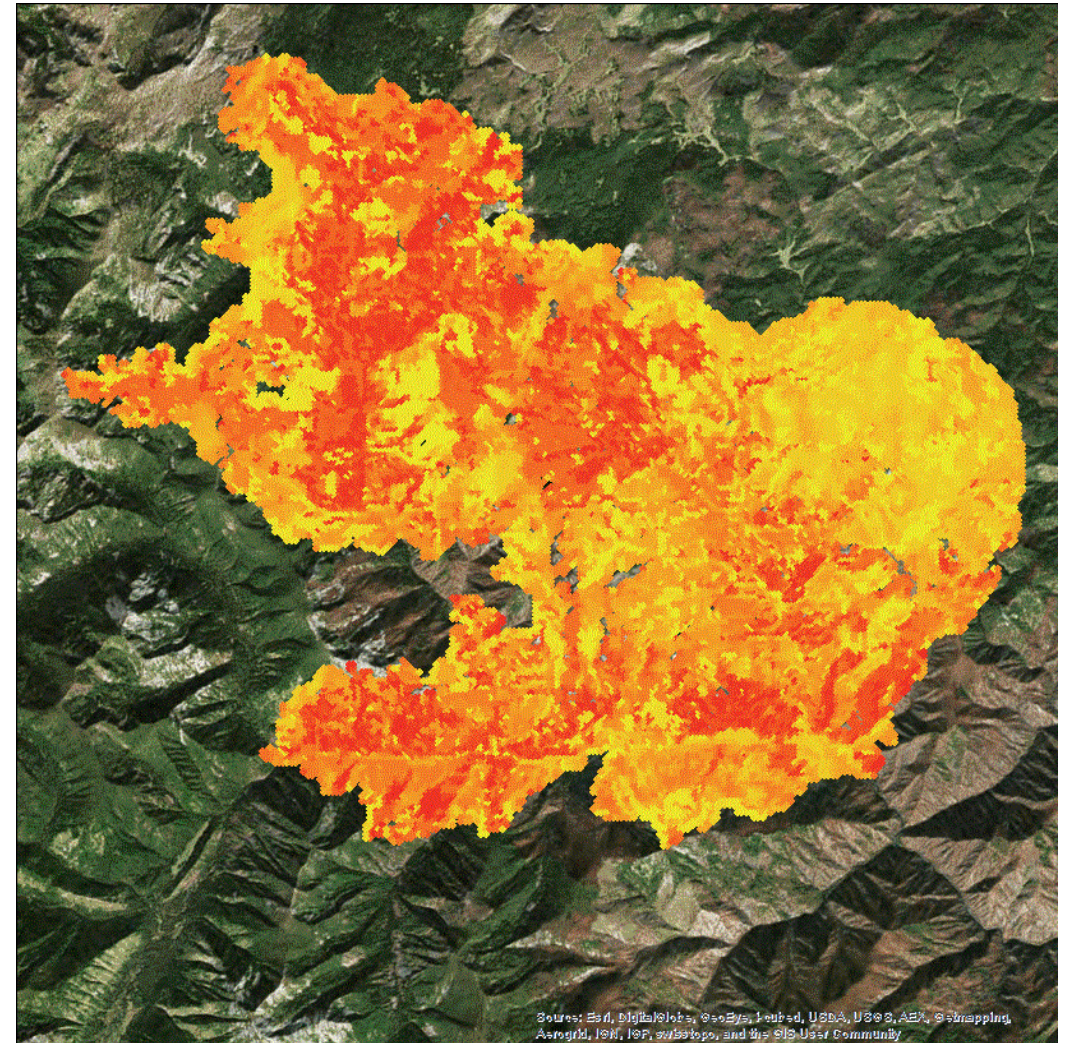
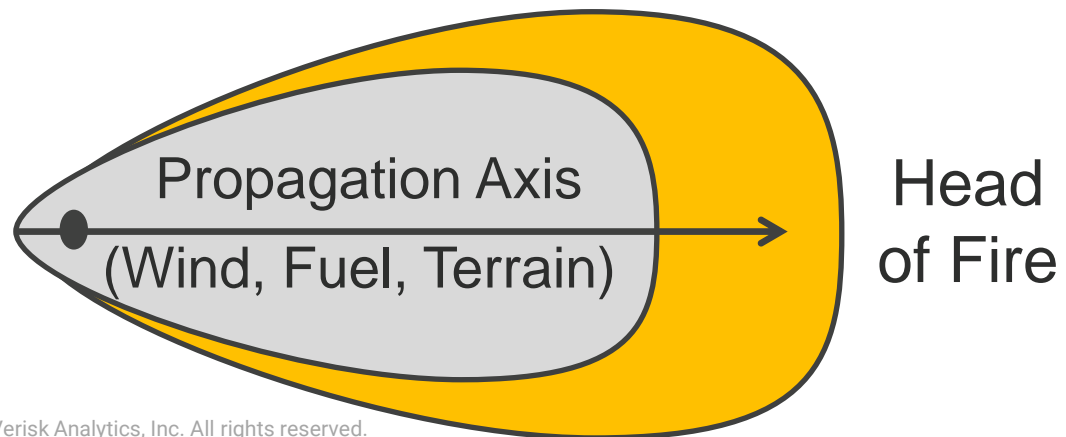
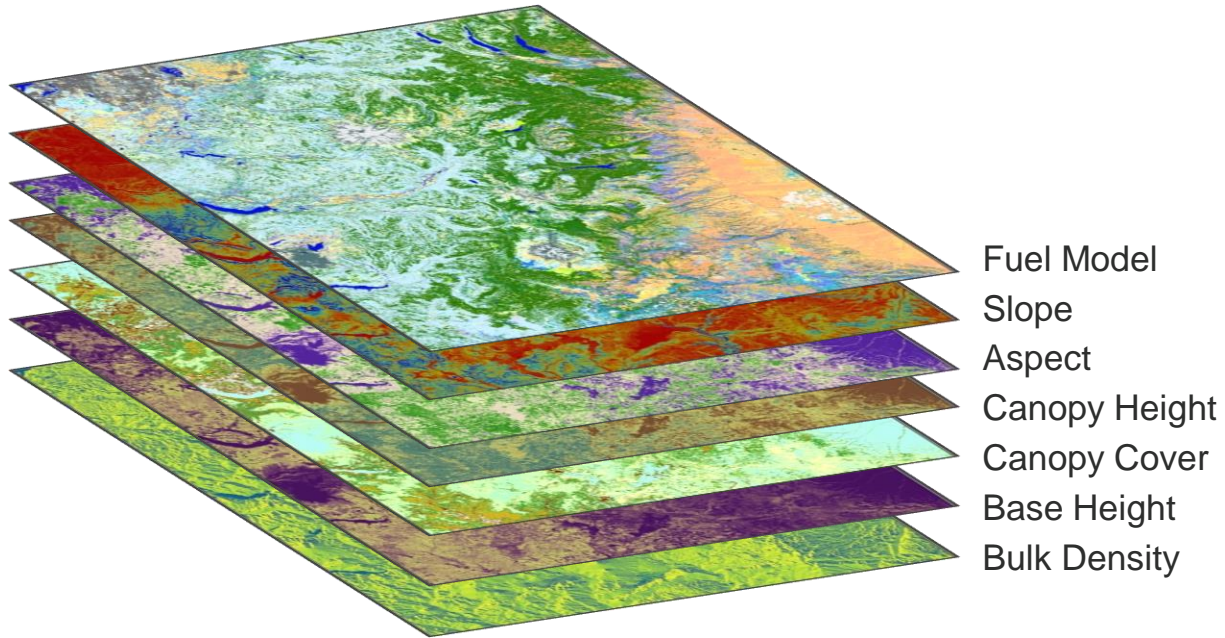
## Forest



# Model Captures Ignitions and Likelihood to Burn



# Model Includes Realistic, Physically-Based Fire Spread



# Explicitly Accounts for Different Fire Spread Mechanisms

- Surface Spread
- Surface-to-Canopy Transition
- Canopy Spread
- Fire Branding/Spotting



## Property Level



Roof Type



Siding



Skylight and Dormer



Defensible Space

## Community Level



**FIREWISE USA™**  
Residents reducing wildfire risks

# Catastrophe Model Fills Gaps in Historical Losses



*May 1994*

*November 2016*



*Unnamed California Fire (July 18, 1993)*



# Catastrophe Model Summary

- Catastrophe models augment historical data for low frequency, high severity events
- Wildfire catastrophe models provide realistic simulations of potential losses
  - Includes weather, fuels and ignition data
  - Employs physically-based fire spread
  - Incorporates property information, building codes, wildfire mitigation and fire suppression
  - Considers increases in development and exposure over time
- Loss estimates support risk management, enabling the goal of providing financial resilience
  
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