



JENSEN HUGHES

Advancing the Science of Safety

City of Malibu
Community Wildfire Protection Plan

David Kerr | February 2020

PURPOSE OF PLAN

- + Provide the City with realistic and achievable wildfire mitigation recommendations and a solid implementation strategy.
- + Assure that recommended actions are in balance with ecological and fiscal resources
- + Provide educational resources for residents to enhance fire preparedness and structure hardening



MAJOR COMPONENTS OF PLAN

- + Wildfire hazard assessment
 - Fuels
 - Weather
 - Climate Impacts
- + Wildfire risk assessment
 - Historic wildfire frequency on the landscape
 - Fire spread probabilities
- + Identification of values risk including life, property, critical infrastructure, natural and cultural resources that are threatened by wildfire
- + Design wildfire mitigation strategies to increase the fire resiliency of these values

PLAN REQUIREMENTS

+ Minimum Requirements

- Regional collaboration
- Develop a prioritized hazardous fuel treatment strategy
- Develop strategies to reduce structural ignitability

+ Plan Approval

- Local Government (City of Malibu)
- Local & State Fire Agencies (Los Angeles County Fire Department, CAL FIRE)

+ Benefits of an Approved Plan

- Help a community establish priorities for the protection of life, property, and critical resources
- Improve the City's competitive standing for federal and state grants to fund wildfire hazard mitigation work

YOUR WILDLAND URBAN INTERFACE

- + WUI – The line, area, or zone where structures and other human development meet or intermingle with wildland fuels. An area where mitigation actions can assist in preventing damage or loss from wildfire.
 - WUI does not capture all wildfire hazard areas or address potential urban conflagration.
 - Funds distributed under the Healthy Forest Restoration Act (HFRA) and FEMA Hazard Mitigation grants focus on WUI areas.
 - The CWPP provides an opportunity to identify a WUI boundary to address the needs of the community

DEFINING A WILDLAND-URBAN-INTERFACE (WUI)



CWPP Planning Area

Malibu

Very High Fire Hazard Severity Zones in LRA
As Recommended by CAL FIRE



- + The City of Malibu does not currently have a formalized Wildland-Urban Interface

CAL FIRE designated Very High Fire Hazard Severity Zones

Fire Hazard Severity Zones

Very High	High
Medium	Low

Map Legend:

- City Boundary
- Water
- County Boundary

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The map was developed using data products such as parcel and city boundaries provided by local government agencies. It is not intended to be used for engineering or planning purposes. The map is for informational purposes only. Conditions and updates related to parcel and city boundary data should be checked to the appropriate local government entity.

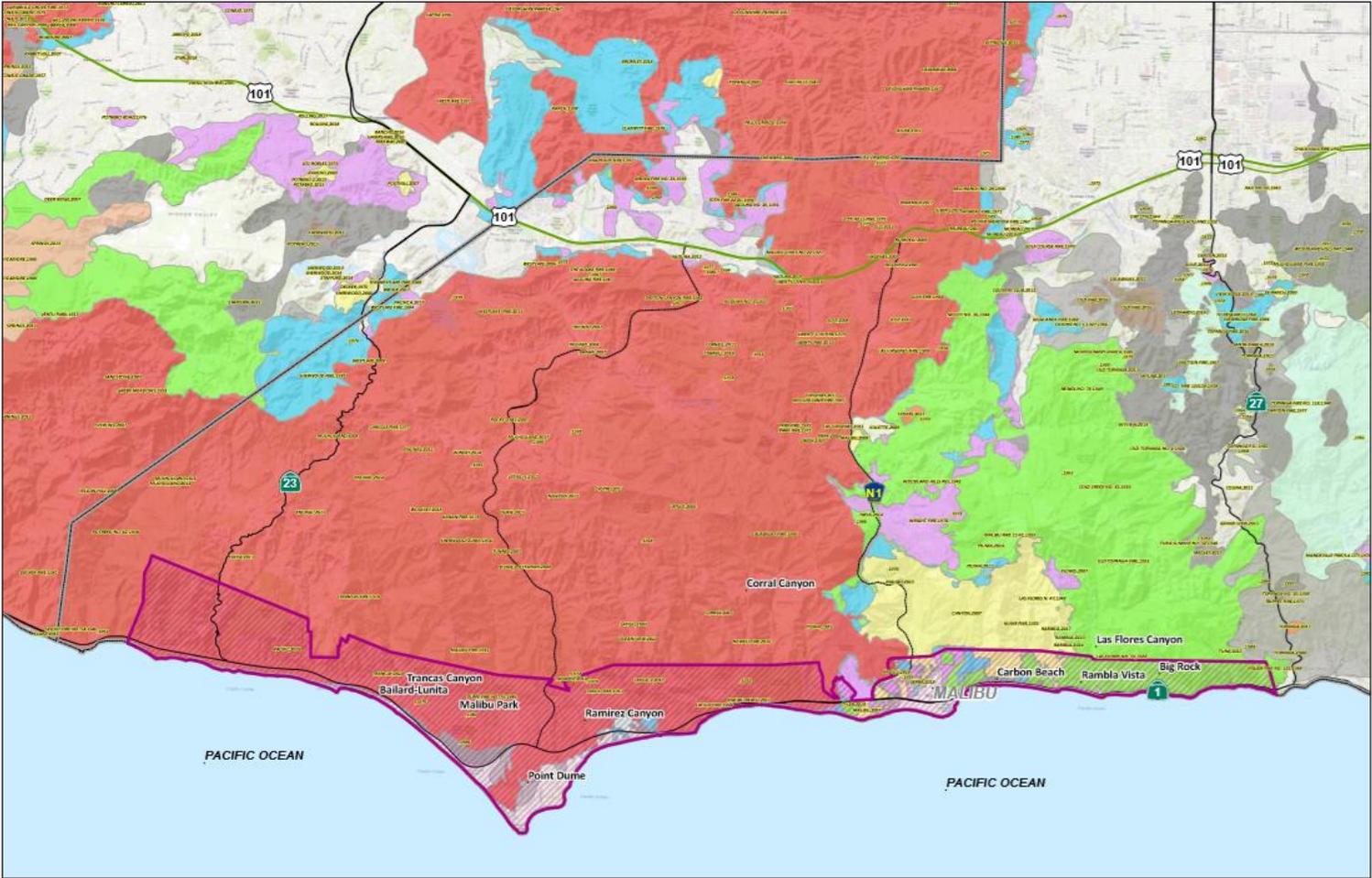
California Title Update, 10/10/2009
Scale 1" = 10,000'
© 2011 CAL FIRE
September 2011

MAP ID: Malibu

Jerry Smith, Geomatics
State of California
John Latta, Boundary for Resolutions
The State of California
Map Printing: Geomatics
Department of Forestry and Fire Protection

CAL FIRE Very High Fire Hazard Severity Zones (09/20/11)

FIRE HISTORY 1925 – 2018



City of Malibu
Fire History (1900 - 2018)
 Map by Jensen Hughes, 01/30/2020
 Scale 1:35,000 1 in = 1.9 miles

This map illustrates the perimeters of wildland fires in and around the City of Malibu between from 1900 to 2018. CAL FIRE (including contract counties), USDA Forest Service Region 5, USDI Bureau of Land Management & National Park Service, and other agencies jointly maintain a comprehensive fire perimeter GIS layer for public and private lands throughout the state.

Fire History

1900-1919	1990-1999	Planning Area
1920-1939	2000-2004	County Line
1940-1959	2005-2009	US Highway
1960-1969	2010-2015	State Highway
1970-1979	2016	County Highway
1980-1989	2017	
	2018	

0 0.5 1 2 Miles
 0 0.75 1.5 3 Kilometers

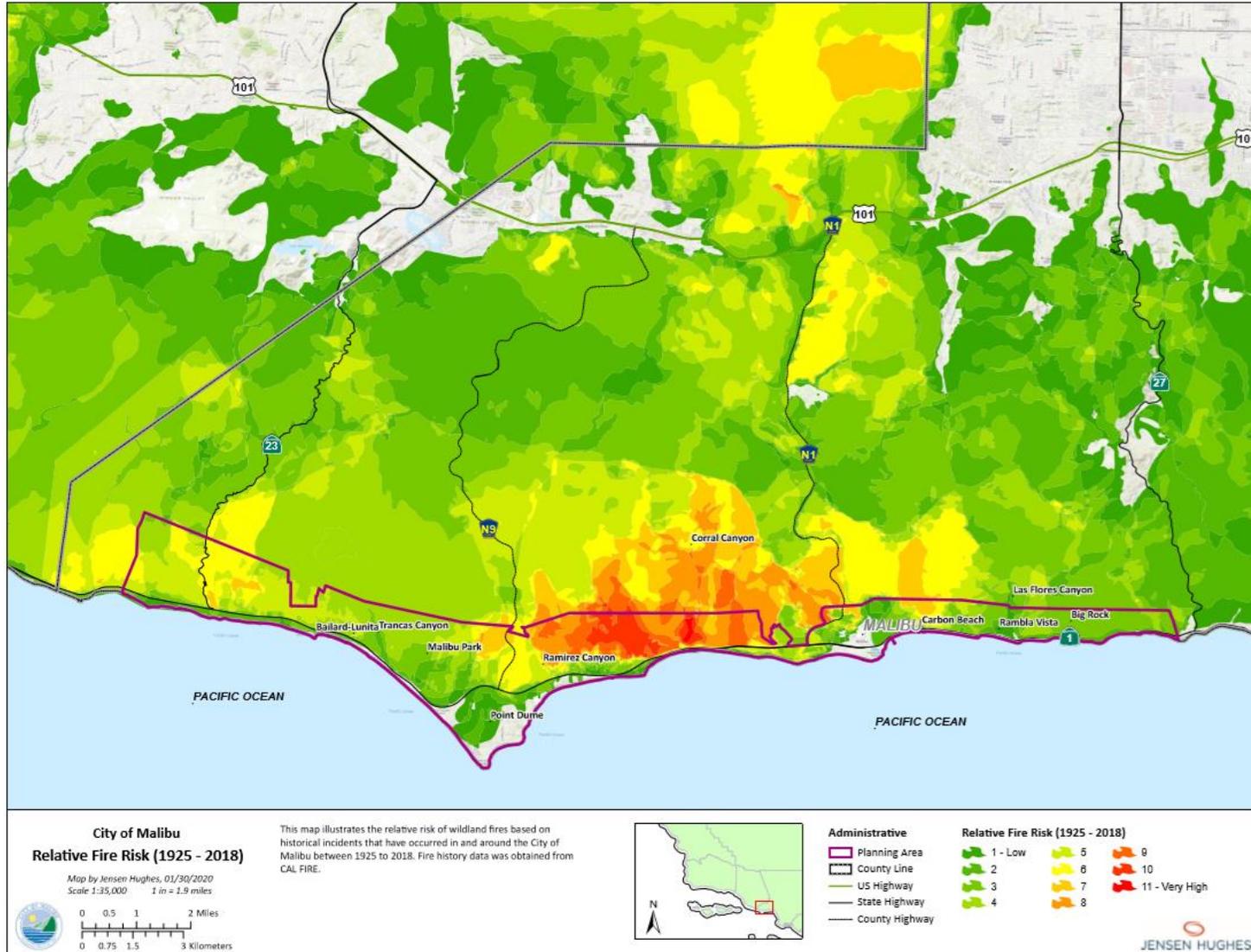
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FIRE HISTORY PRIOR TO 1979



Recent fire history obscures wildfires that have spread through the Malibu region in the past

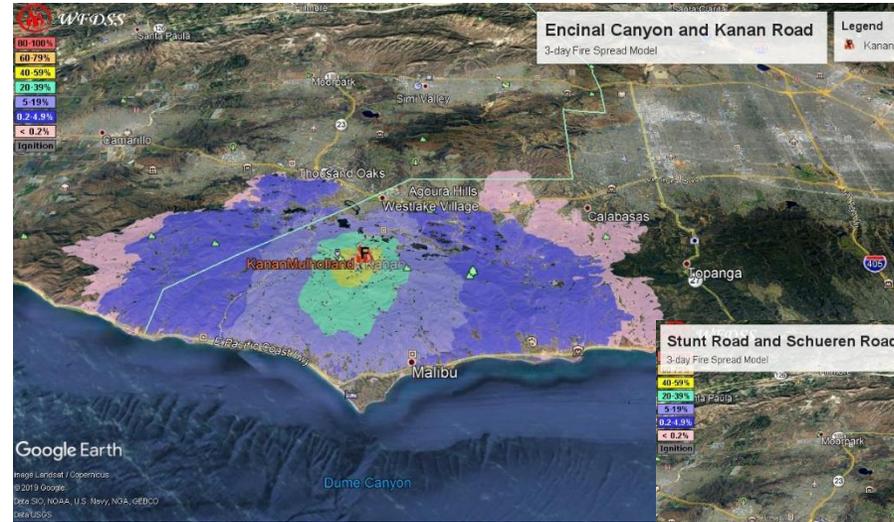
RELATIVE FIRE RISK



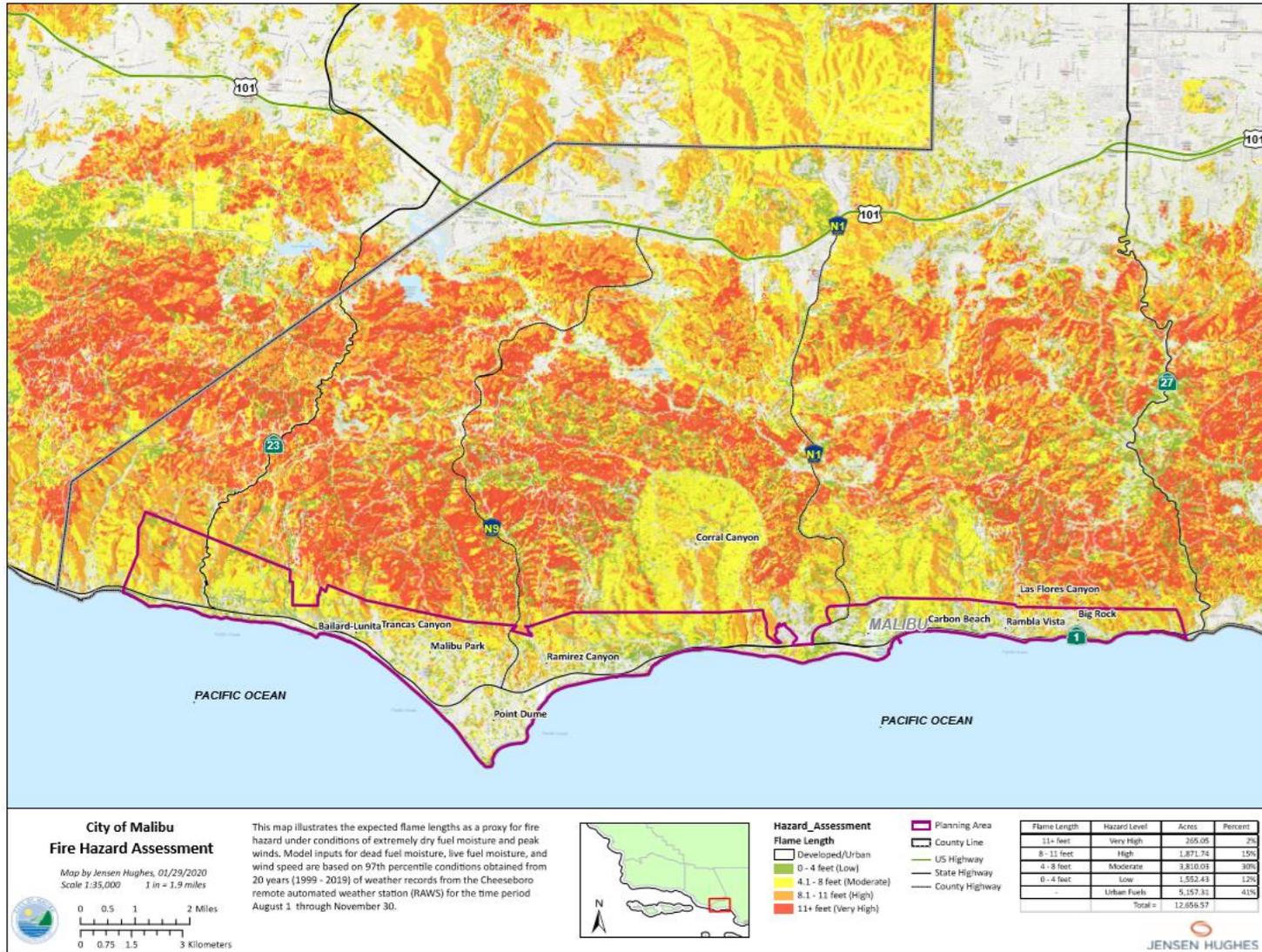
- + The risk of a wildfire affecting a portion of the community is based on fire history from 1925 through 2018. Areas that have seen wildfire more frequently are identified as locations of higher wildfire risk

FIRE SPREAD PROBABILITY

- + Fire spread probability based on three modeling locations
 - Encinal Canyon and Kanan Road
 - Stunt Road and Schueren Road
 - Malibu Canyon Road at the Tunnel
- + Each ignition simulated 1,024 fires burning under High and Very High Fire Danger conditions



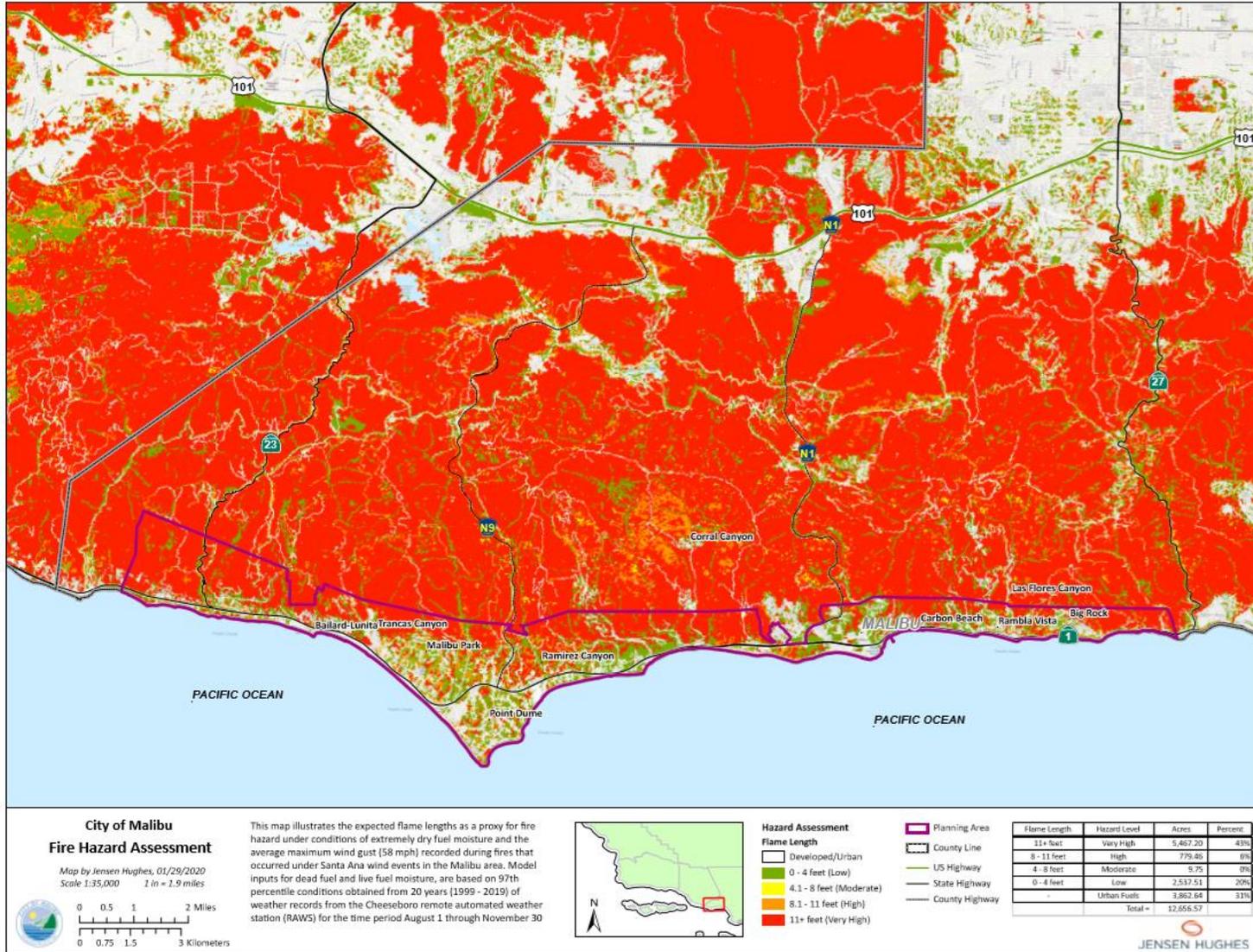
FIRE HAZARD



Categories based on wildfire intensity

- + Hazard analysis using 97th percentile wind and fuel moisture conditions determined from the Cheeseboro Remote Automated Weather Station

FIRE HAZARD



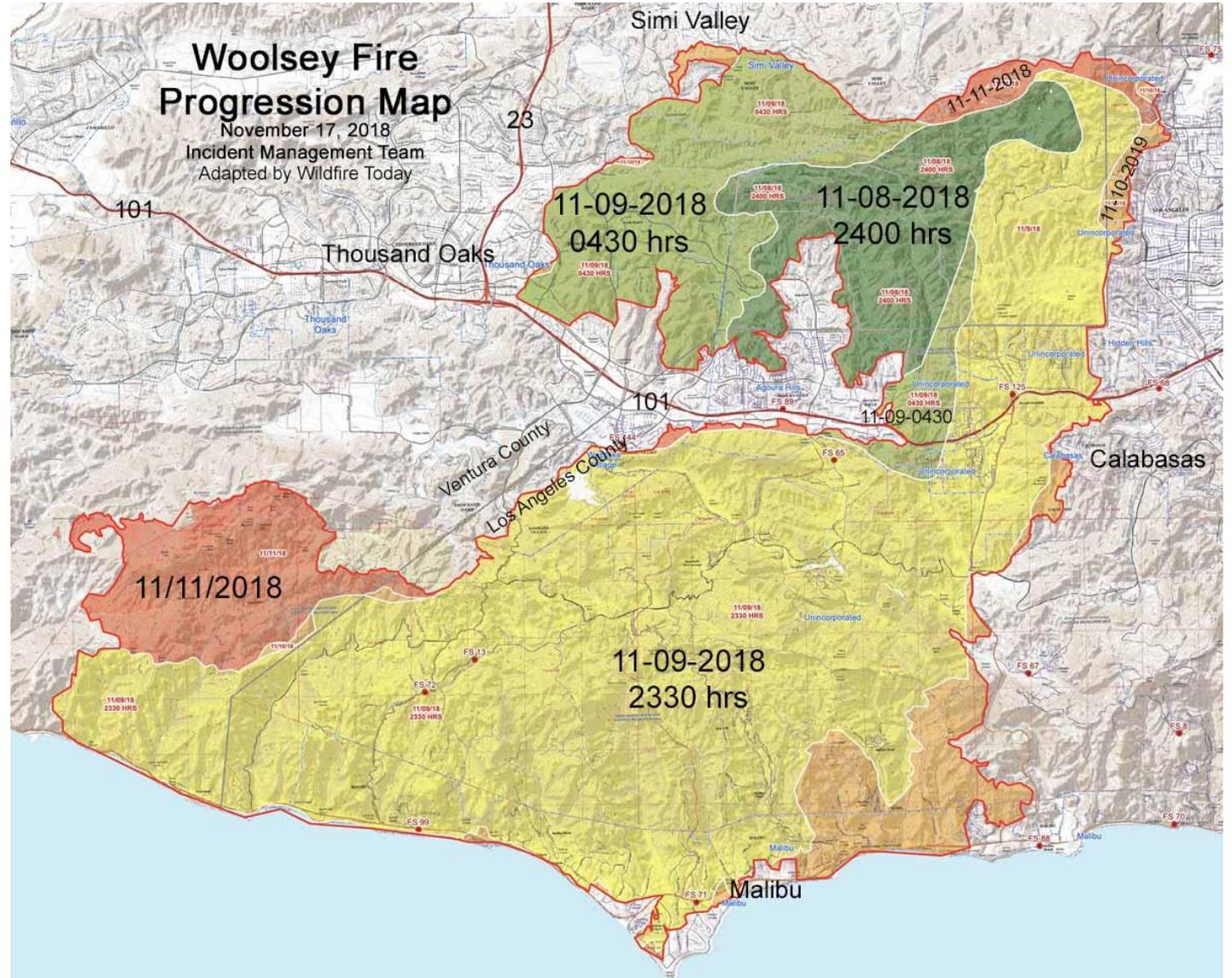
Categories based on wildfire intensity

- + Hazard analysis using weather and wind conditions observed during the Woolsey Fire. Wind gusts of 58 mph were used to create this analysis.

AREAS OF WILDFIRE CONCERN

Woolsey Fire Progression

- + The rapid spread of wildfire often makes it impossible to address community protection issues once a fire has started.



PAST CONSTRUCTION STANDARDS



- + Wooden deck and fence attached to a structure
Zumirez Drive

- + Wood shake roof
Seaboard Road



ORNAMENTAL VEGETATION



- + Flammable and invasive species are common in the HIZ City-wide – Las Flores Road

- + A mix of flammable landscape vegetation in the Home Ignition Zone (HIZ) – Las Flores Road



ACCESS AND EGRESS



- + Gate with Knox box entrance and Italian Cypress could make the residence more difficult to establish structure defense - Carbon Canyon Road

- + Multiple structures located on Carbon Mesa Road



DEFENSIBLE SPACE

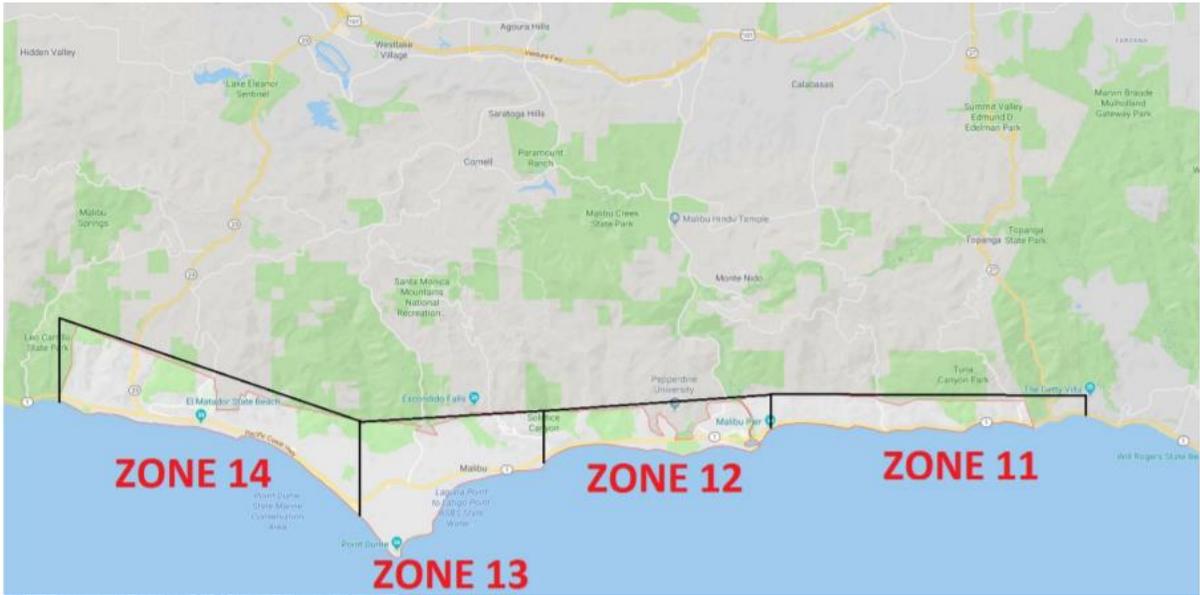


+ Las Flores Drive

+ Off Big Rock Drive



EVACUATION TIMING AND ROUTES



Malibu Mass Evacuation Zones

UTILITY INFRASTRUCTURE AND COMMUNICATION



- + Managing evacuation noticing during Public Safety Power Shut-offs, especially given the overall poor cellular communications in the canyons

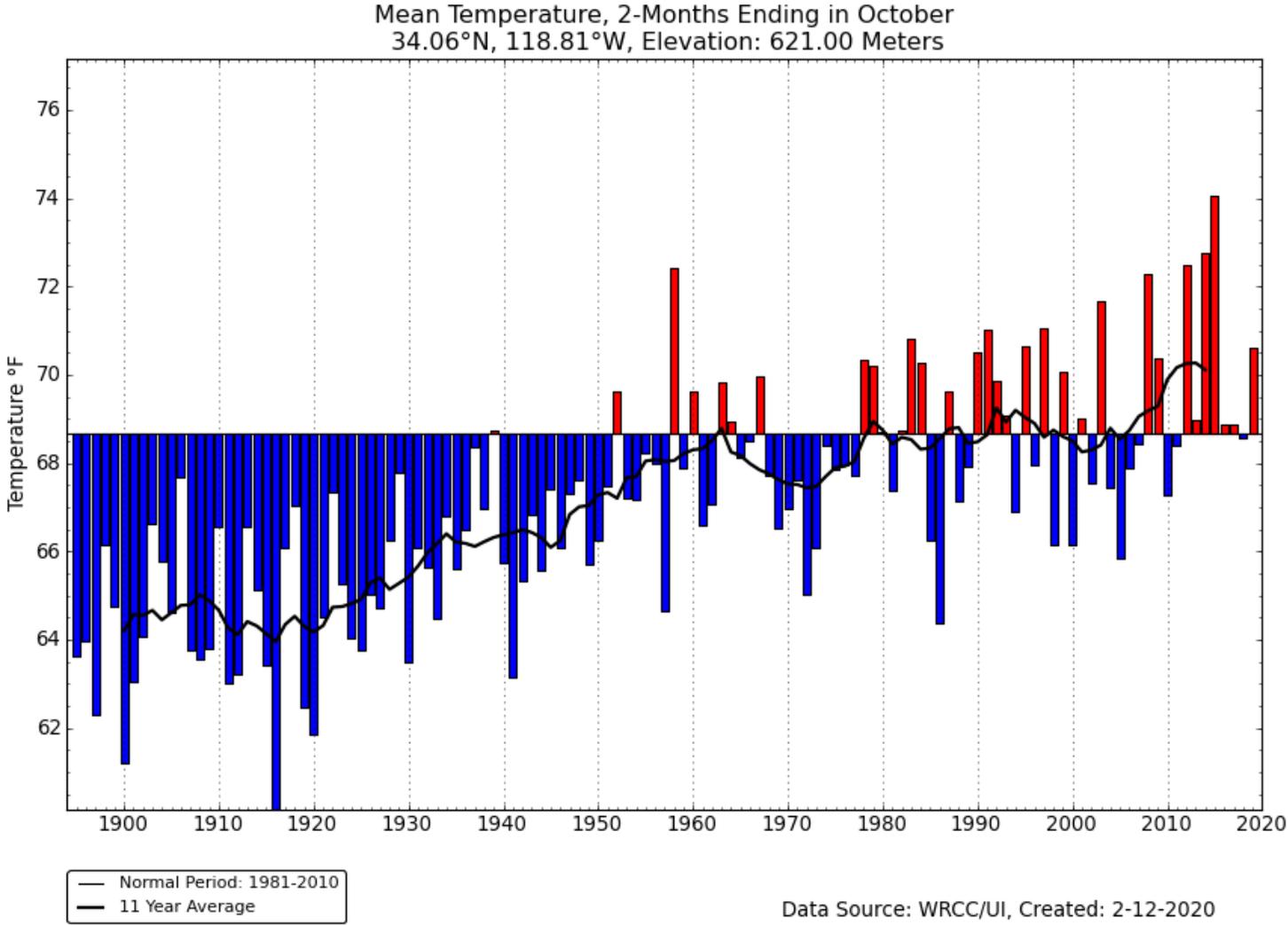


WILDLAND FUEL ENCLAVES



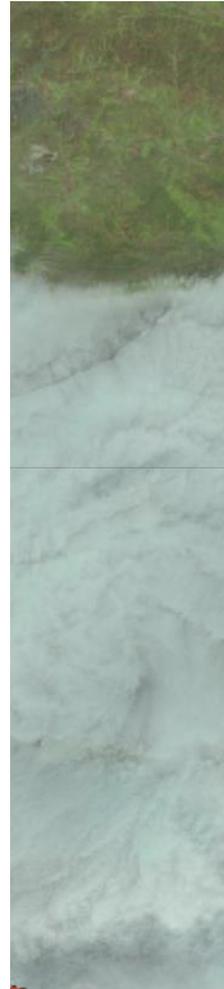
- + Pockets of wildland fuels can catch embers which can ignite spot fires away from the flaming front of the main fire

CLIMATE CHANGE AND WILDFIRE POTENTIAL

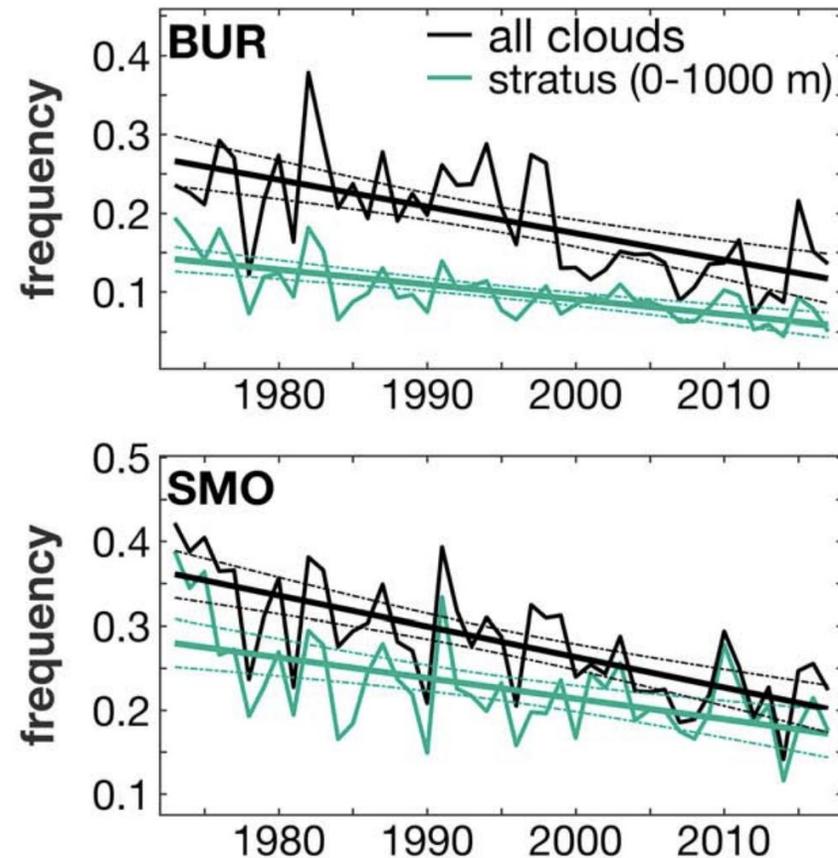


CLIMATE CHANGE AND WILDFIRE POTENTIAL

- + The marine layer is getting weaker leading to hotter conditions and more direct sun



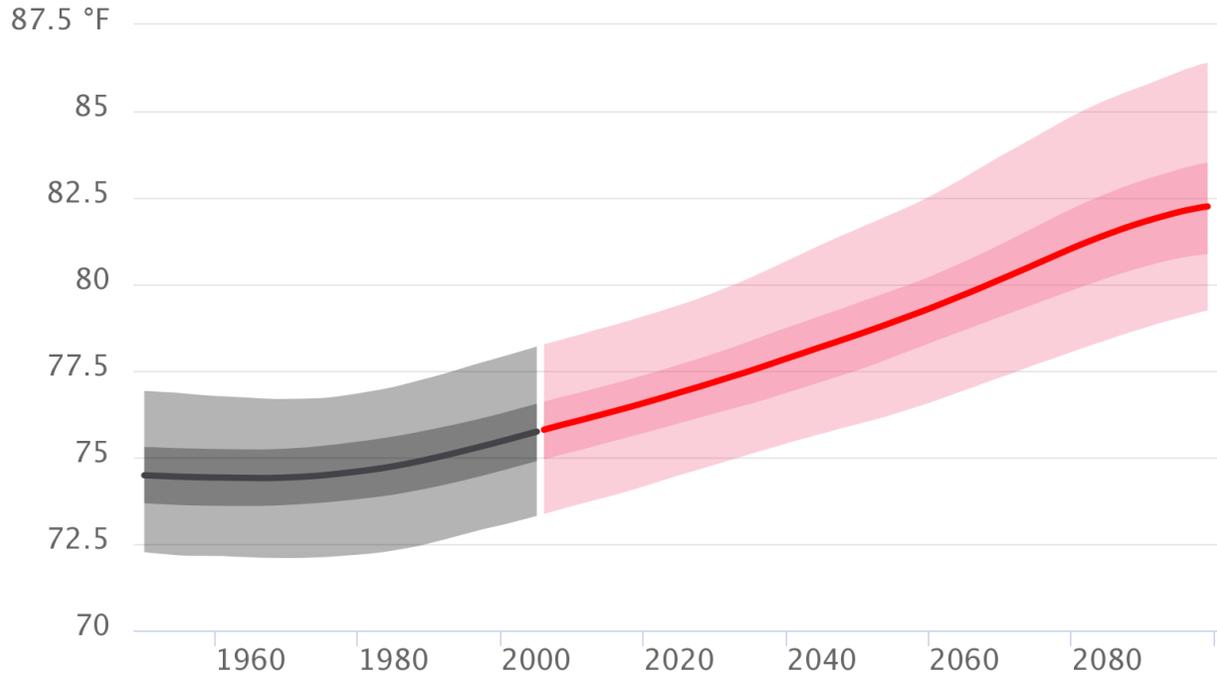
a) 08:00-17:00 cloud frequency 1973-2017



CLIMATE CHANGE AND WILDFIRE POTENTIAL

Max Temperature

Malibu, CA (Jun-Jul-Aug Average)

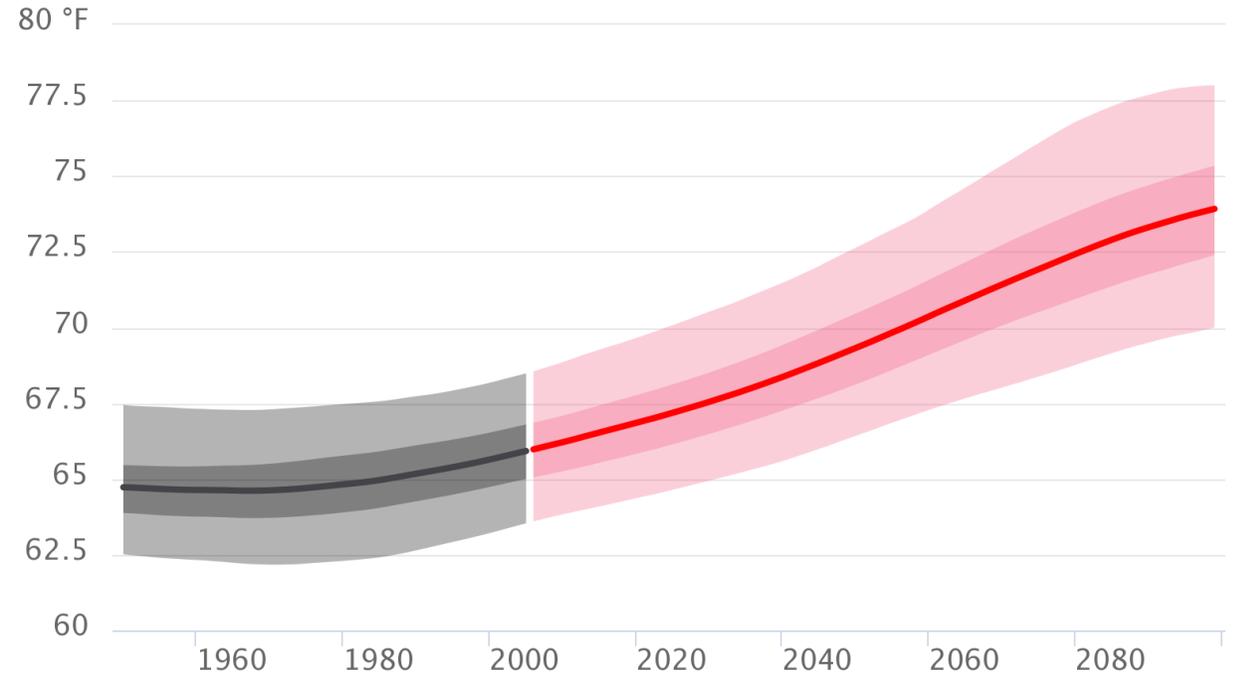


- Historic Avg.
- Historic Range
- Historic Quartile Range
- Higher Emissions (RCP 8.5) Avg.
- Higher Emissions (RCP 8.5) Range
- Higher Emissions (RCP 8.5) Quartile Range

NW Climate Toolbox, Data: MACAv2-METDATA CMIP5

Mean Temperature

Malibu, CA (Sept-Oct-Nov Average)



- Historic Avg.
- Historic Range
- Historic Quartile Range
- Higher Emissions (RCP 8.5) Avg.
- Higher Emissions (RCP 8.5) Range
- Higher Emissions (RCP 8.5) Quartile Range

NW Climate Toolbox, Data: MACAv2-METDATA CMIP5

CLIMATE CHANGE AND WILDFIRE POTENTIAL

Local Projections: Fire Danger (Summer/Fall) Higher Emissions (RCP 8.5)

malibu, ca (34.0259 ° N, 118.7798 ° W)

1990s

SUMMER(Jun -Aug)/
FALL(Sept -Nov)



FUEL MOISTURE(SUMMER) /(FALL)

14.7% /12.7%

EXTREME DANGER(SUMMER) /(FALL)

0days /3.3days

2025s

SUMMER(Jun -Aug)/
FALL(Sept -Nov)



FUEL MOISTURE(SUMMER) /(FALL)

14.7% /12.6%

EXTREME DANGER(SUMMER) /(FALL)

0days /3.9days

2055s

SUMMER(Jun -Aug)/
FALL(Sept -Nov)



FUEL MOISTURE(SUMMER) /(FALL)

14.7% /12.5%

EXTREME DANGER(SUMMER) /(FALL)

0days /4.7days

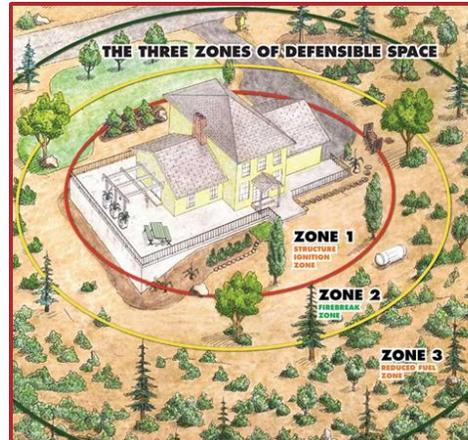
NON-NATIVE SPECIES

- + Chaparral doesn't burn again for 15-20 years
- + Invasive grasses and forbs can burn the next year



HOW CAN WILDFIRE THREAT BE ADDRESSED?

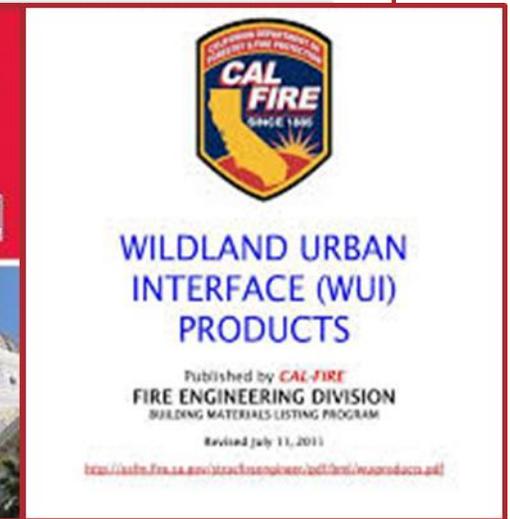
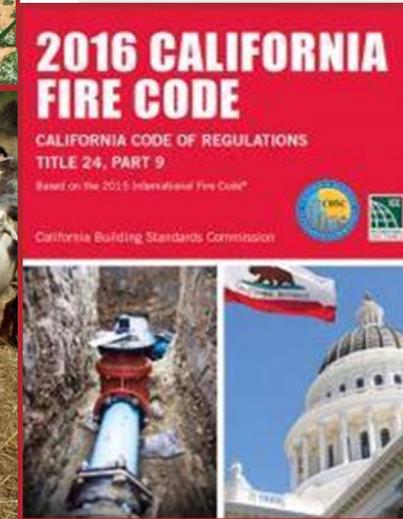
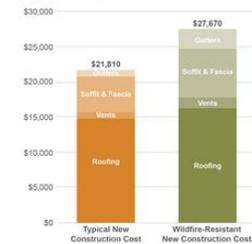
- + Land Use Planning - Zoning
- + Codes and Regulations
- + Structure Hardening
- + Defensible Space
- + Fuel Treatments
- + Fire Prevention



Roof New Construction



Roof New Construction Cost



Malibu is located in one of California's most fire-prone environments - residents along with local, state and federal governments will need to work together to develop a fire resilient community

HOW CAN THIS PLAN HELP THE COMMUNITY?

- + Better identify the wildfire threat
- + Expand hazard mitigation options
 - Vegetation/Fuels
 - Structure hardening
- + Increase grant funding opportunities
- + Help build partnerships in the community
- + Provide for better stakeholder coordination
- + Assure integration of fuel treatments with cooperators



TONIGHT IS ABOUT...

- + Information sharing
- + Forum for expressing issues and concerns
- + Opportunity to share local knowledge
- + Collect stakeholder input for plan preparation



HOW TONIGHT WORKS...

+ Facilitators available

- Jensen Hughes
- Los Angeles County Fire Department
- City of Malibu

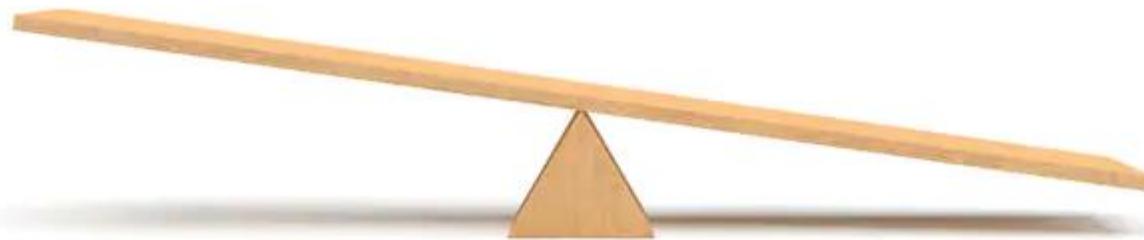


+ Work to accomplish tonight

- Validate the wildland fire hazard and risk assessments
- Identify areas of specific concern to the community
- Gather input from community members

GOALS FOR PLAN DEVELOPMENT

- + Scientific
- + Feasible
- + Balanced
- + Issues, Assets and Values Driven
- + Measurable, with Accountability for Action



SEEKING YOUR INPUT...

+ CWPP development website

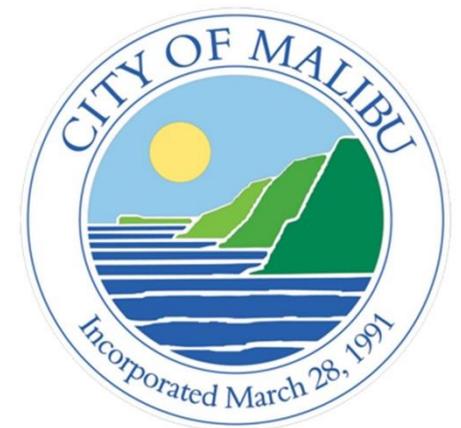
- www.MalibuCity.org/FireSafety

+ Community Survey

- Opportunity to express your opinion on nine topic areas related to the development of the Plan
<http://www.malibucity.org/WildfirePlanSurvey>

+ City email for comments

- FireSafety@MalibuCity.org



Questions?





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