



Wildfire Mitigation Advisory Committee Meeting

January 5, 2024

CAL FIRE -
Office of the State Fire Marshal



Call to Order

Welcome!

- ▶ If you have technical difficulties during this meeting, please contact Kara Garrett at:
 - (916) 201-5539 or Kara.Garrett@fire.ca.gov



Roll Call / Quorum Established



Daniel Berlant



Anale Burlew



Keali'i Bright



Caroline Thomas Jacobs



J Lopez



Robert Troy



Deborah Halberstadt



Michael Maguire



Jacy Hyde



Roy Wright



Dave Winnacker



Chris Ochoa



Lenya Quinn-Davidson



Yana Valachovic



Clay Kerchof



Staci Heaton



Sophia Lemmo



Sean McGlynn



Catherine Freeman



Don Hankins

Approval of Past Meeting Minutes Motion Required

- ▶ Scan the QR Code Below to Access the Complete Meeting Minutes Document!



WILDFIRE MITIGATION ADVISORY COMMITTEE MEETING Meeting Minutes – Tuesday, November 28, 2023 Posted: December 21, 2023



Committee Members Present

Daniel Berlant, CAL FIRE – Office of the State Fire Marshal
Caroline Thomas Jacobs, Office of Energy Infrastructure Safety
J. Lopez, State Board of Forestry and Fire Protection
Robert Troy, California Office of Emergency Services
Michael Maquire, Office of Planning and Research (Virtual)
Jacy Hyde, California Fire Safe Council
Roy Wright, Insurance Institute for Business & Home Safety (Virtual)
Dave Winnacker, California Fire Chiefs Association (Virtual)
Nick Cammarota, Representative from the Building Industry
Lenya N. Quinn-Davidson, University of California Cooperative Extension (Virtual)
Yana Valachovic, California Fire Science Consortium (Virtual)
Staci Heaton, Rural County Representatives of California
Sophia Lemmo, California Association of Resource Conservation Districts (Virtual)
Sean McGlynn, League of California Cities
Catherine Freeman, California State Association of Counties
Don Hankins, Professor, CSU Chico (Virtual)

Members Absent

Mike Parkes, Department of Forestry and Fire Protection
Deborah Halberstadt, California Department of Insurance
Clay Kerchof, Department of Housing and Community Development

CAL FIRE Staff in Attendance

Frank Bigelow, Acting Deputy Director
Jim McDougald, Staff Chief
John Morgan, Deputy Chief
Carmel Barnhart, Deputy Chief
Scott Witt, Deputy Chief
Chris Ramey, Division Chief (Virtual)
Dennis O'Neil, Assistant Chief
Mark Hillskotter, Battalion Chief (Virtual)
Steven Hawks, Retired Annuitant (Virtual)
Mark Rosenberg, Research Data Manager (Virtual)
Justine Grafton, Associate Governmental Program Analyst (Virtual)
Jamie Sammut, Senior Staff Counsel (Virtual)
Kara Garrett, Deputy State Fire Marshal III

1. CALL TO ORDER 1:02 PM

A. Welcome
The meeting was called to order at 1:00 PM by Daniel Berlant.

B. Roll Call – Kara Garrett

Daniel Berlant



Approval of Meeting Agenda Motion Required

- ▶ Scan the QR Code Below to Access the Complete Meeting Agenda Document!



WILDFIRE MITIGATION ADVISORY COMMITTEE MEETING Meeting Agenda – Friday, January 5, 2024, 1:00 PM – 3:00 PM Posted: December 21, 2023



Location:
CNRA Building, 715 P Street, 2nd Floor Conference Room 2-221 (A-C)
Sacramento, CA 95814

Zoom Meeting Information –
Please click the link below to join the webinar:
<https://us06web.zoom.us/j/85192423489?pwd=dnZYaUhXVFliUTFmT21nMzJYYVlxQT09>
Passcode: 462073

- 1. CALL TO ORDER**
 - A. Welcome
 - B. Roll Call/Quorum Established
 - C. Approval of Past Meeting Minutes (Motion Required)
 - D. Agenda Review (Motion Required)
- 2. OLD BUSINESS**
 - A. Division Report
 - B. California Wildfire Mitigation Program (CWMP) Report
- 3. NEW BUSINESS**
 - A. American Property Casualty Insurance Association – The current state of the insurance market, regulations, and what can be done.
 - B. Cal Poly Wildland-Urban Interface (WUI) Fire Institute – Analysis of intelligent management and purposeful disruption of the fire pathways that enable disastrous conflagration in WUI communities.
- 4. ROUNDTABLE**
- 5. PUBLIC COMMENT**
- 6. UPCOMING MEETING DATES FOR 2024**
 - A. Third Tuesday of each month starting at 1 PM and ending at 3 PM.
 - a. February 20, 2024
 - i. CNRA Building, 715 P Street, 2nd Floor Conference Room 2-221 (A), Sacramento, CA 95814
- 7. MEETING ADJOURNMENT (Motion Required)**



Community Wildfire Preparedness and Mitigation Division Report



Wildfire Preparedness

Defensible Space

- ▶ Statewide SRA Total for Fiscal Year-To-Date 2023-2024:
 - **136,416** inspections completed, **55%** of the goal (**250,000 Goal**)

Burn Permits

- ▶ Statewide SRA Fiscal Year-To-Date 2023-2024:
 - **39,251** requested - **35,945** issued
 - **87,034** issued since the Jan 03, 2023, launch.

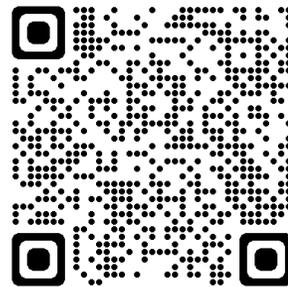


Wildfire Preparedness

Home Hardening

- ▶ CAL FIRE staff continue to support the California Wildfire Mitigation Program (CWMP) program.
- ▶ CAL FIRE staff have released a new Wildfire Home Hardening website which includes a Home Hardening Self Assessment Application.

<https://www.fire.ca.gov/home-hardening>



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Wildfire Preparedness

Home Hardening

- ▶ On January 17th, CAL FIRE staff will present a discussion on the California Wildland-Urban Interface Code as part of the Office of the State Fire Marshal webinar series.

<https://bit.ly/CA-WUI-Code-Webinar>



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Wildfire Preparedness

Utility Wildfire Mitigation Program

- ▶ Personnel continue to consult with utilities on the Wildfire Mitigation Plans. The plans are expected to have published decisions in late February.



Wildfire Planning and Statistics

Fire Prevention Efforts FY 23/24

- ▶ Fuel Reduction Projects:
 - 397 projects, 79.4% of the goal

- ▶ Combined Fuel Reduction:
 - 33,811.6 acres treated, 33.8% of the goal
 - Unit Projects - 24,669.6 acres
 - Northern Region: 15,805.6 acres
 - Southern Region: 8,864 acres
 - Grant Projects: 5,867.2 acres
 - CFIP Projects: 3,274.8 acres

- ▶ Prescribed Fire (also counted in fuel reduction):
 - 19,359.2 acres treated, 38.7% of the goal



Wildfire Planning and Statistics

Fire Hazard Severity Zones

- ▶ State Responsibility Area (SRA):
 - CAL FIRE - Office of the State Fire Marshal submitted the Final Statement of Reasons for the State Responsibility Area Fire Hazard Severity Zones to the Office of Administrative Law on December 15, 2023.
 - More information:
 - osfm.fire.ca.gov/fhsz



Wildfire Planning and Statistics

Pre-Fire Planning

- ▶ Improving Quality Assurance/Quality Control (QA/QC) tools to validate California Fire Incident Reporting System (CALFIRS) & Computer Aided Dispatch (CAD) ignition points with the support of CALFIRS Program.
- ▶ Community Wildfire Protection Plan (CWPP) development/toolkit is ongoing.
- ▶ Continuing to develop the Fuels Treatment Effectiveness reporting mobile application, report templates and dashboard.



Wildfire Planning and Statistics

CalStats

- ▶ Working with Federal partners on uploading National Association of State Foresters (NASF) ignition data from the last three quarters.
- ▶ Continuing to focus on our integration with Electronic Patient Care Record (ePCR) and CALFIRS systems to enhance overall system functionality.
- ▶ Working closely with our ImageTrend account advisors to wrap up custom developments.



Wildfire Planning and Statistics

Wildland Fuels Reduction Reporting

- ▶ Completing quarterly QA/QC of all data
 - CAL FIRE data will be reported to the Task Force in January
 - Developing a work plan with Technosylva to upgrade CalMAPPER desktop and mobile app to improve data quality, efficiency, integration other applications and reporting requirements.



Community Wildfire Mitigation Assistance

Land Use Planning

- ▶ 30 jurisdiction Safety Elements have been successfully updated and reviewed by the Board of Forestry (BOF) throughout the year.



Community Wildfire Mitigation Assistance

NFPA Firewise USA

- ▶ December 5, 2023, provided quarterly training/meeting for Firewise Community board members and Fire Safe Councils staff to provide networking amongst the two programs and assist each other in their pre-planning efforts to reduce the risk of wildfire in their areas.



Community Wildfire Mitigation Assistance

NFPA Firewise USA

- ▶ Currently 784 communities in good standing. This number may fluctuate a bit through the end of the month as the last renewals are completed.
- ▶ Firewise application renewals were due by December 15, 2023. National Fire Protection Association (NFPA) provided a two-week extension due to website portal issues.

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Community Wildfire Mitigation Assistance

Subdivision Review

- ▶ Conducted Fire Safety Surveys in Humboldt/Del Norte Counties.
- ▶ 55 Fire Safety Surveys completed.
 - ▶ These surveys were approved by BOF on December 5, 2023, Resource Protection Committee.



Community Wildfire Mitigation Assistance

Local Planner Training

- ▶ 10-12 training dates in 2024 and extending into early 2025.
- ▶ Registration will open soon on communitywildfire.org website



Community Wildfire Mitigation Assistance

Wildfire Prevention Grants Program

- ▶ On November 1, 2023, CAL FIRE announced the availability of up to \$117 million in funding for local projects that address the risk of wildfire and reduce wildfire potential to communities, through the department's Wildfire Prevention Grants program.
- ▶ The Fiscal Year 2023-24 Wildfire Prevention Grants Solicitation is open from November 1, 2023, through January 10, 2024, at 3:00 PST.

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Community Wildfire Mitigation Assistance

Wildfire Prevention Grants Program

- ▶ The Wildfire Prevention Grants Workshop Webinar was hosted via Microsoft Teams on November 08, 2023, at 10:00-11:30 AM PST.
 - The webinar was recorded and posted on the WP Grants webpage along with the Presentation.
 - It was attended by 327 participants. We typically have around 250 participants for reference.

Use the QR code below to visit the Grants Website!

www.fire.ca.gov/what-we-do/grants/wildfire-prevention-grants





California Wildfire Mitigation Program (CWMP) Report

J Lopez



California Wildfire Mitigation Program (CWMP) Report

CWMP Program

- ▶ CWMP Portal Launched
- ▶ Airtable Budget Tracker Update
- ▶ Legal Counsel Selection
- ▶ San Diego County Fire Department CWMP Program Presentation to the CWMP Board
- ▶ Community outreach for available funding, AB179 and SB101

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California Wildfire Mitigation Program (CWMP) Report

Demonstration Communities

- ▶ Shasta County FSC/Shasta County: Tri Party agreement in local legal team for review.
- ▶ San Diego County Fire Dept./San Diego County: Submitted EHP Phase I Biology and historical results to FEMA.
- ▶ North Coast Opportunities/Lake County: RFP for Phase 2 went out on December 29th. Tri-party agreement is nearing completion.

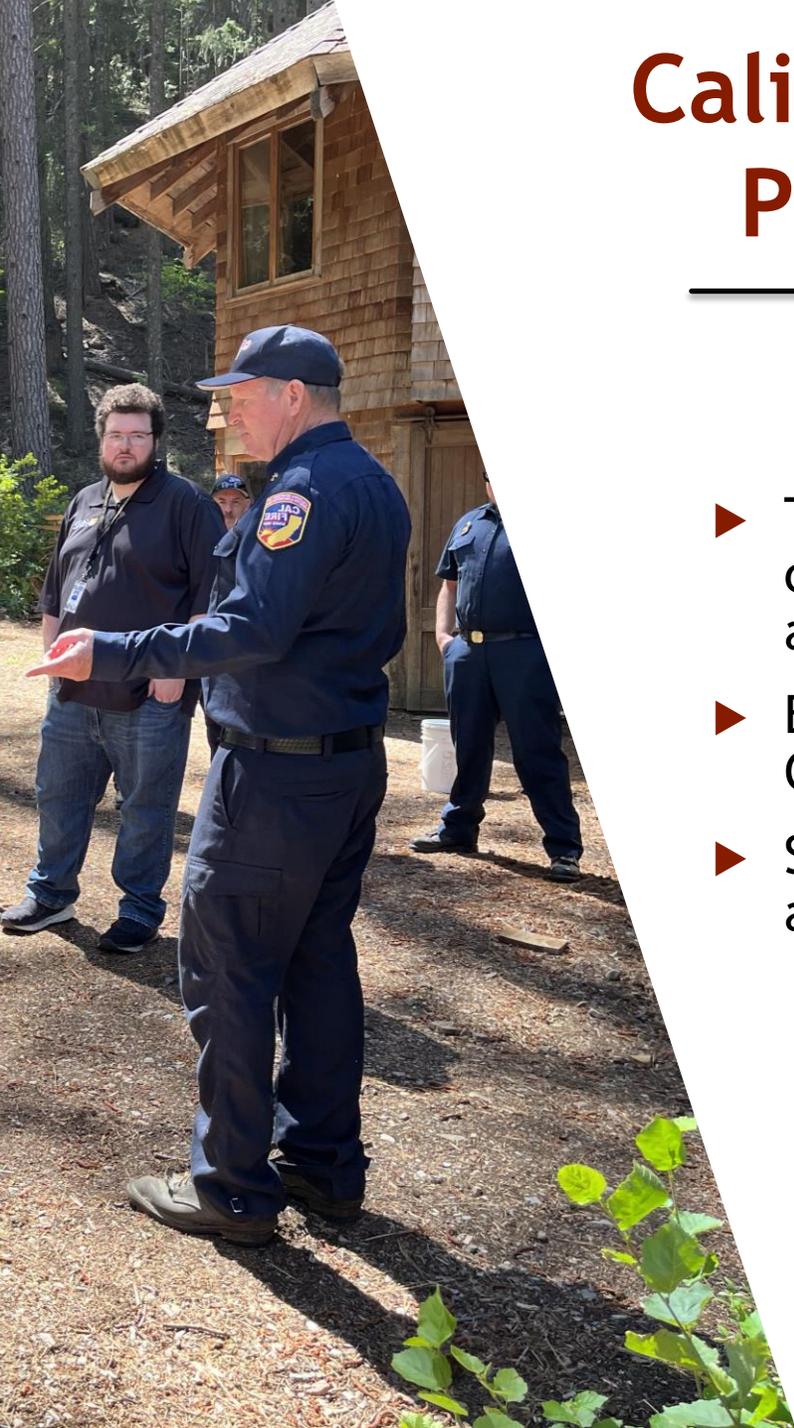
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California Wildfire Mitigation Program (CWMP) Report

Demonstration Communities

- ▶ Tuolumne County: County board of commissioners ratified EHP Phase I contract award.
- ▶ El Dorado County: EHP Phase I review complete, County implementing changes.
- ▶ Shasta Valley RCD/Siskiyou County: Finalizing assessments. Winter weather impacts started.





Current State of the Insurance Market, Regulations, and What Can Be Done

California Wildfire Mitigation Advisory Committee Meeting

Karen Collins

Vice President, Property & Environmental

January 5, 2024



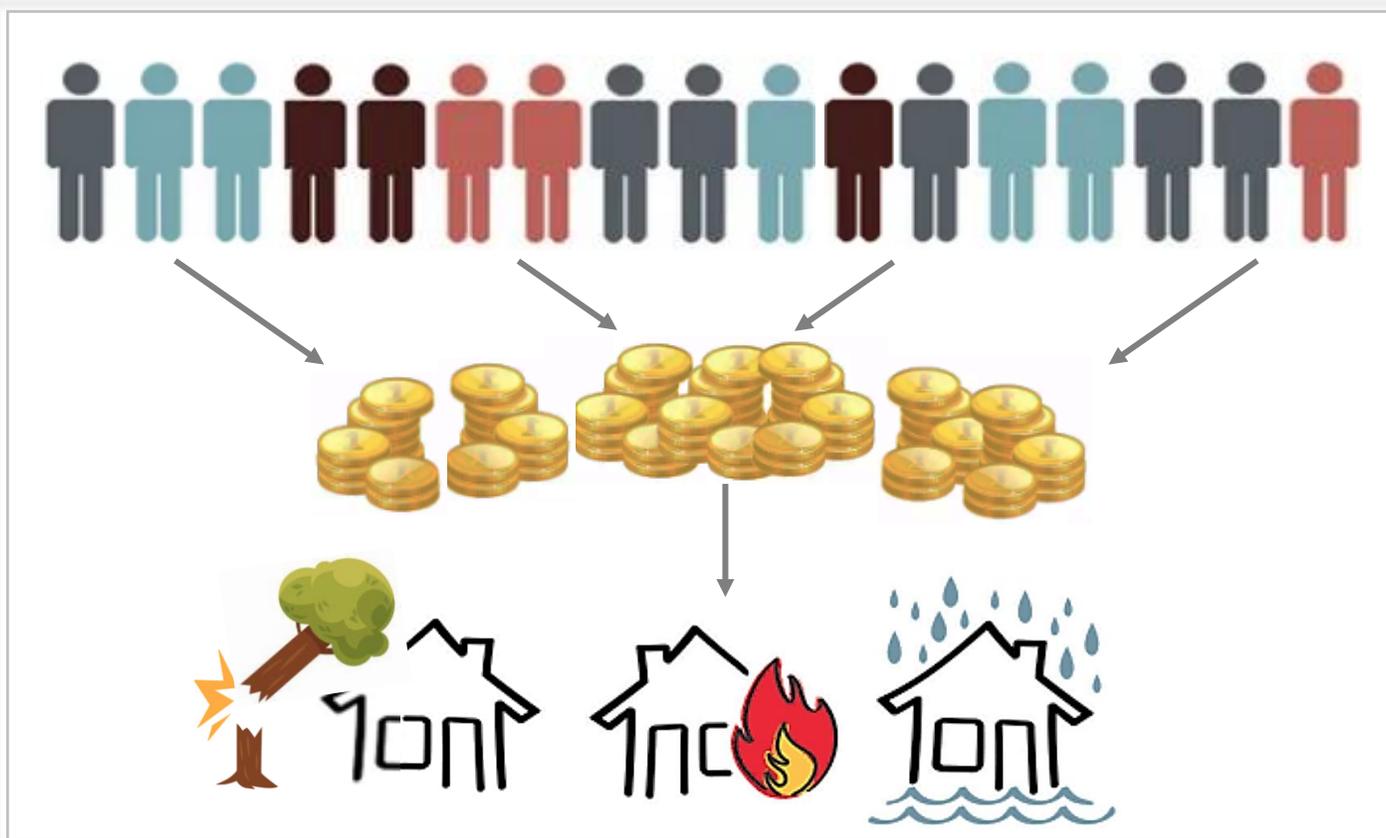
Function of Insurance

Pool and Distribute Risk

Insurance is a pass-through mechanism

The overwhelming majority of insurance premium dollars collected are used to pay claims.

Reinsurance or other forms of capital may be used to help pay claims from extreme loss events.



Insurance is simply the cost of claims

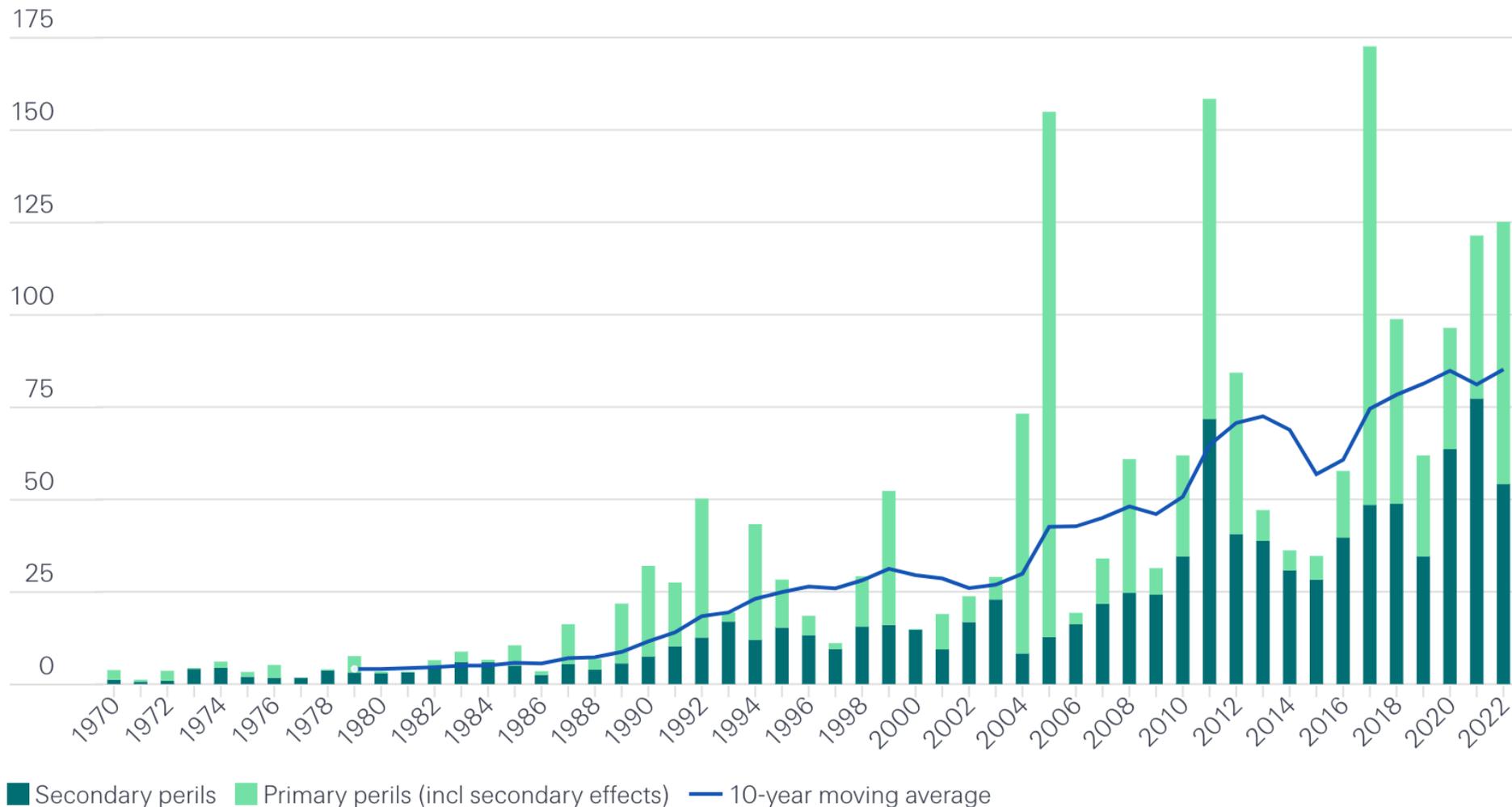
Any increase in coverage needs, costs and/or risk exposure will typically result in more frequent and/or costly claims.

In turn, this may require higher premiums or additional capital to ensure ability to pay claims.



Growing Losses

Insured natural catastrophe losses (USD bn)





What is Causing the Increased Losses

Seeing the full picture... it's not just the weather

Verisk: The factors causing a doubling of average annual natural catastrophe losses over the last decade are (in order of importance):

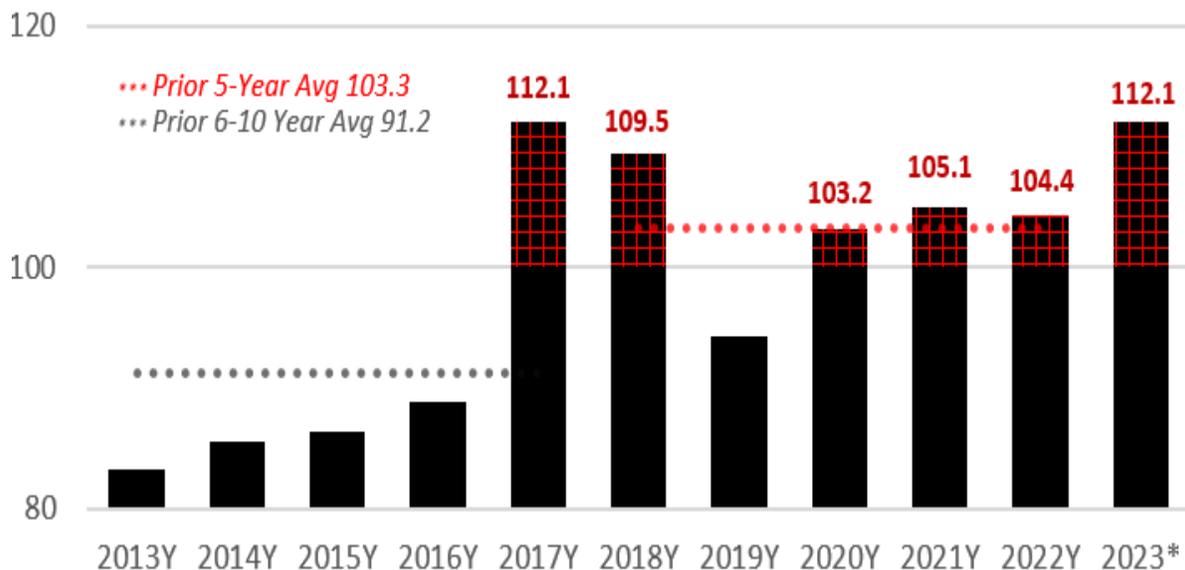
1. A rise in exposure values and replacement costs, represented both by continued construction in high-hazard areas and by high levels of inflation that are driving up repair and rebuild costs
2. The natural variability that comes from selecting any five-year sample of natural catastrophe experience
3. The effects of climate change on different atmospheric perils
4. The impacts of man-made loss drivers, such as social inflation and legal and regulatory factors



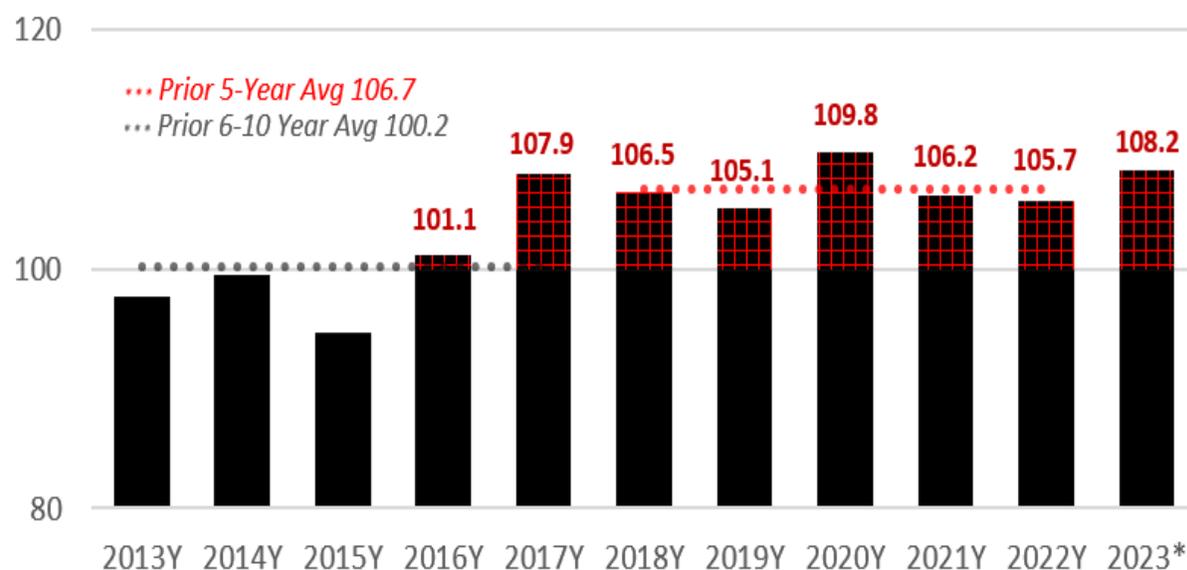
Elevated combined ratios in U.S. property lines

i.e. - for every dollar in premium collected, more than a dollar paid

Homeowners



Commercial multi-peril

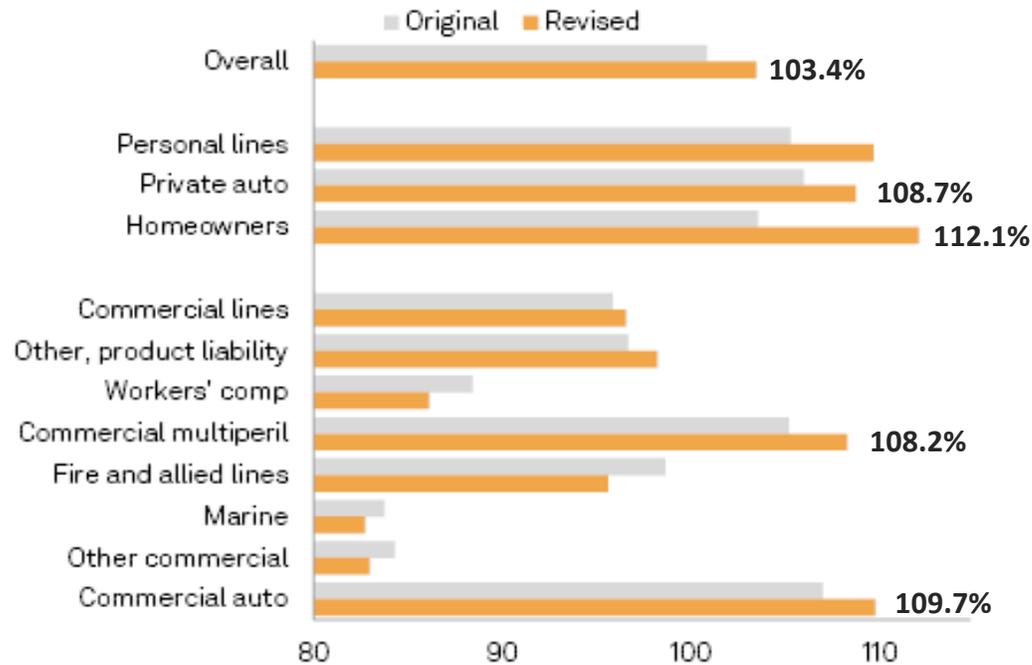


Source: APCIA using S&P Global (*S&P Year-End Projection, data compiled October 20, 2023)
Commercial multi-peril results include liability and non-liability lines of coverage.



Calendar Year 2023 combined ratio forecast (%)

S&P Global projects overall industry loss



“Volatile homeowners results in Florida, Texas, and California are profoundly affecting the line’s performance nationwide.”

A.M. Best
Best’s Market Segment Report
Sep 26, 2023

Data compiled Sept. 29, 2023.

A = actual results; P = projected results; LAE = loss adjustment expense.

Results adjusted to exclude state funds and residual markets entities.

Sources: S&P Global Market Intelligence; proprietary estimates.

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What is Causing the Insurance Coverage Crisis ...in *California*

Since 2022, the insurance market crisis has forced **seven of the top 12 insurance companies to restrict access to new policies or exit out** of the California market entirely.

- ***California's outdated insurance framework*** is 35 years old, too slow to respond to rapidly evolving conditions, and not equipped to handle today's climate and economic realities.
- ***Extreme weather***, including catastrophic wildfires and flooding, is causing tens of billions of dollars in losses to communities across the state – substantially increasing the risk and cost of providing insurance.
- ***Inflation and supply chain pressures*** are driving up the costs of home and auto repairs and replacements.

California's insurers paid out **more than \$1.13 in claims and expenses for every \$1.00 in premiums from 2012 - 2022.**



How to Fix the Insurance Coverage Crisis

Modernize **California's** outdated insurance framework to reflect today's realities

Solutions to improve insurance “availability”

- **Streamline the rate review process**
- **Implement proven, catastrophe risk modeling**
- **Include the use of reinsurance in ratemaking**
- **Reform the California FAIR Plan to prevent insolvency**

Solutions to improve insurance “affordability”

- **Expand community-wide wildfire mitigation**



How to Fix the Insurance Coverage Crisis

Modernize **California's** outdated insurance framework to reflect today's realities

■ Streamline the rate review process

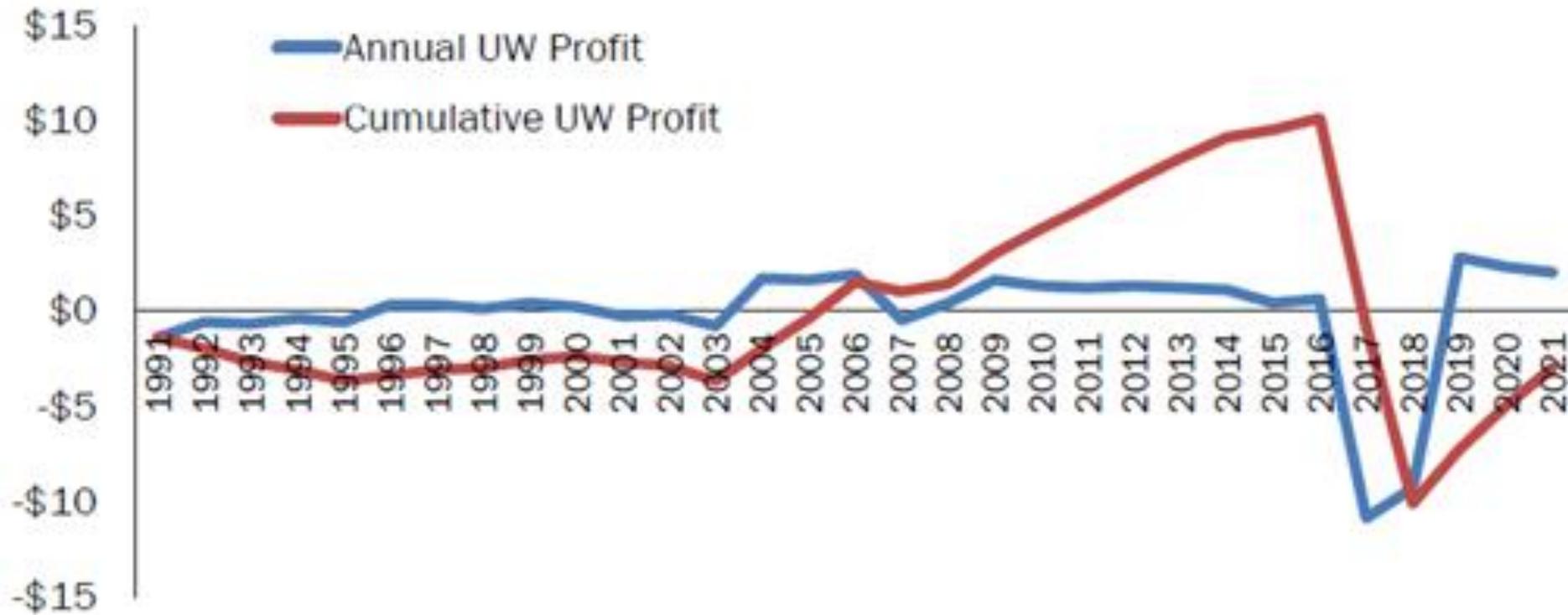
The rate review process is currently delayed up to a year or more – leaving insurers collecting premiums that do not adequately cover the costs of providing coverage.

We must expedite the review process by enforcing statutory timeframes to ensure there are sufficient resources to cover consumer claims.



Significant Losses

Industry-wide underwriting (UW) profit in California Homeowners line (\$ billions), since 1991



\$3.1 billion
cumulative 'HO'
underwriting loss

Source: Milliman (2023) and RAND (2018)



Significant Losses

Industry-wide underwriting (UW) profit in California for all lines, last decade

	California Underwriting Profit/Loss (Percent of Earned Premiums)										10-Yr Avg
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Private Passenger Auto Liability	(6.8)	(6.0)	(3.7)	(10.4)	(17.5)	(11.1)	(4.9)	(2.3)	7.8	1.3	(5.4)
Private Passenger Auto Physical	6.0	3.9	3.5	1.0	(0.3)	1.3	5.1	4.9	13.5	(4.6)	3.4
Private Passenger Auto Total	(1.3)	(1.8)	(0.7)	(5.4)	(10.0)	(5.7)	(0.7)	0.8	10.3	(1.3)	(1.6)
Commercial Auto Liability	(9.3)	(9.9)	(13.6)	(18.4)	(25.7)	(22.9)	(18.5)	(21.7)	(18.9)	(12.9)	(17.2)
Commercial Auto Physical	(4.4)	(8.6)	1.4	(4.1)	(1.2)	(4.4)	3.2	6.7	14.1	8.0	1.0
Commercial Auto Total	(8.2)	(9.6)	(10.3)	(15.2)	(20.2)	(18.9)	(13.8)	(15.9)	(12.2)	(8.7)	(13.3)
Homeowners Multiple Peril	19.7	17.6	15.4	3.3	7.5	(155.5)	(124.9)	35.4	27.4	22.7	(13.1)
Farmowners Multiple Peril	15.2	22.6	19.9	14.4	17.6	(181.4)	(15.1)	7.9	(45.7)	28.6	(11.6)
Commercial Multiple Peril	10.0	11.5	7.1	4.7	(2.2)	(18.7)	(21.8)	3.0	(3.4)	4.1	(0.5)
Fire	44.0	39.8	28.0	23.0	25.9	(33.2)	(86.9)	35.1	(0.5)	28.5	10.4
Allied Lines	21.9	44.2	16.9	(7.7)	25.0	(18.5)	12.5	14.3	(7.1)	10.4	11.2
Inland Marine	18.5	38.3	26.4	19.1	24.5	18.3	19.6	22.5	8.3	18.2	21.4
Medical Professional Liability	7.4	5.8	(8.6)	1.4	(3.8)	(5.6)	6.0	(26.9)	(12.7)	(11.1)	(4.8)
Other Liability	(9.7)	(6.3)	(7.4)	(11.9)	(16.5)	(25.4)	(19.9)	(13.1)	(21.2)	(6.4)	(13.8)
Products Liability	(95.3)	(144.5)	(110.2)	(35.6)	(34.3)	(24.4)	(76.5)	(9.6)	(8.5)	(13.3)	(55.2)
Workers Compensation	(18.3)	(15.5)	(5.3)	2.6	8.5	12.0	19.7	19.4	16.2	8.6	4.8
Mortgage Guaranty	(150.5)	17.3	59.2	66.9	66.5	69.6	81.2	71.0	31.7	72.0	38.5
Financial Guaranty	(38.9)	1.9	68.3	67.9	47.4	(15.8)	106.9	149.6	199.7	(7.4)	58.0
Accident and Health	(14.8)	(25.7)	(12.7)	(9.6)	(27.6)	(22.6)	(8.0)	(19.6)	(22.9)	(5.4)	(16.9)
Warranty	2.2	16.0	17.3	9.6	21.9	6.1	(0.4)	6.3	18.5	21.6	11.9
All Other	34.7	38.7	52.9	38.7	42.0	34.5	41.0	40.3	34.0	45.7	40.3
Total All Lines	0.9	2.5	3.6	0.3	(0.3)	(20.4)	(12.9)	8.0	6.6	5.7	(0.6)

-0.6%
cumulative 'all lines'
underwriting loss

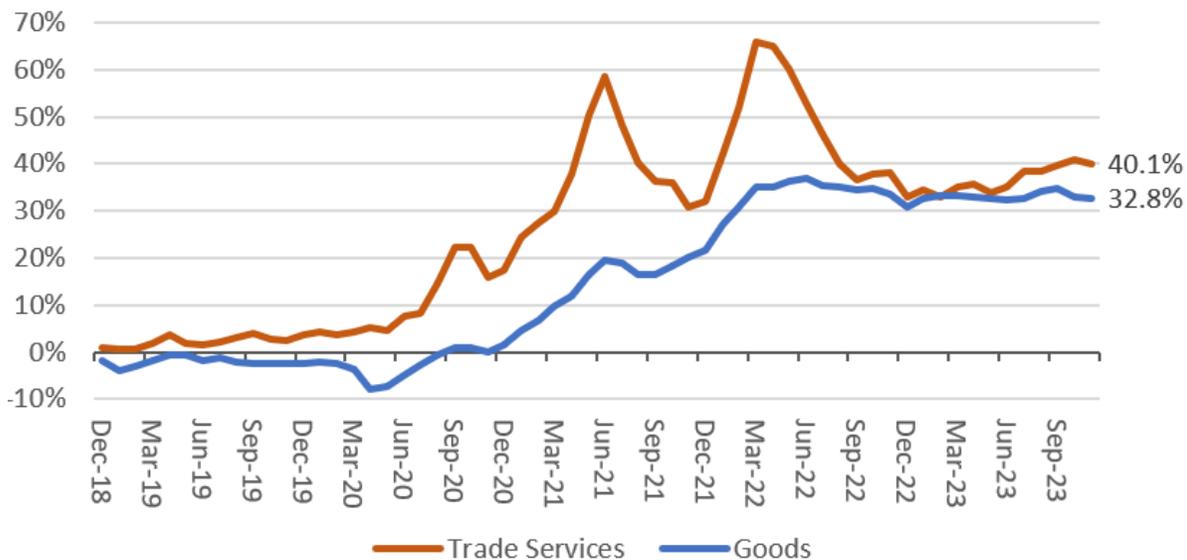
Source: NAIC Report on Profitability by Line by State in 2021, January 2023.



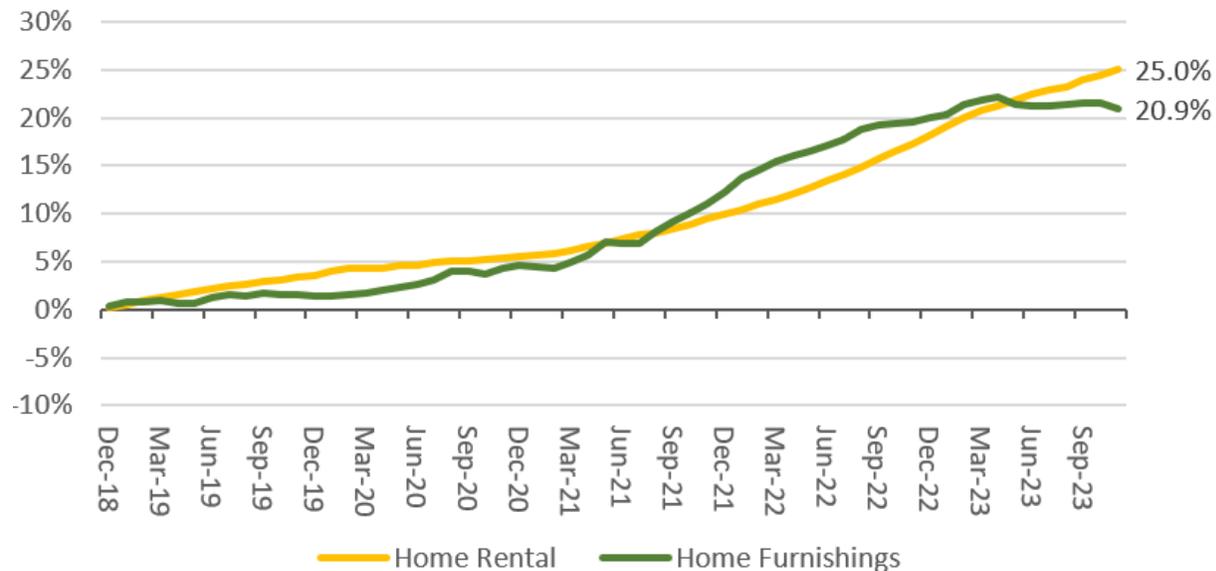
Increasing Inflation

Cost Inputs: Homeowners Insurance

Producer Price Index, Cumulative Percent Change over Five Years



Consumer Price Index, Cumulative Percent Change over Five Years



Source: U.S. Bureau of Labor Statistics
Monthly data Dec 2018 through Nov 2023, as of Jan 2, 2024.

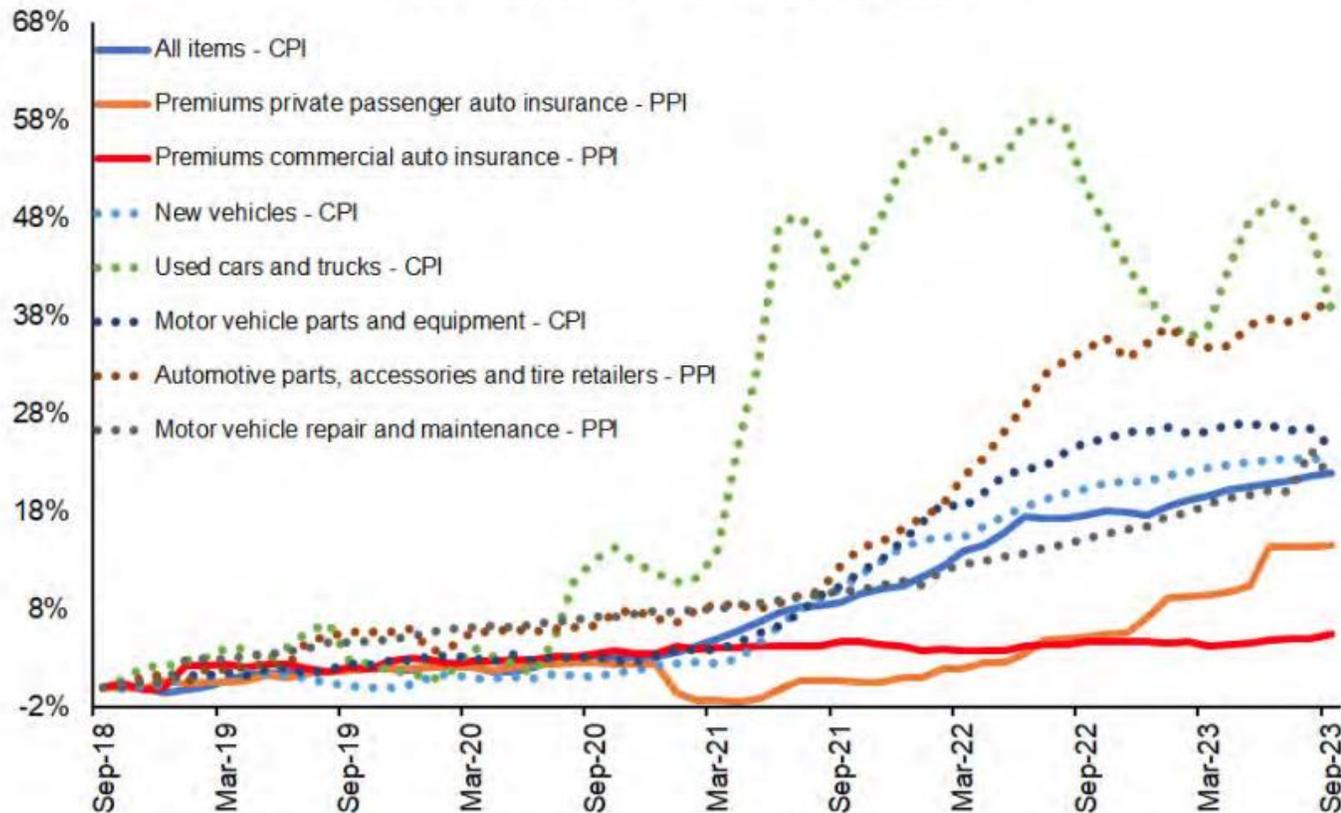
Producer Price Index: Inputs to Single Family Residential Construction, Trade Services ("Labor")
Producer Price Index: Inputs to Single Family Residential Construction, Goods

Consumer Price Index for All Urban Consumers: Rent of Shelter
Consumer Price Index for All Urban Consumers: Household Furnishings & Operations



Increasing Inflation

Cost Inputs: Auto Insurance



Source: U.S. Bureau of Labor Statistics

Vehicle Repair/Replacement Costs

- +38.8% used cars & trucks values (basis for total loss claims settlements)
- +24.6% motor vehicle parts & equipment
- +18.7% motor vehicle repair & maintenance costs

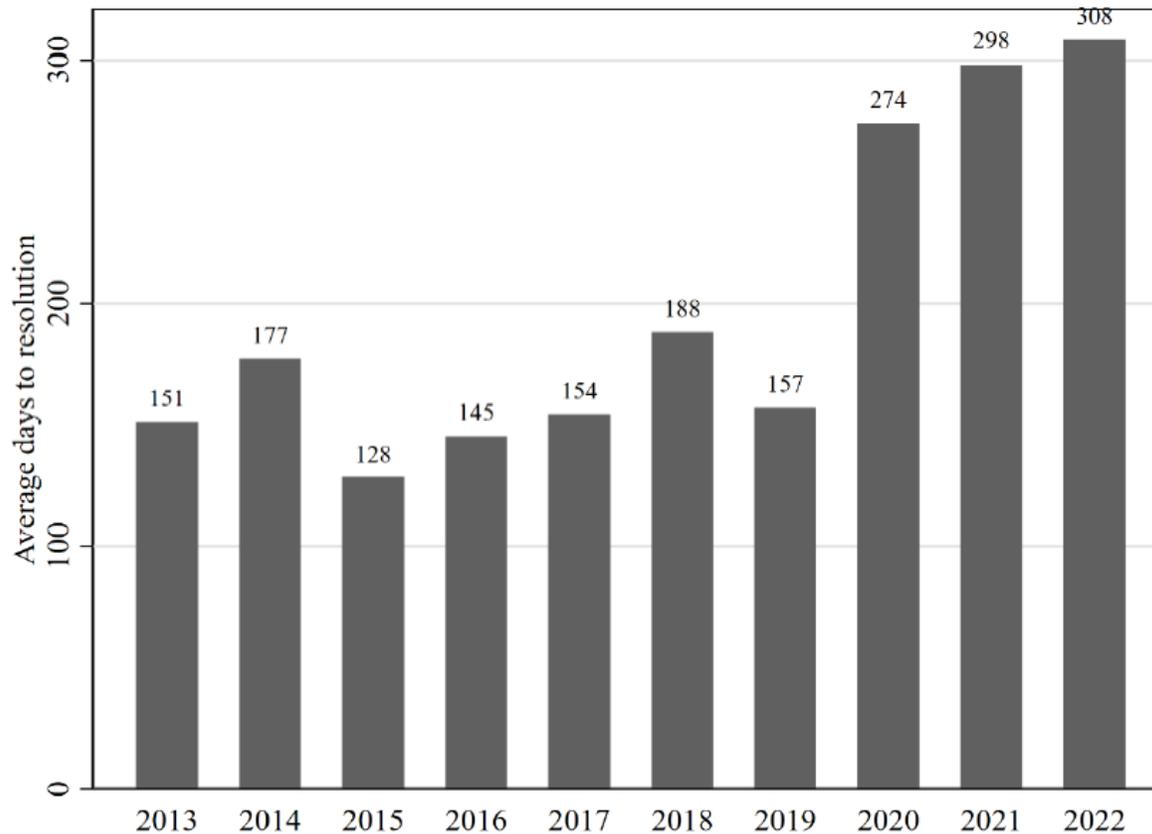
Injury-related Costs

- +4.1% hospital & related services
- +6.0% outpatient hospital costs
- +4.0% inpatient hospital services
- +10.0% medical equipment & supplies



Rate Filings

California Homeowners Insurance Rate-Filing Delays, 2013-2022



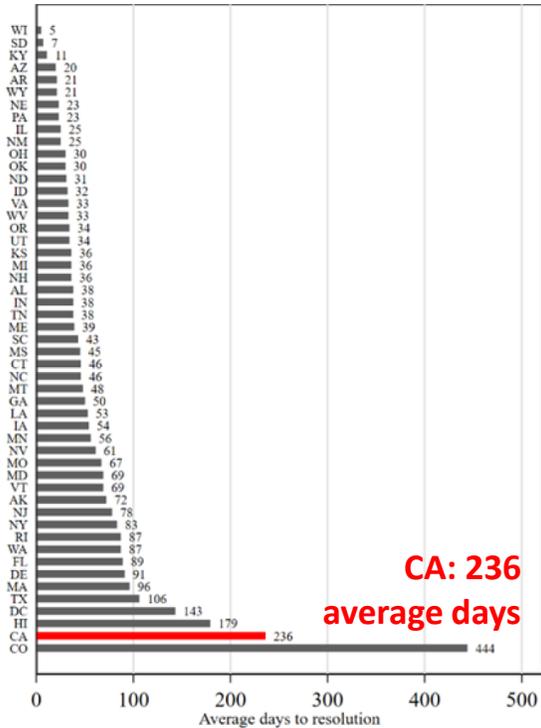
SOURCE: SERFF Rate Filing Data From S&P Capital



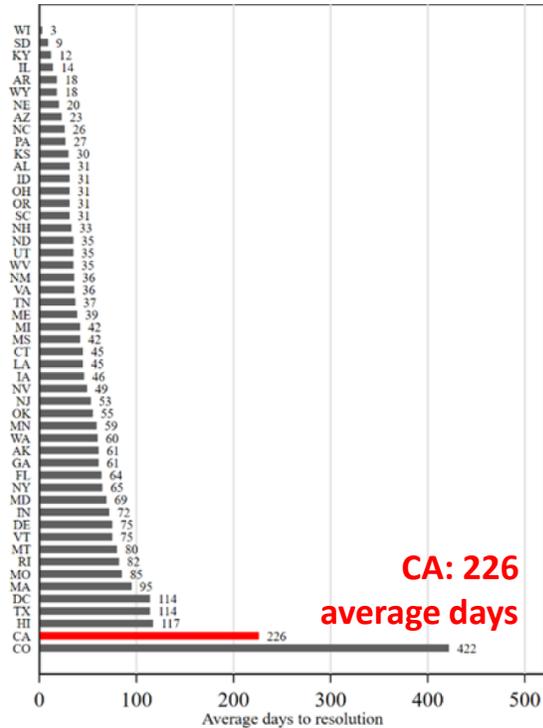
Rate Filings

Average Days to Resolution of Rate Filings by State, 2018-2022

Homeowners Insurance

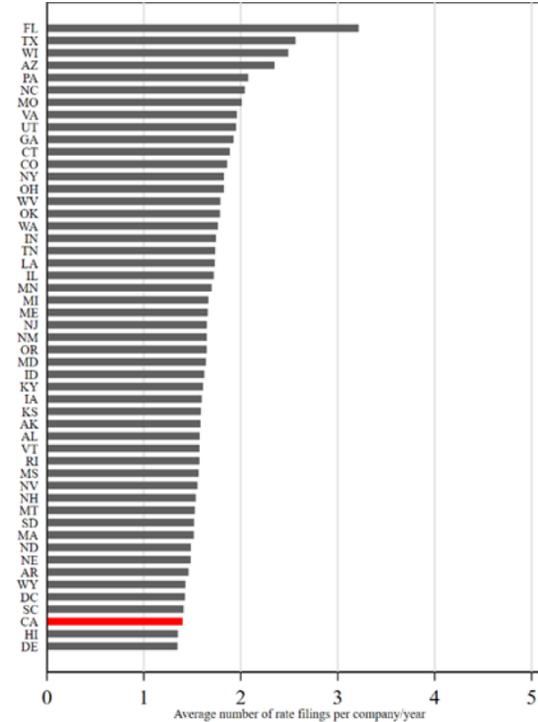


Auto Insurance

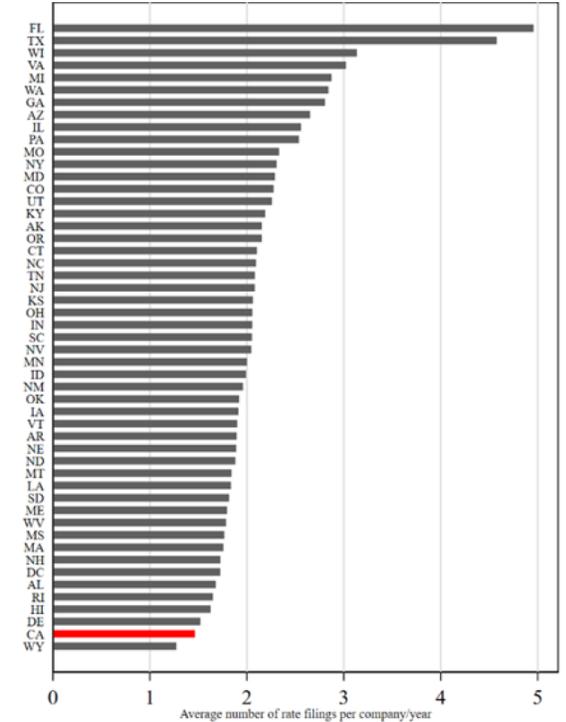


Average Number of Rate Filings Per-Company by State, 2018-2022

Homeowners Insurance



Auto Insurance



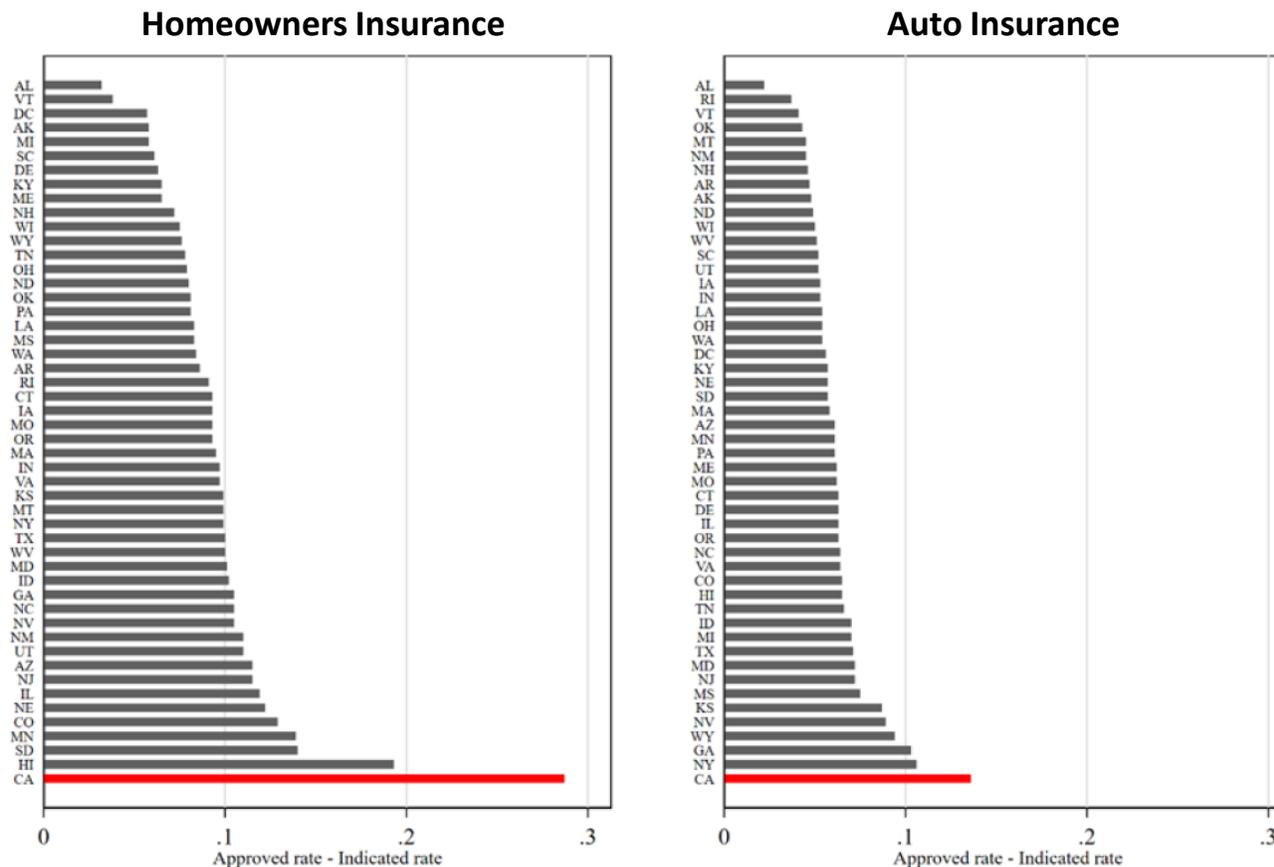
SOURCE: SERFF Rate Filing Data From S&P Capital

SOURCE: SERFF Rate Filing Data From S&P Capital



Rate Filings

Regulatory Rate Suppression by State, 2018-2022



SOURCE: SERFF Rate Filing Data From S&P Capital. Florida data are unavailable.



The Real Underlying “Insurability” Friction

Property insurance demand and costs are increasing; capital is decreasing

DEMAND vs SUPPLY

- Property insurance cost inputs increasing
- Rate suppression/delays
(1–2 year lag time for rate filings, approvals, and rolling into new policies)

= Premiums don't keep up w losses
(i.e., 'net underwriting losses')



CAPITAL PRESSURES:

- Exposures are escalating
(much faster than CPI and premiums)
- Net underwriting losses
- Unrealized investment losses
- Lower reserve releases
- Lack of profitability + volatility

= Contraction of current capital
= Deters new investment capital
(must pay higher cost for capital)



How to Fix the Insurance Coverage Crisis

Modernize **California's** outdated insurance framework to reflect today's realities

■ Implement proven, catastrophe risk modeling

California prohibits the use of advanced computer modeling that more accurately calculates ongoing and future risks of catastrophic events like fires and floods when determining insurance rates. Catastrophic risk modeling is used in almost every other state and enables providers to project consumer claims more accurately and better account for home and community mitigation efforts.

■ Include the use of reinsurance in ratemaking

Reinsurance is coverage insurance providers buy to ensure they can cover the costs of consumer claims. Allowing providers to account for reinsurance – a standard practice in all other 49 states – will help increase access to coverage for consumers.

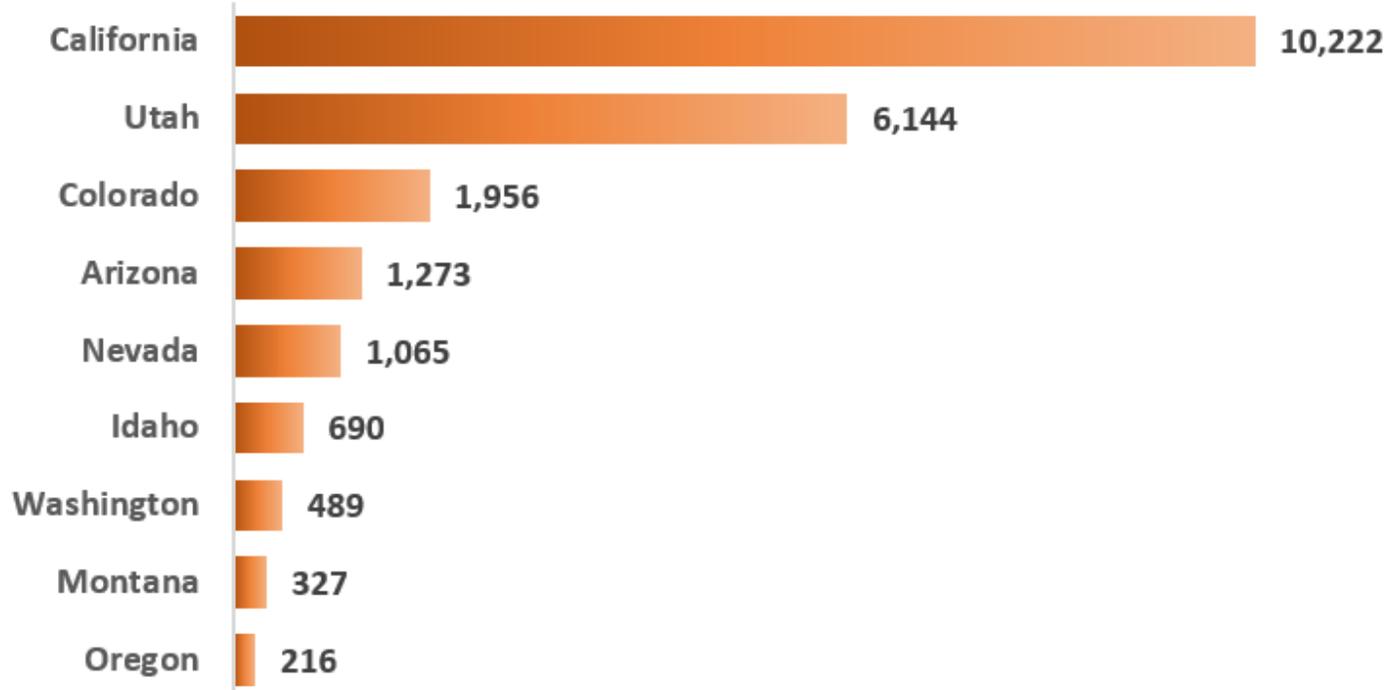


Growth in the WUI, in the last decade

Cities with the Most Building in High-Risk Zones for Wildfires

- 1,415 – El Dorado Hills, CA (#1)
- 855 – Lake Elsinore, CA (#3)
- 778 – San Bernardino, CA (#4)
- 591 – Murrieta, CA (#6)
- 572 – Menifee, CA (#7)
- 544 – Temecula, CA (#8)
- 465 – Beaumont, CA (#12)
- 361 – Fontana, CA (#14)
- 346 – Corona, CA (#16)
- 295 – Riverside, CA (#19)
- 282 – San Jacinto, CA (#22)
- 193 – Wildomar, CA (#29)
- 163 – Truckee, CA (#31)
- 159 – Rancho Mission Viejo, CA (#32)
- 136 – Redding, CA (#34)
- 136 – Santa Clarita, CA (#35)
- 134 – Folsom, CA (#36)
- 129 – Grass Valley, CA (#39)
- 108 – Moreno Valley, CA (#44)

Number of New Home Builds in High-Risk Zones for Wildfires, by State



Source: APCA, via Cape Analytics and HazardHub
<https://content.capeanalytics.com/the-wildfire-west-lp>



Larger and Costlier Wildfires

Global Top 10 Costliest Wildland Fires

(Insured Losses in \$ millions, in 2022 dollars)

1. **\$11,800** 2018 Camp
2. **\$10,500** 2017 Tubbs
3. **\$5,000** 2018 Woolsey
4. **\$3,700** 1991 Tunnel
5. **\$3,600** 2017 Atlas
6. \$3,500 2016 Horse Creek (Canada)
7. **\$3,400** 2020 Glass
8. **\$2,900** 2020 CZU Lightning Complex
9. **\$2,700** 2017 Thomas
10. \$2,700 2021 Marshal (Colorado)

Sources, Aon, Triple-I, RMIIA

Data through 2022 (2023 wildfires in Maui and Canada not included)

(**Bold** emphasis indicates California wildfires)

California Top 5 Largest Wildland Fires

(by acres burned, in thousands)

1. 1,032 2020 August Complex
2. 963 2021 Dixie
3. 459 2018 Mendocino Complex
4. 396 2020 SCU Lightning Complex
5. 378 2020 Creek

Source: CA Dept of Forestry and Fire Protection





Global Costliest Insured Wildland Fires *Utility-involved ignitions since 2017*



Rank	Insured Losses	Event	Location
1	\$11.8 B	2018 Camp 18,800 structures	California
2	\$10.5 B	2017 Tubbs 5,600 structures	California
3	\$5.0 B	2018 Woolsey 1,600 structures	California
5	\$3.6 B	2017 Atlas 700 structures	California
9	\$2.7 B	2017 Thomas 1,000 structures	California
10	\$2.7 B	2021 Marshall 1,000 structures	Colorado

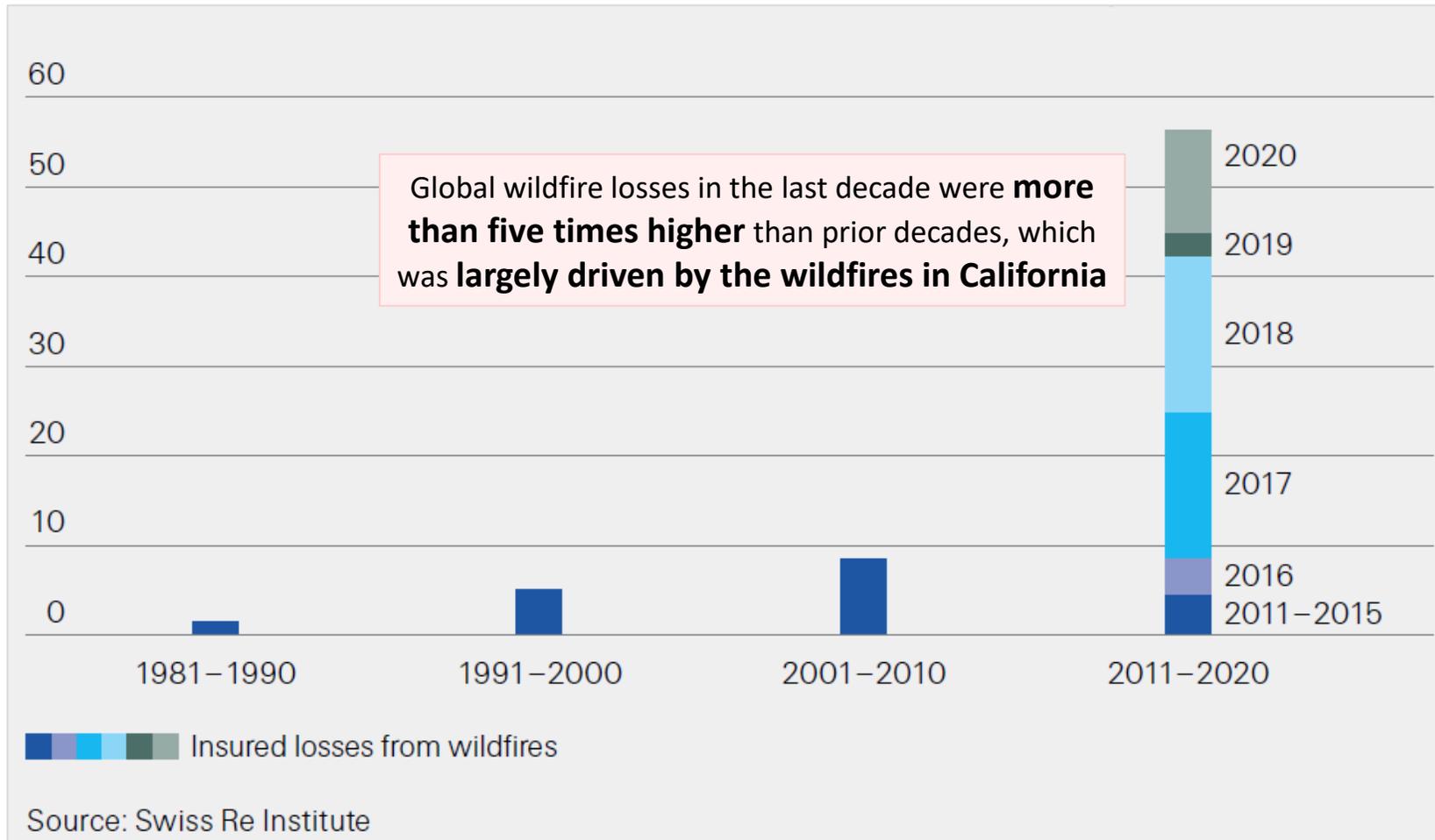
(Above losses adjusted to 2022 dollars)

TBD	\$3-4 B <i>estimate</i>	2023 Maui 2,200 structures	Maui
--	\$1-2 B <i>estimate</i>	2020 Labor Day 4,000 structures	Oregon



Increasing Losses from Secondary Perils: Wildfires

Global insured losses from wildfires (in USD billion, at 2020 prices)





How to Fix the Insurance Coverage Crisis

Modernize **California's** outdated insurance framework to reflect today's realities

■ Reform the California FAIR Plan to prevent insolvency

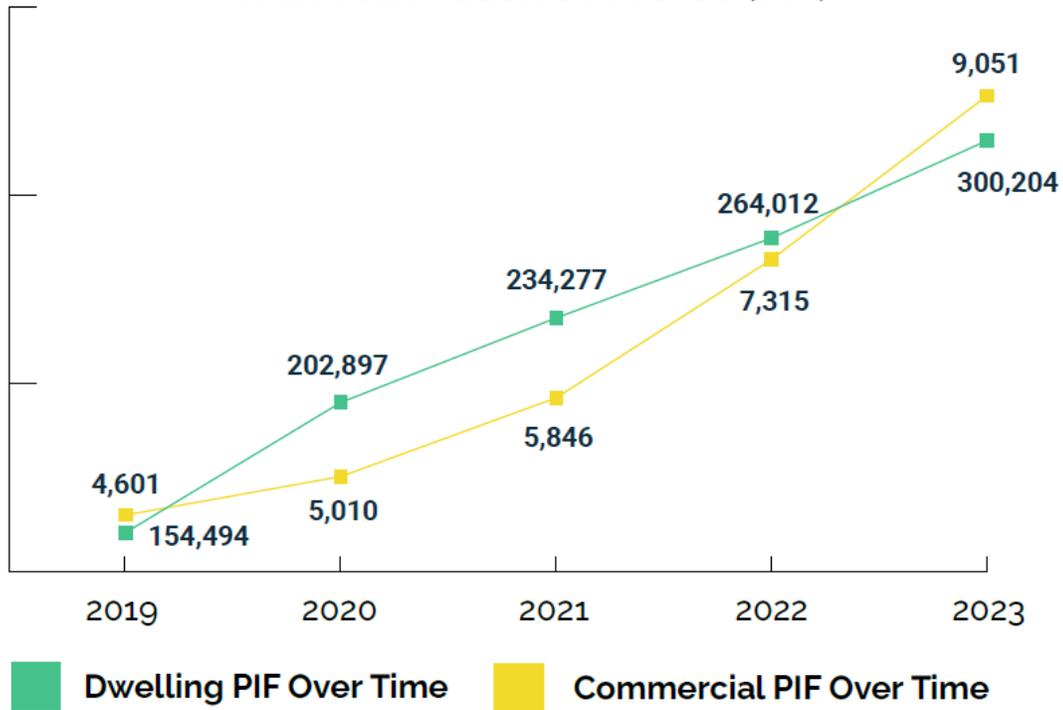
California's FAIR Plan, the state's insurer of last resort, is just one catastrophe away from insolvency due to inadequate assets and financial safeguards. Reforms are needed to allow for emergency assessments of policyholders and the ability to issue bonds to help cover consumer claims in the event of catastrophic damages or if the state's plan becomes insolvent.



The CA FAIR Plan

Growing Pool and High Concentration of Risk

FAIR Plan Policies in Force (PIF)



The FAIR Plan’s **risk exposure** has grown **+480%** from \$50B in 2018 to now **\$290B**, as of Oct 2023.

(Coverage now available for farms and wineries, and coverage limits increased to \$3M for dwellings and \$20M for commercial properties per location.)

FAIR Plan has **significantly higher concentration of high-risk properties** than voluntary insurers.





How to Fix the Insurance Coverage Crisis

Modernize **California's** outdated insurance framework to reflect today's realities

■ **Expand community-wide wildfire mitigation**

Proactive wildfire mitigation like home hardening and establishing defensible space that prevents ember ignition around dwellings must be undertaken at the community level to effectively reduce the risks of wildfires spiraling out of control. Policymakers must expand comprehensive community-wide wildfire mitigation in addition to a home-by-home approach.



Bringing the Loss Curve Down Through Mitigation



Source: Insurance Institute for Business & Home Safety (IBHS)

WILDFIRE RISK & RECONSTRUCTION COSTS ARE SOARING TAKE ACTION NOW TO PREPARE AND MITIGATE YOUR PROPERTY

NATIONAL INTERAGENCY FIRE CENTER FORECASTS
above normal significant fire potential
FOR WESTERN AND SOUTHWESTERN STATES IN 2022

EMBER RESISTANT CHECKUP

- ✓ **CREATE DEFENSIBLE SPACE** Maintain defensible space around your structure, including:
 - 1 Removing dead vegetation
 - 2 Trimming branches overhanging roof
 - 3 Removing combustible materials (vegetative and structural) in the 0-5 FT home ignition zone
 - 4 Break the continuity of fuels around your home in both vertical and horizontal directions
- ✓ **MAINTAIN ROOF & GUTTERS** Routinely remove debris from the roof and gutters, including around skylights. Debris (including leaves and pine needles from nearby and overhanging trees) will accumulate on roofs and in gutters and can be ignited by wind-blown embers.
- ✓ **SEAL GARAGE DOOR** Openings, such as garage doors, can be an easy entry point for wildfire embers. Weather seal the perimeter of garage doors to reduce ember entry.
- ✓ **MAINTAIN DECKS** Remove debris and vegetation from your deck. Do not store wood on or underneath your deck. Move combustibles, like patio umbrellas, furniture and grill supplies, inside when a fire threatens. For low elevated decks (<4ft), install (vertical) 1/8-inch mesh screening around the base.
- ✓ **PROTECT EAVES AND VENTS** Use 1/8-inch (or smaller) mesh screening over all vents.
- ✓ **REDUCE FENCE RISKS** Burning fencing can generate embers and cause direct flame contact to your home. Use noncombustible fences and gates. Regularly remove debris at the base of the fence.
- ✓ **TALK WITH NEIGHBORS** Wildfire preparedness is a community effort. Get neighbors involved, as their risk is your risk.





Financial Incentives for Resilience

- **Grants** – States or local communities can establish resilience grant programs to help property owners. Programs could include a cost-share match from the property owner or through a public-private partnership.
- **Low interest loans** – States or local communities can establish a revolving fund that helps provide loan interest loans for resilience projects. Alternatively, incorporate funding for mitigation into mortgage costs, to spread over 20-30 years (i.e., points or better rates) or through home equity lines of credit (HELOC).
- **Waive/reduce fees** – Communities can provide a rebate, waive, or reduce building permit fees or the cost of designation program inspections, for properties that achieve a qualified resilience designation, such as IBHS FORTIFIED or IBHS Wildfire Prepared Home.
- **Tax credits** – States or local communities can provide a variety of tax credits, such as income tax credits for costs to retrofit homes or businesses, sales tax credits for materials purchased to retrofit, or property tax credits for properties that achieve and/or maintain a resilience designation, such as IBHS FORTIFIED or Wildfire Prepared Home.
- **Insurance Incentives** – States can encourage insurers to provide premium credits for resilience actions.





Reduce Exposure and Future Losses



148 Recommendations

Unanimous consensus from nonpartisan commission. Commission comprised of 50 members representing diverse geographies and backgrounds.

<https://www.usda.gov/topics/disaster-resource-center/wildland-fire/commission>



Thank You!

Karen Collins
Vice President
Property & Environmental
Karen.Collins@APCI.org



APCIA Research and Thought Leadership



Factors Influencing Insurance Availability and Affordability for Consumers

December 2023




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December 2023 - Provides a financial overview of insurance markets, the cost drivers of increasing losses, solutions to market disruptions, recent regulatory concerns, and other opportunities and challenges.

Link:
<https://www.apci.org/attachment/static/9245/>



Auto Insurance: The Uncertain Road Ahead

June 2023



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June 2023 - Highlights the top inflation trends, riskier driving behavior, and financial impacts resulting in significant pressure on auto insurance markets that are impacting insurers and consumers.

Press release (and link):
<https://www.apci.org/media/news-releases/release/76883/>



Hard Market Cycle Arrives
Inflation, Natural Disasters, and More Straining Property Insurance Markets

March 2023



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March 2023 - Highlights the top inflation trends, 2022 natural disaster losses and financial impacts resulting in significant pressure on property insurance markets that are impacting insurers, reinsurers and consumers.

Press release (and link):
<https://www.apci.org/media/news-releases/release/75202/>

Wildfire Risk in the Wild, Wild, West
A three-part series focused on identifying the challenges and opportunities affecting consumers and property insurance markets in wildfire-exposed states.



INCREASING Wildfire Risk in the Wild, Wild West
The evolving conditions resulting in growing exposure in the wildland-urban interface

Part I | November 2022



Copyright © 2022 by the American Property Casualty Insurance Association

November 2022 - A three-part white paper series that identifies the challenges and opportunities affecting consumers and property insurance markets specifically in wildfire-exposed states.

Press release (and link):
<https://www.apci.org/media/news-releases/release/73621/>



It's Not Just the Weather
The man-made crises roiling property insurance markets

August 2022



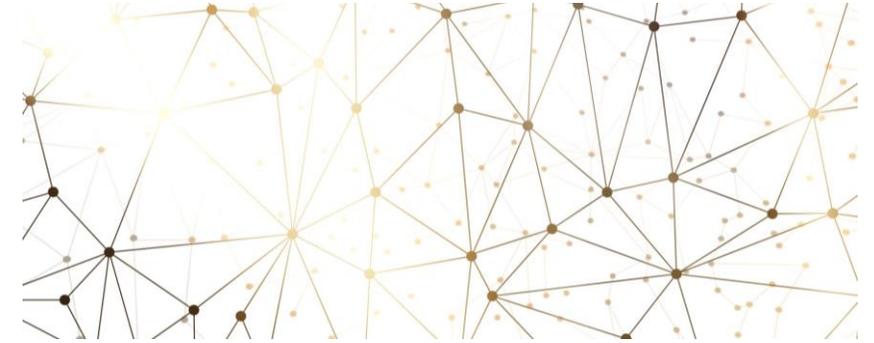


Copyright © 2022 by the American Property Casualty Insurance Association

August 2022 - Examines factors beyond weather that are increasing losses and resulting in market instability, with emphasis on 3 states (FL, LA, CA) experiencing the most market instability.

Press release (and link):
<https://www.apci.org/media/news-releases/release/72898/>

Wildfire Mitigation Advisory Committee Meeting 1/5/24



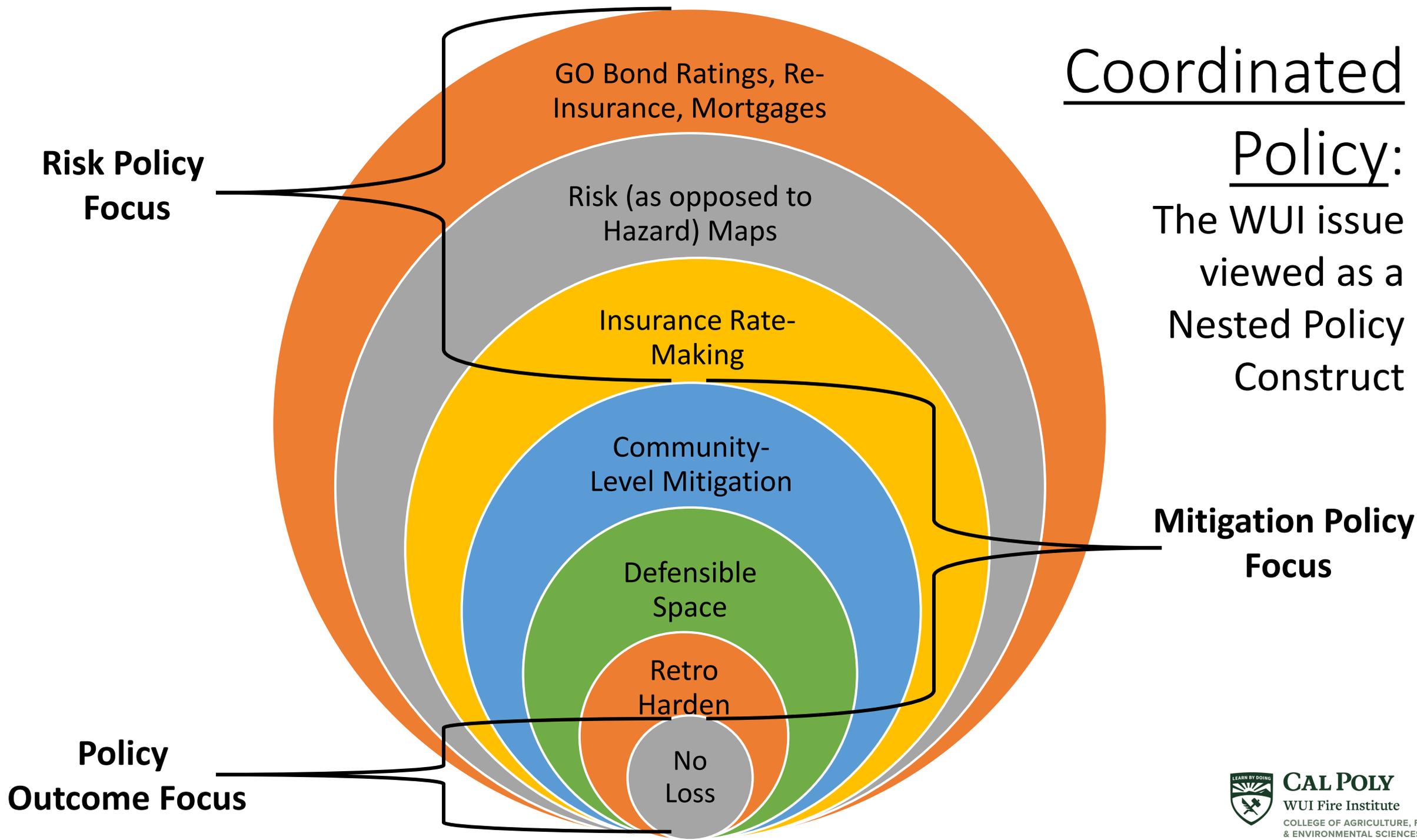
OVERVIEW OF FIRE PATHWAY DISRUPTION: DIRECT
COLLABORATION EFFORT AMONG THE MOORE
FOUNDATION, WFCA, CAL POLY, MILLIMAN, COLORADO
STATE UNIVERSITY.



CAL POLY

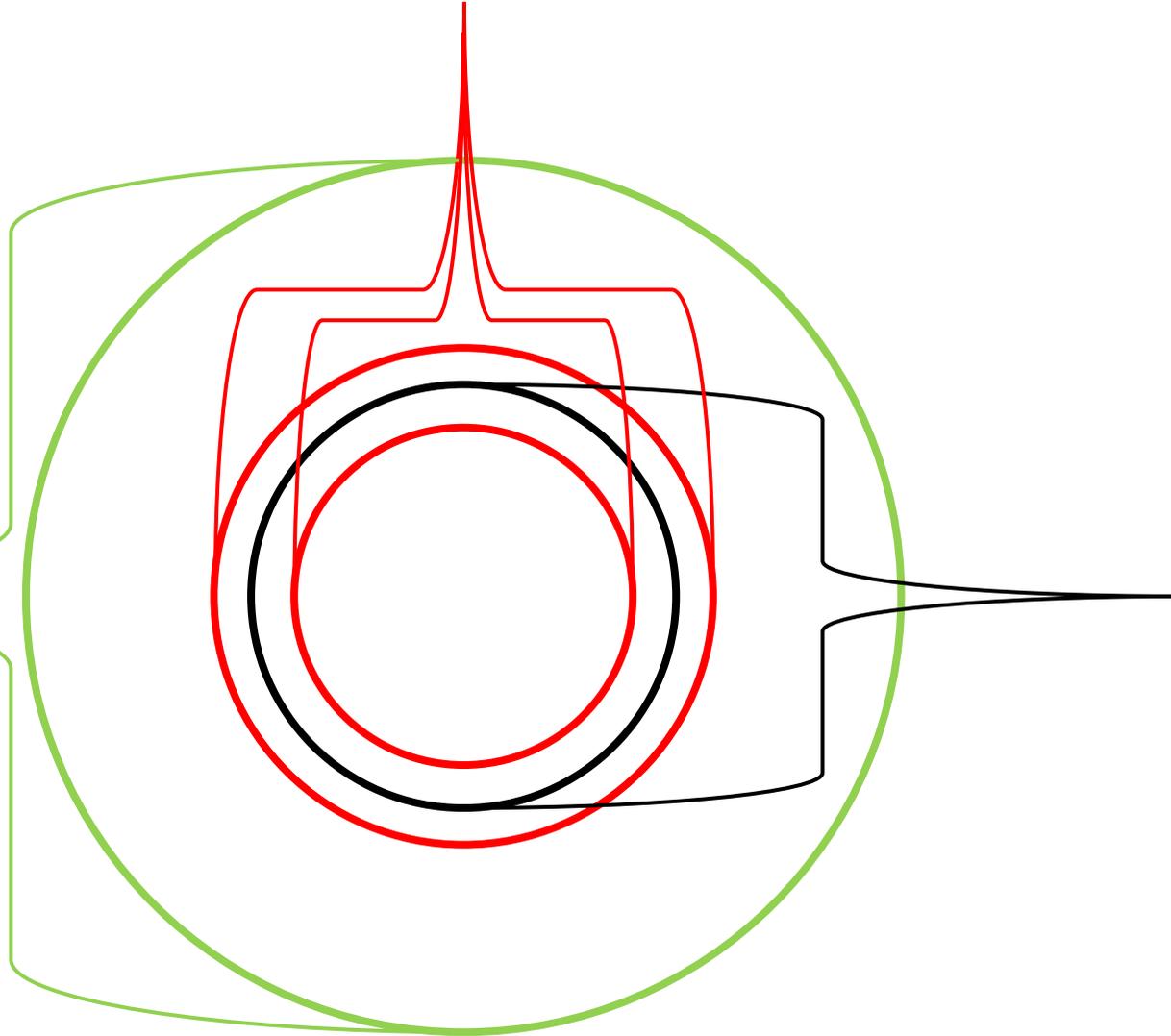
WUI Fire Institute

**COLLEGE OF AGRICULTURE, FOOD
& ENVIRONMENTAL SCIENCES**



“Interface” = band within 100’ of WUI Community boundary to 2nd layer of structures with SSD < 70’

“Most Probable Fire Pathway SOI” = 1/2 to 1/4 mile of interface in vegetation landscapes capable of carrying fire.



“WUI Community” = ≥ 100 structures where 50% or more have SSD < 70’

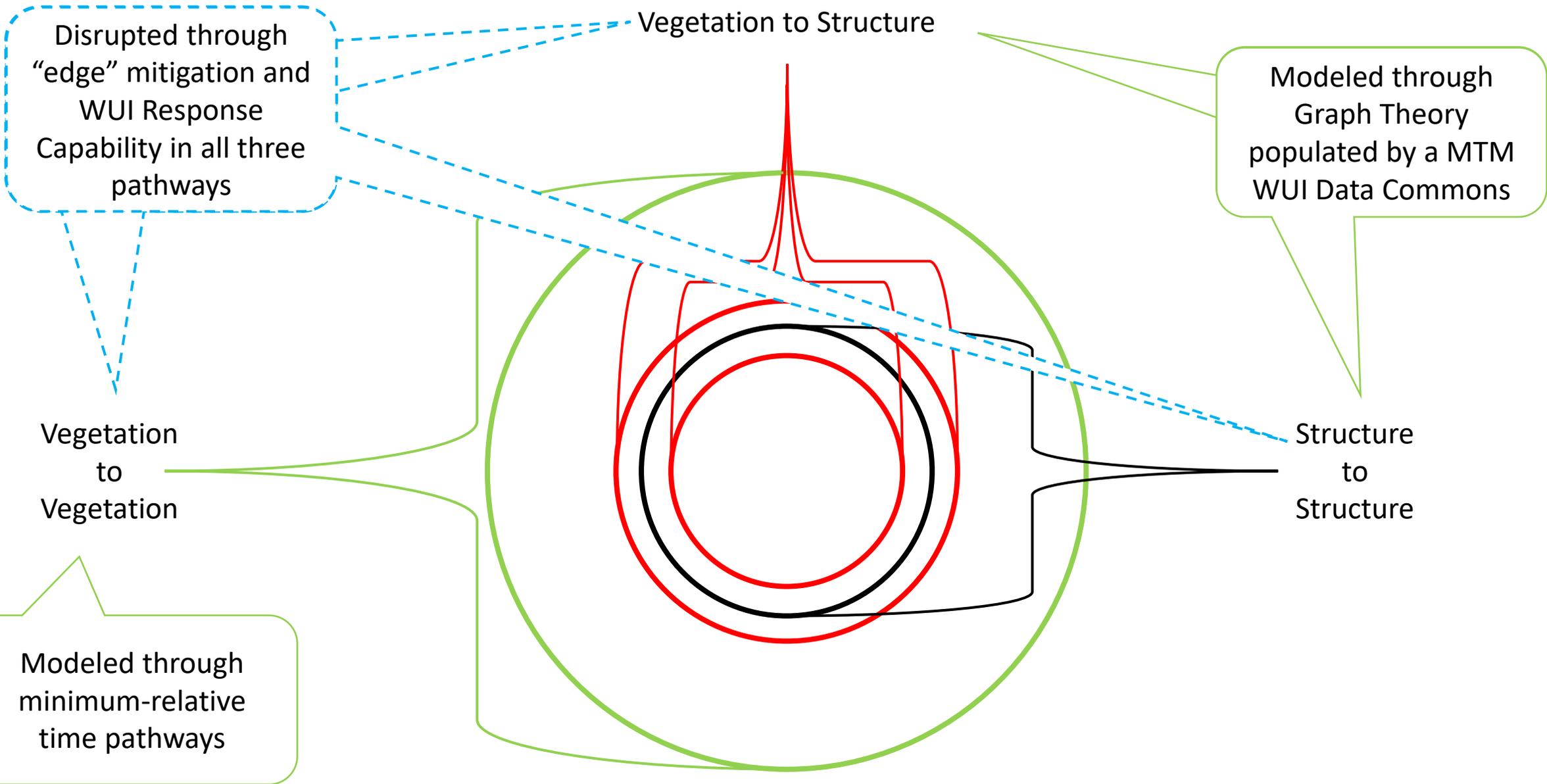
WUI Fire Pathway Taxonomy



CAL POLY

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WUI Fire Pathway Disruption



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Structure-to-Structure: Spread Modeling



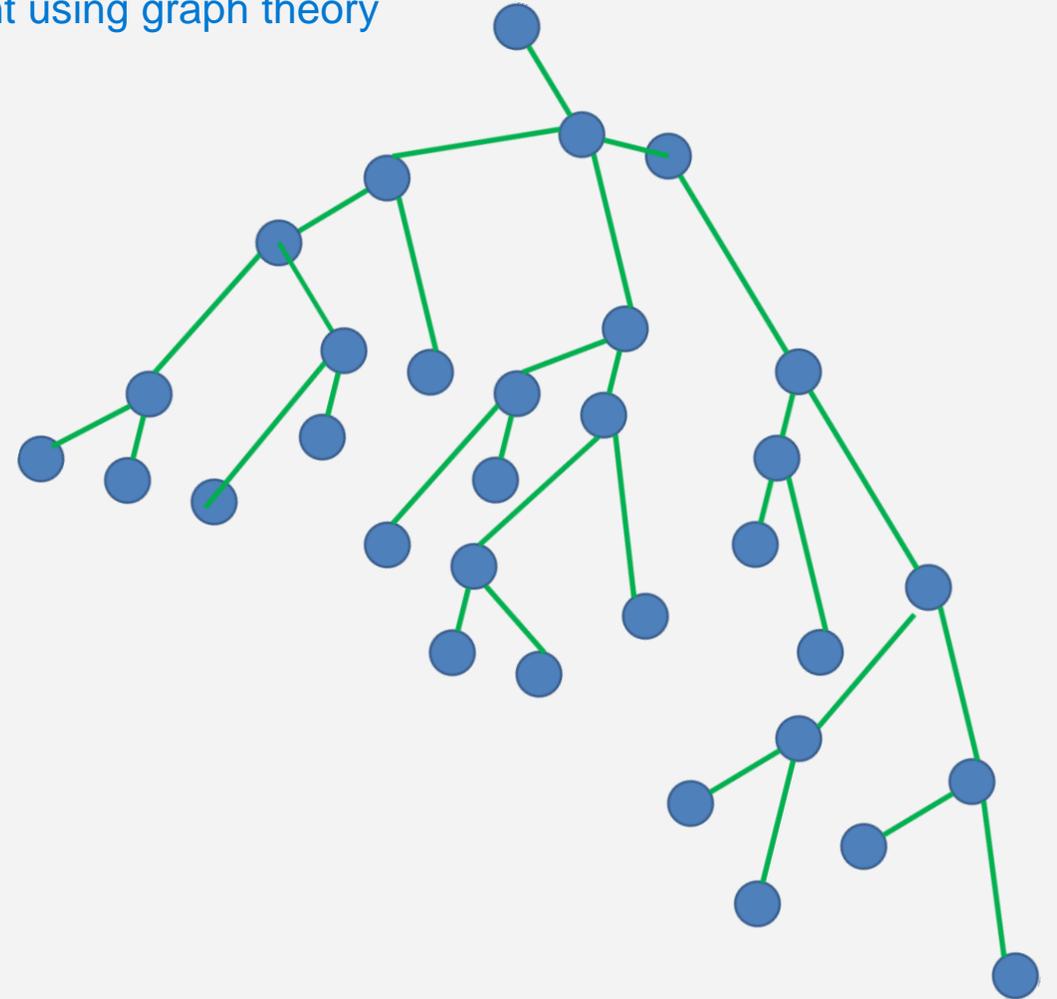
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Fire spread modeling in the built environment

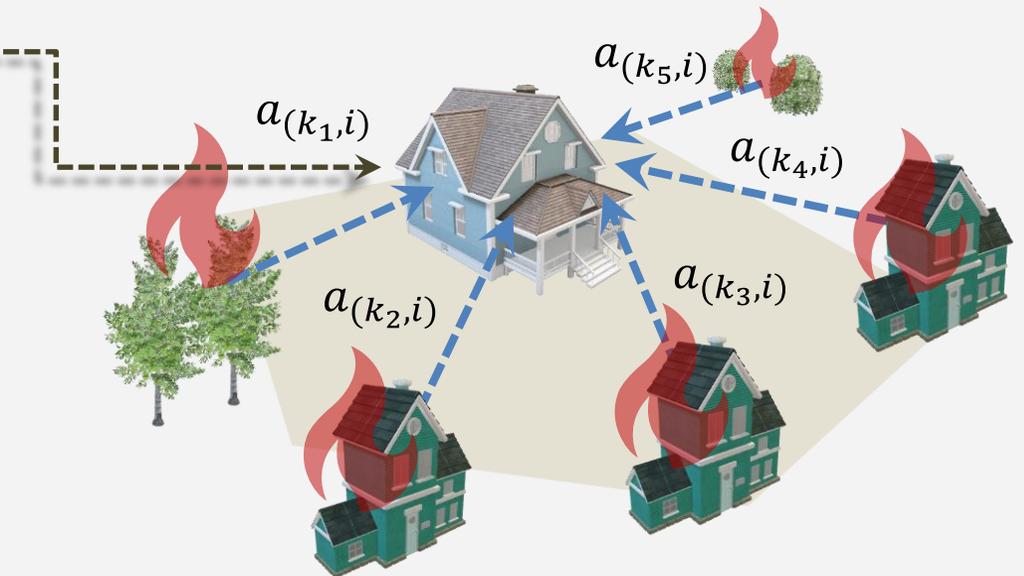
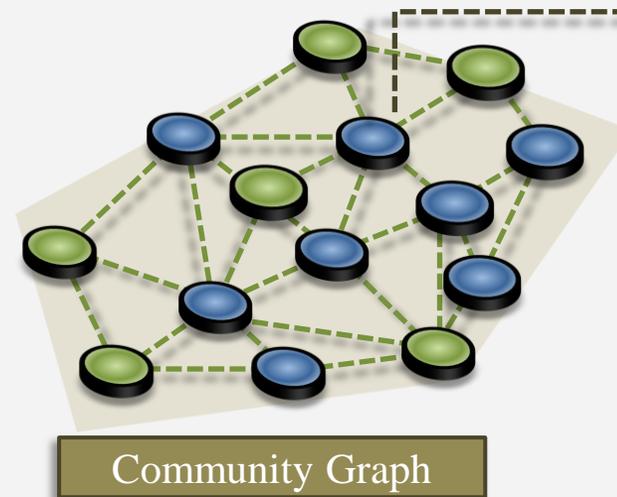
Understand structure to structure spread within the built environment using graph theory



Vulnerability – Relative Vulnerability

Relative Vulnerability calculated for building nodes from Community Graph

- The Vulnerability values calculated for individual structures are **relative** to each other.
- Structures with higher Relative Vulnerability are expected to have lower chances of Survival than structures with lower Vulnerability.



- Vulnerability of a building node evaluated as the cumulative impact of all its neighbors assuming they have been ignited

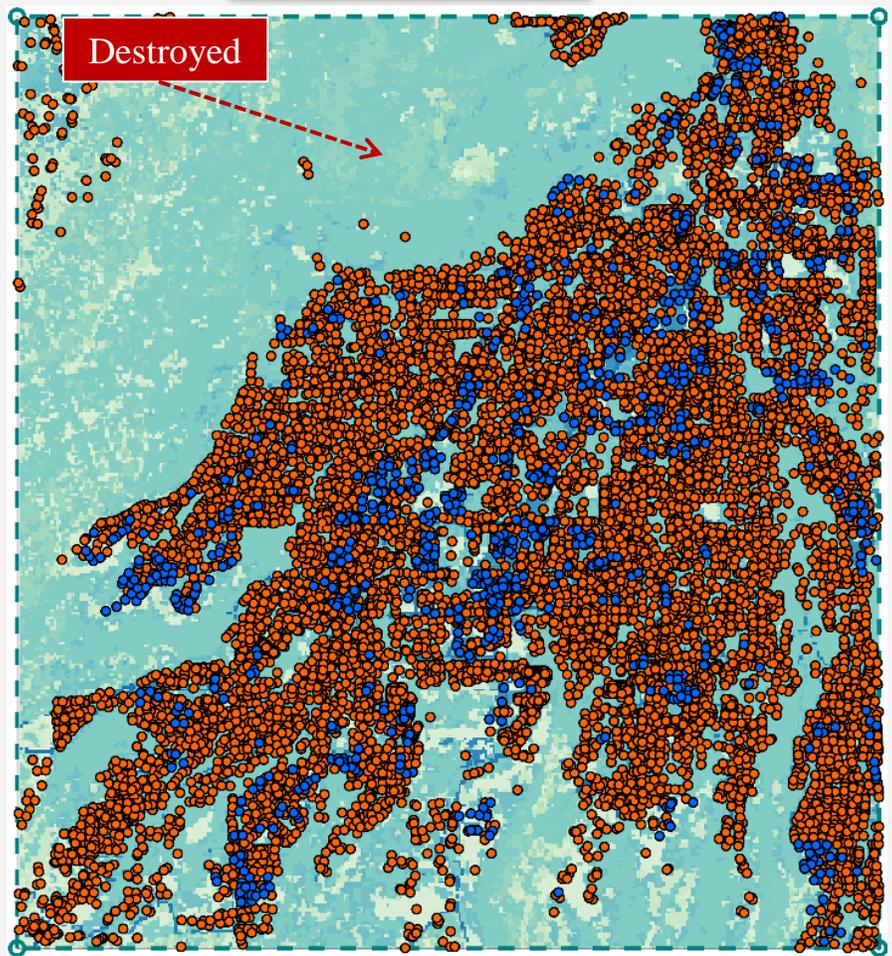
$$V^{(i)} = \frac{\sum_{k \in g(i)} a(k, i)}{n_{(i)}^g}$$

Probability of Ignition of node i when node k is ignited

No. of closest neighbors to node i

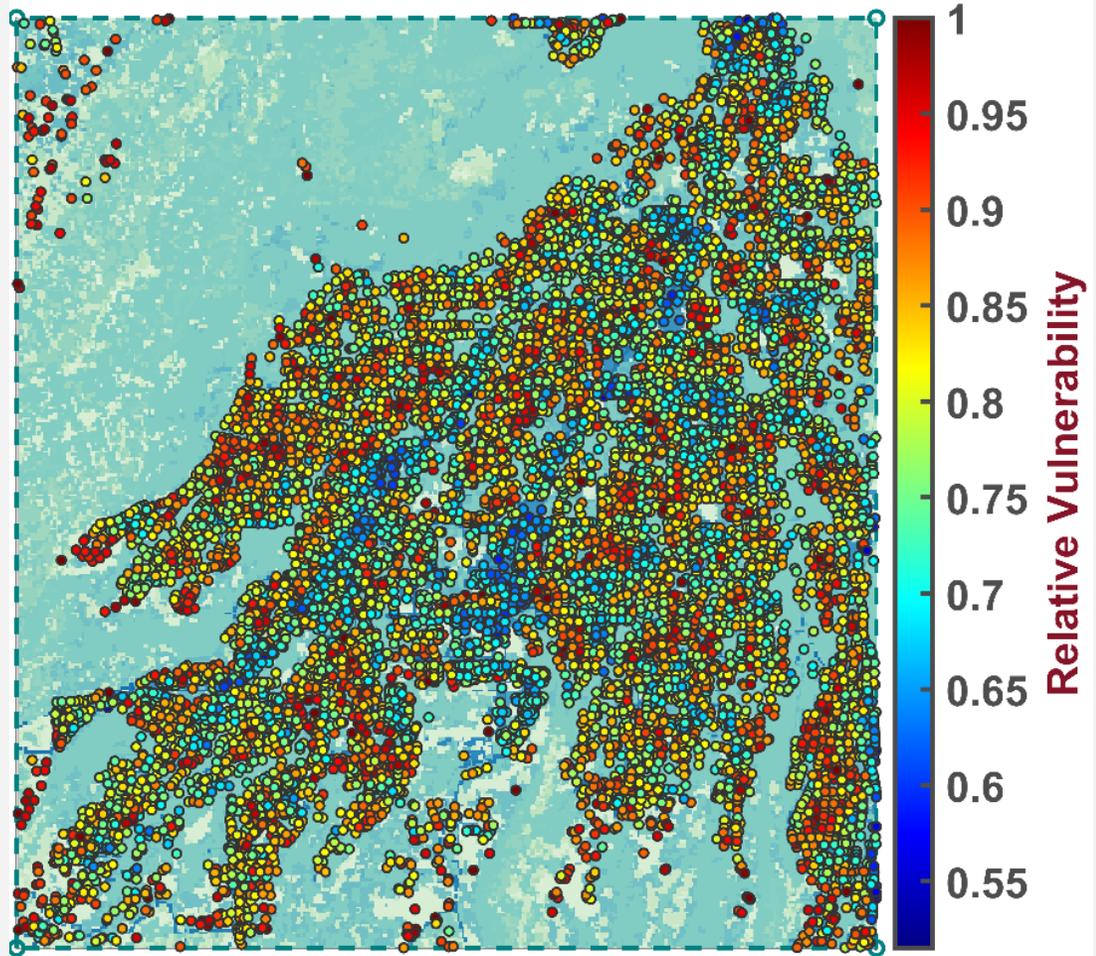
Damage Assessment – 2018 Camp Fire

Observed Damage



● Survived ● Destroyed

Relative Vulnerability



Vegetation to Structure: WUI Response Rating



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WUI Response Rating; Capability & Availability by Type - Simplified

Resource Categories & Type	Capability			Capacity		
	Vegetation to Vegetation	Vegetation to Structure	Structure to Structure	Vegetation to Vegetation	Vegetation to Structure	Structure to Structure
Rolling Stock	.5	1	1.5	2	4	6
Hand Crews	1.5	.7	0	6	2	0
Aircraft	3	2	0	1	0	0
Agency Aid Agreement Type Factor	Recognizes the (in)efficiencies of coordination among resource types when single, several, or numerous agencies are responding together.					

Vegetation to Vegetation: Minimum Time Travel Pathway Disruption Modeling



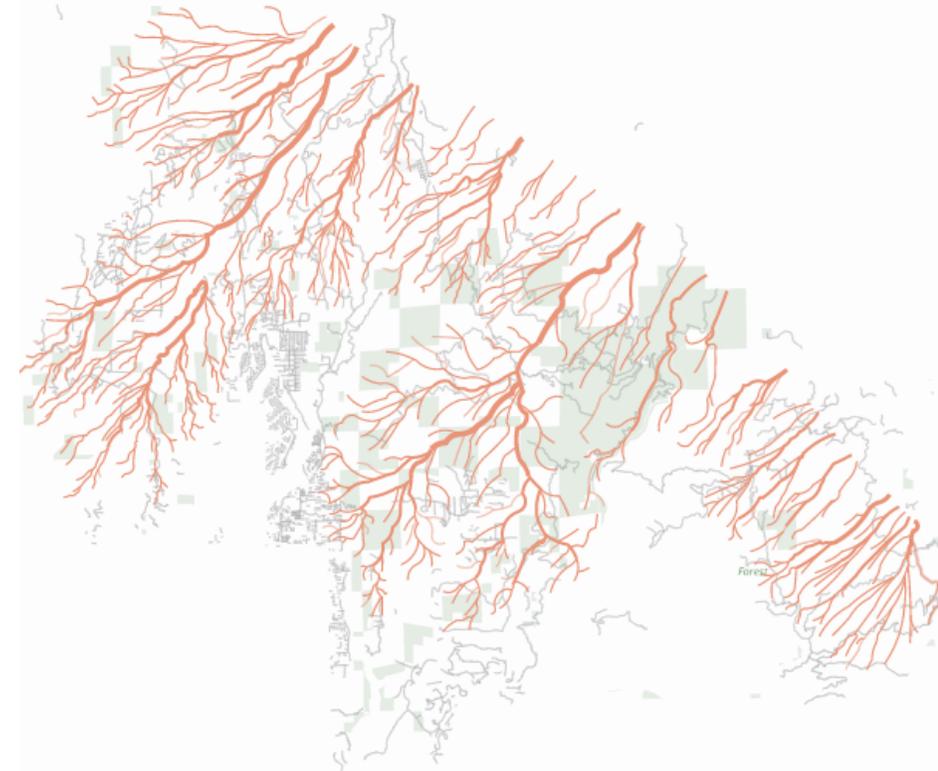
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Objective

- Propose the set of treatment polygons (“treatment plan”) that *best* interrupts fire spread along major pathways while staying within a defined acreage or cost.



Custom Optimization Workflow

Pathway Graph Creation

MTT linestrings are converted into a directed graph that can be traversed from root (ignition) to leaf (terminus). A score to be assigned to each pathway based on the total number of values at risk encountered along the pathway.

Calculate Suitability

Every raster cell is assigned a treatment suitability value according to custom suitability logic.

Identify Opportunities

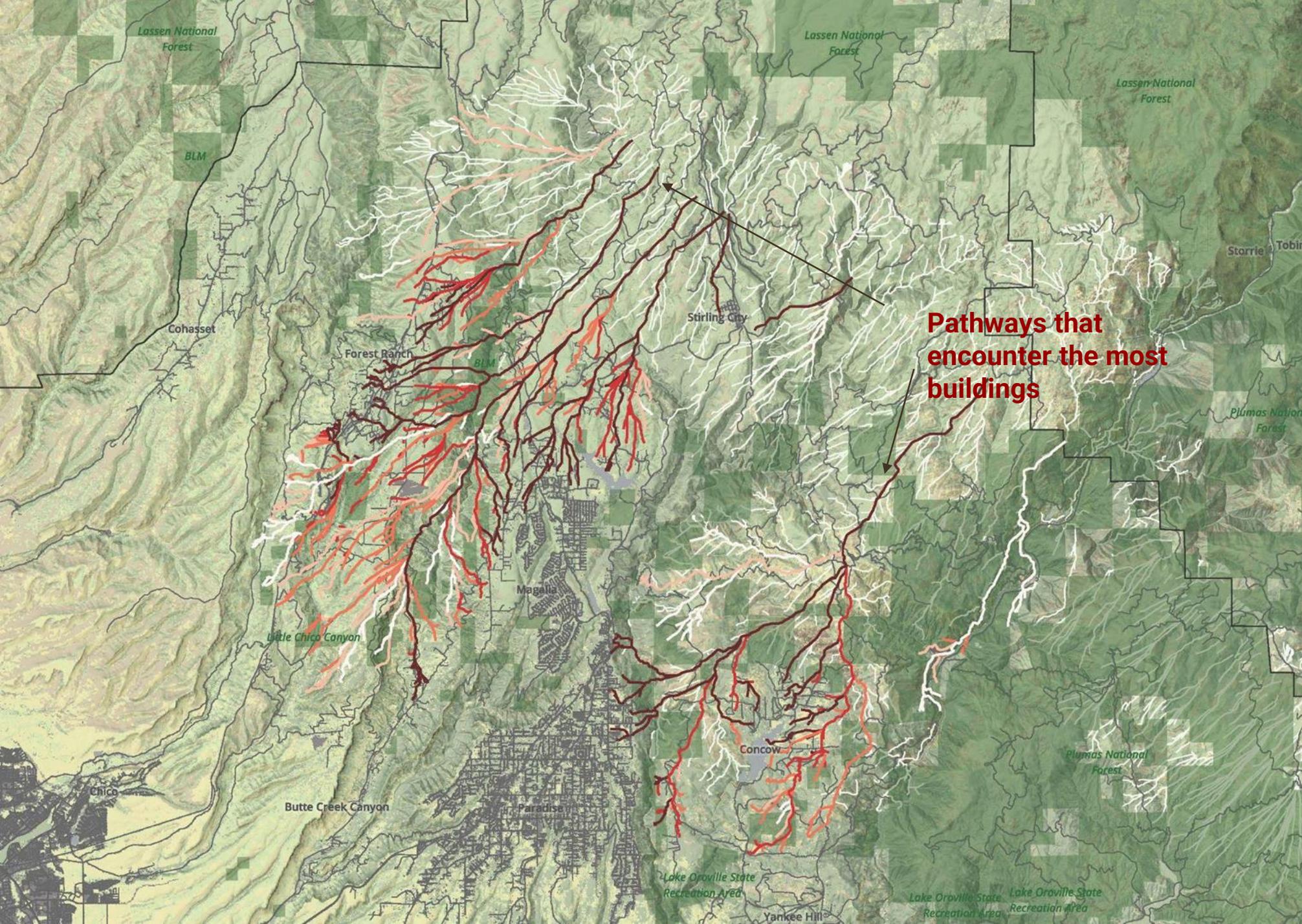
All possible treatment opportunities are identified as polygons along the pathways that lead into a community.

Optimize Opportunities

An optimization algorithm is used to identify the subset of treatment opportunities that maximize treatment value while staying within budget/acreage.

Re-Run Pathways

Pathway analysis is re-run to analyze the change in fire behavior due to the proposed treatments.



1. Construct Pathway Graph

1. Convert the short line segments (100-500m) output by MTT segments into a directed graph (using python).
1. Calculate the number of structures at the leaf node of each pathway.
1. Aggregate the value of each path on a traversal from lto leaf to ignition.

2. Treatment Suitability Calculation

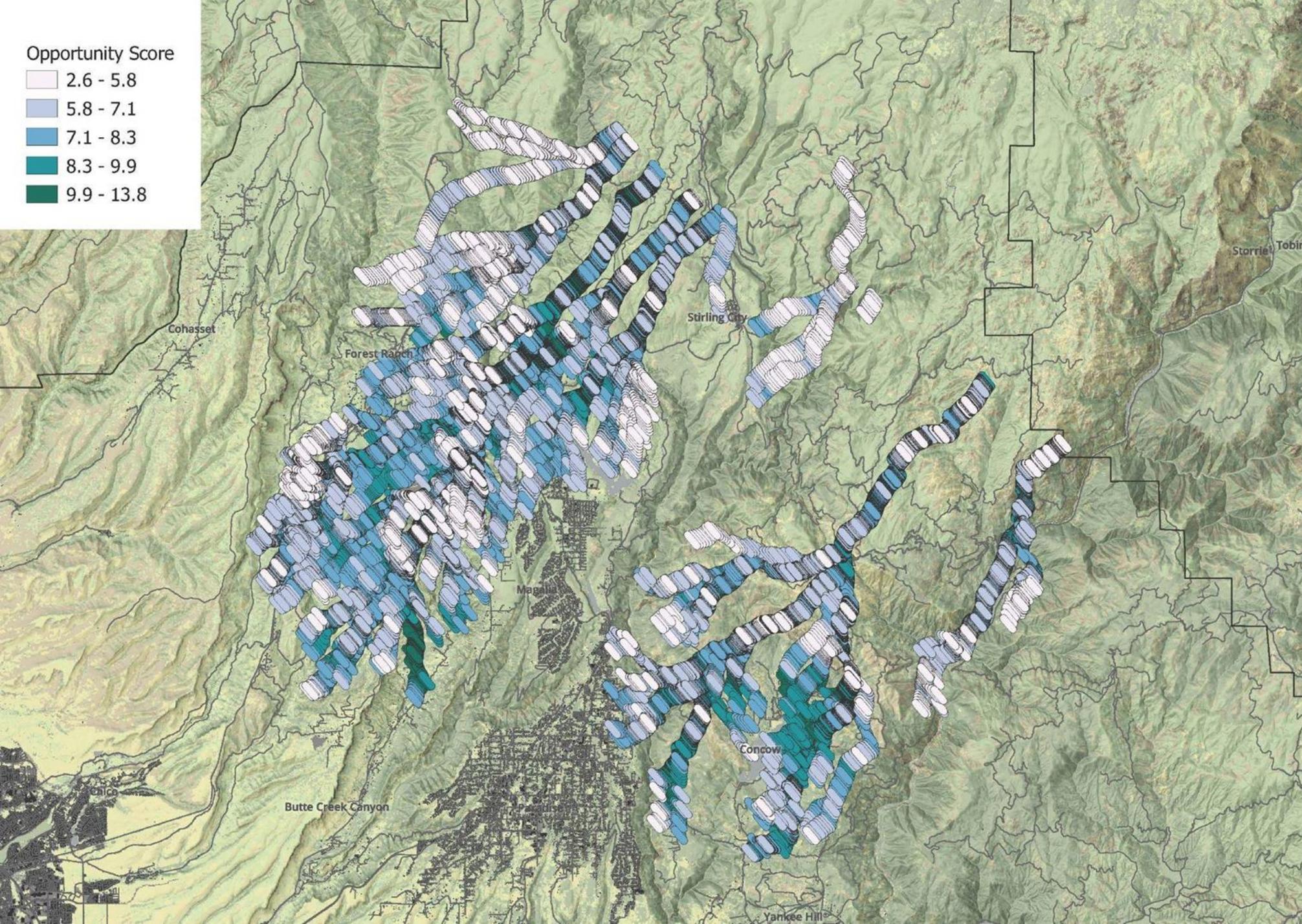
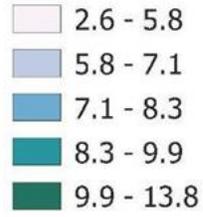
Custom logic that defines the net treatment benefits (benefits - costs) for each cell on the landscape.

v1 Logic - Suitable treatments are those that substantially reduce ROS, are situated on high-value pathways, are located close to roads, and are situated on low-to-moderate slopes. Weights (λ) of each component are configurable.

$$\begin{aligned} & \lambda_1 \times \Delta_{\text{ROS}} \rightarrow \text{Rate of Spread Reduction} \\ + & \lambda_2 \times D_{\text{road}} \rightarrow \text{Classified Distance to Road} \\ + & \lambda_3 \times V_{\text{path}} \rightarrow \text{Classified Pathway Value (\# of buildings at termination point)} \\ + & \lambda_4 \times V_{\text{slope}} \rightarrow \text{Classified slope suitability} \\ + & \lambda_5 \times \text{Structures} \rightarrow \text{Classified Distance to Dense Structures} \end{aligned}$$

= **Aggregate Suitability Score**

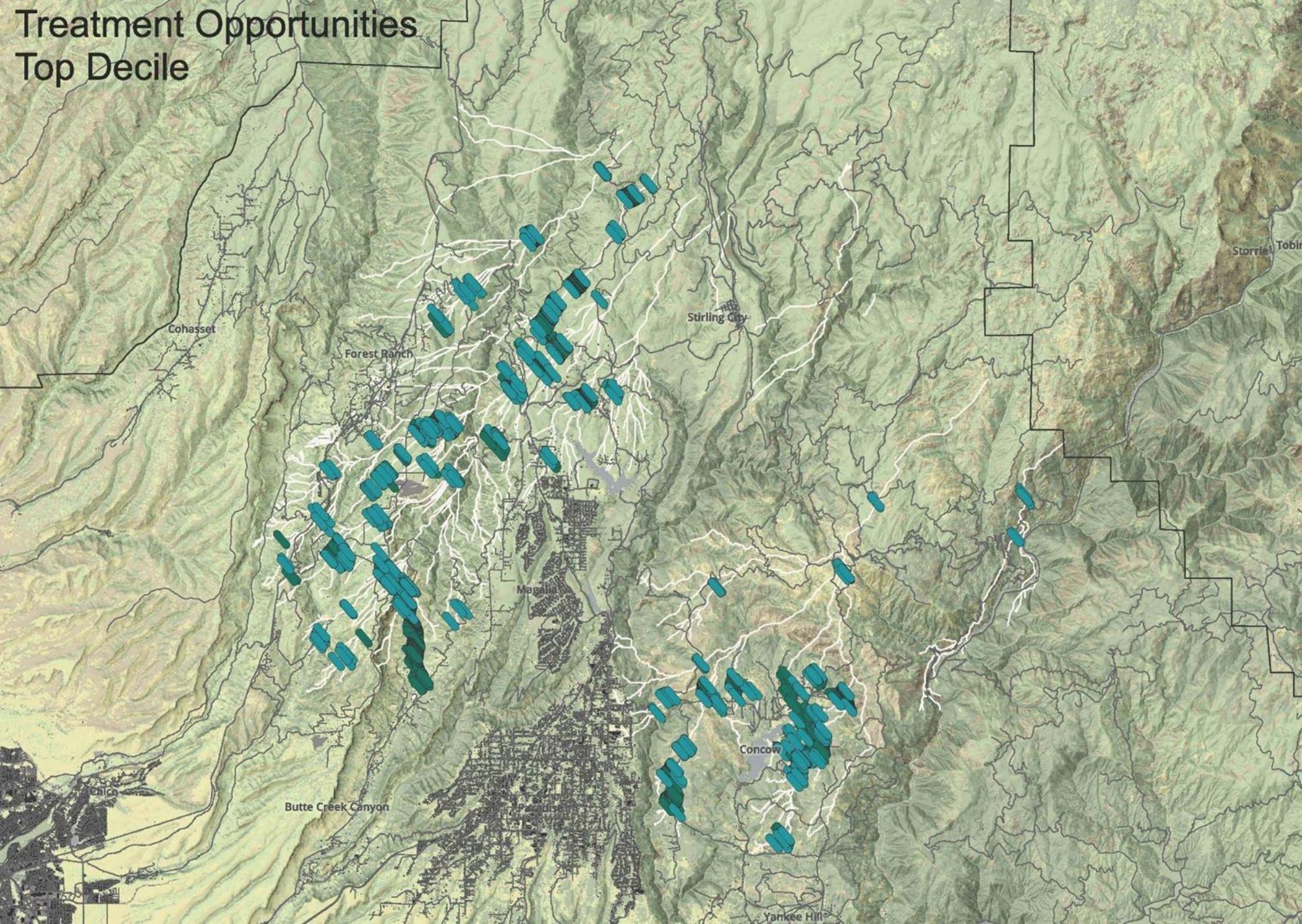
Opportunity Score



3. Construct Treatment Opportunities

1. All treatments occur along “accessible” pathways that enter a community.
1. Treatment opportunities are generated every n meters along the pathway and geometry oriented to be perpendicular to the pathway segment.
1. User specifies length x width.
1. Additional logic can be specified to exclude habitat areas, etc
1. For Paradise NE scenario, this results in >41,000 treatment opps (1,788,861

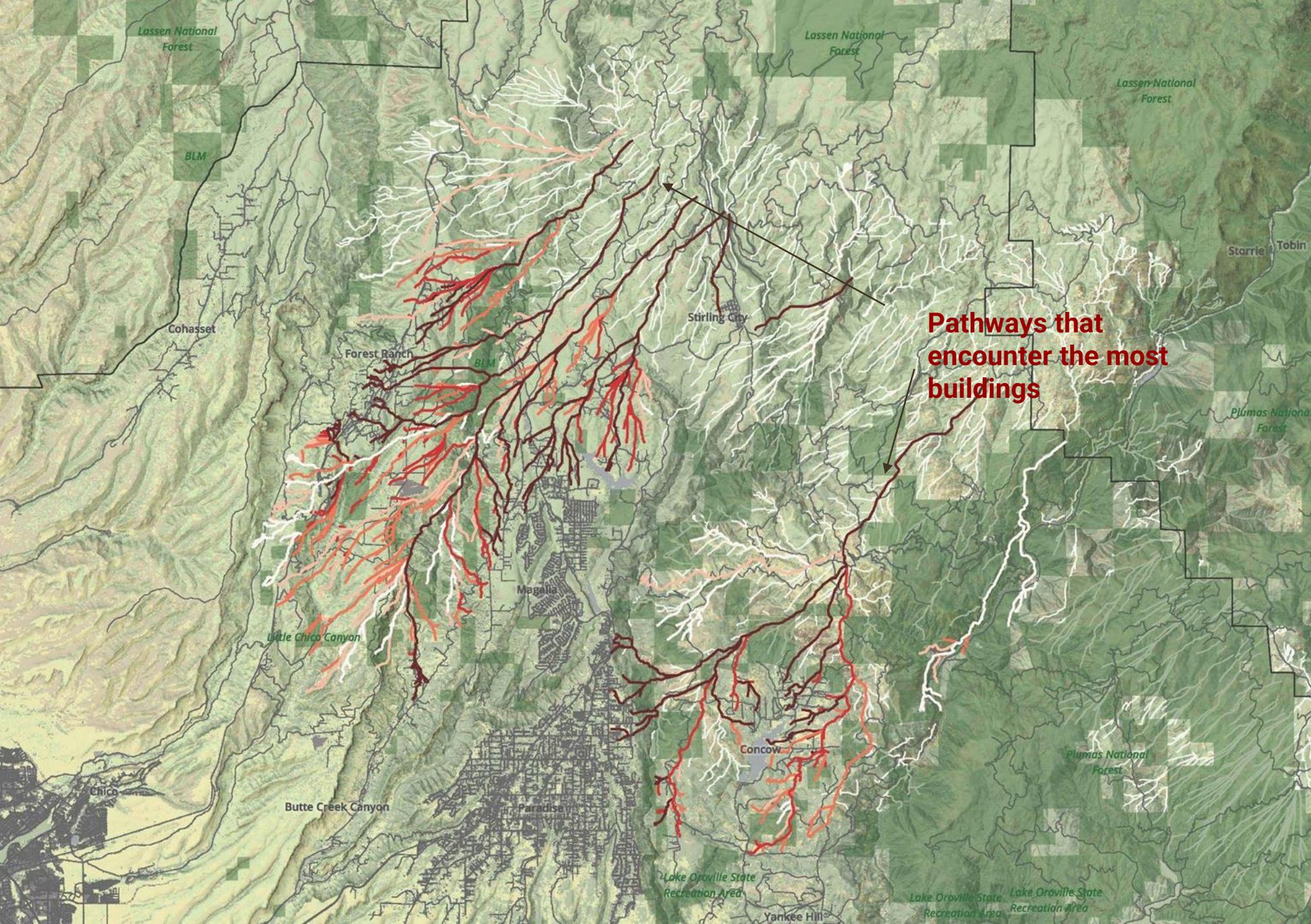
Treatment Opportunities Top Decile



4. How to select the “right” treatment units?

Selecting 10 treatment segments for Paradise:
7,304,244,762,750,448,
296,195,262,206,698,42
7,800 combinations

Sorting by suitability
clumps treatments
together and does not
optimize community
safety as a whole.



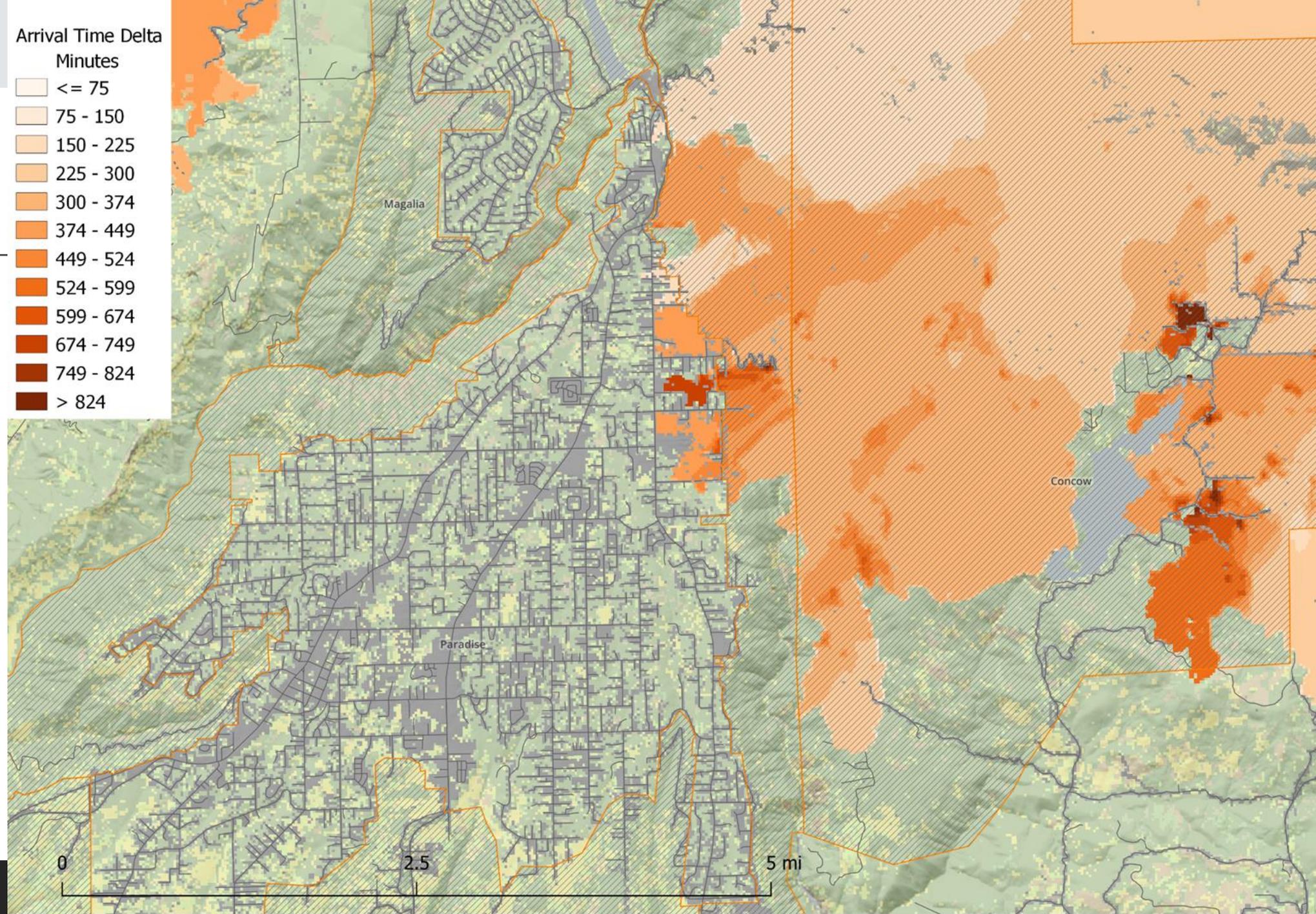
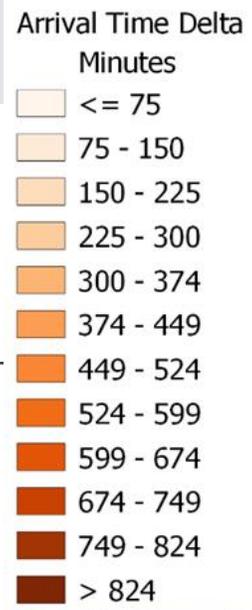
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1. Aggregate the value of each path on a traversal from lto leaf to ignition.

Northeast



Summary

- Articulate and make visible the conflagration loss sequence.
- Optimize mitigation and response, bring a dynamic component to the CWPP.
- Provide public and private valuation of mitigation and response variables.

Questions?

Roundtable / Public Comment

- ▶ Roundtable
- ▶ Public Comment





Next Meeting Information

February 20, 2024

CNRA Building, 715 P Street, 2nd Floor
Conference Room 2-221 (A)

Sacramento, CA 95814

- **Board of Forestry and Fire Protection:**
 - Brief update on the timing status of the regulations for Zone Zero.
- **California Department of Insurance (CDI):**
 - Presenting on the framework for “Safer from Wildfires”.

► **Topic Suggestions for 2024 Meetings**

- <https://forms.gle/Wefg6YnrnUGYS8ua9>



Meeting Adjournment (Motion Required)

- ▶ Copies of the written materials have been posted on the Office of the State Fire Marshal web site at <https://osfm.fire.ca.gov/>.
- ▶ For information concerning the Advisory Committee Meeting, please contact Kara Garrett at (916) 201-5539 or Kara.Garrett@fire.ca.gov.
- ▶ NOTE: Items designated for information are appropriate for committee action if the committee chooses to act. The agenda order is tentative and subject to change. Agenda items may be taken out of order to facilitate the effective transaction of business. The Committee may not discuss or act on any matter raised during the public forum period, except to decide whether to place the matter on the notice and agenda of a future committee meeting.

