

The REBUILD Survey

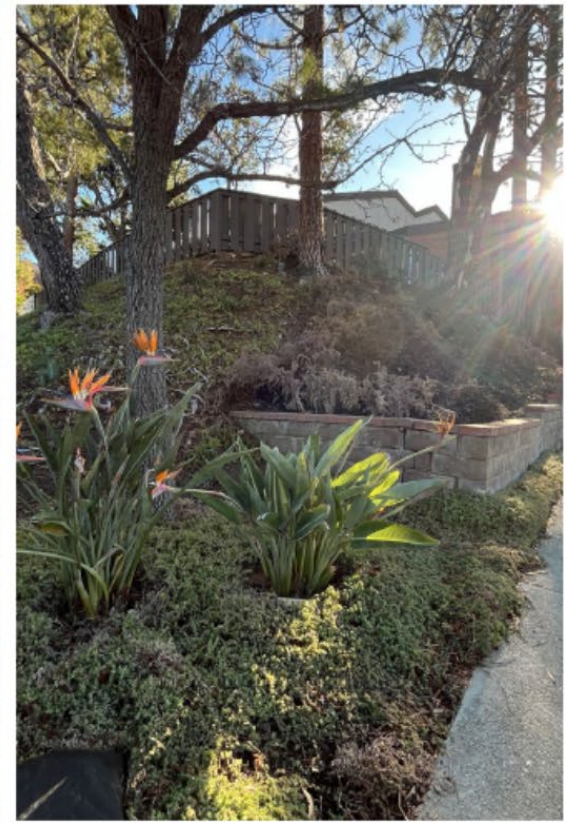
Overview, household experiences, needs and perceptions

A part of the After the Fire Webinar Series

Welcome

The event will begin
shortly.

September 20, 2025



Special thanks to....

- ♥ Households and business owners who participated and encouraged their community to participate
- ♥ Faculty, students, and staff at participating institutions who volunteered their time
- ♥ Community groups such as Pali Strong and Eaton Fire Residents United who encouraged people to participate
- ♥ The R&S Kayne Foundation for providing funding for the team with the Community Action Project Los Angeles (CAP-LA) effort
- ♥ Brianne Gilbert and Chhandosi Roy at the Thomas and Dorothy Leavey Center for the Study of Los Angeles at Loyola Marymount University
- ♥ Team member institutions for financial support

General Overview

- 9:00** **Welcome and Introductions**
- 9:10** **Overview and Initial Results**
- 9:30** **Panel Discussion**
- 9:55** **Wrap Up**
- 10:00** **End**

A recording of this event will be posted at www.PlumbingSafety.org

Household experiences and needs after disasters are numerous

Evacuation and housing

Health impacts and needs

Property damage, environmental testing and remediation

Insurance

Trust, rebuilding actions, and more...

Resilience:

The ability to bounce back from misfortune and change

Some of our prior community support efforts:

2023 East Palestine Chemical Disaster, Ohio

2023 Lahaina and Kula Fires, Hawai'i

2022 Eastern Kentucky Flood, Kentucky

2021 Marshall Fire, Colorado

2018 Camp Fire, California

2014 MCHM Chemical Disaster, West Virginia



Household Recovery Decisions


Helps establish a basic understanding

Developed from our response to the East Palestine chemical disaster and January wildfires.

- Environmental sampling and testing focus.
- Accessible to property owners and officials.
- Includes discoveries from 100s of home environmental testing reports and in 1-on-1 meetings.
- Valuable for inspection, testing and sampling companies as well as insurance companies.

Whelton, Bollens, Ferrarezzi (2025).


Access FREE here → <https://docs.lib.purdue.edu/red/1/>



PURDUE UNIVERSITY.

After a Wildfire:

Considerations for Building Environmental Testing



Overview

1. Damage & building contamination
2. What & where are the contaminants?
3. Role of sampling & testing in restoration, damage identification, and remediation
4. Sampling & testing is conducted to understand the damage
5. Who should conduct testing & what is their scope?
6. What should be tested for & where?
7. FAQs
8. Remediation & post-remediation
9. Acknowledgement & additional information

1. Damage and Building Contamination

Wildfires can directly and indirectly make buildings unsafe by introducing physical, chemical, and microbiological pollutants. These pollutants can pose an immediate and long-term [health](#) and safety risks to building users. Particles, gases, and vapors are often released and created from burning structures, vehicles, and other items. Microorganisms can grow due to the presence of water due to pipe breaks and leaks, fire-fighting activities, local climate, and other conditions. Before entering a fire-impacted building, proper inspection and testing are highly recommended.

Signs of contamination being present can include broken and melted building components and systems, dust, debris, ash, and soot deposits on floors, walls, ceilings, personal items, inside HVAC components, corroded metals, electrical system malfunctions, and discolored interior and exterior walls. Indirect damage indicators can be odors and illness symptoms. Not all damage may be visible (i.e., in wall cavities, attics, drywall, personal items).

Persons impacted by wildfire should seek advice from their health department and competent professionals. The property should not be entered without proper safety equipment and protocols to protect against hazards and spreading contamination to their vehicles, other residences, and other people.

Following A Structural Assessment, A Building Inspection Should Be Conducted and Include:

<ul style="list-style-type: none">• The building exterior• Natural gas system• The garage, attic, crawlspace• The heating ventilation and air conditioning (HVAC) units and associated components• All ceilings, walls, floors, shelves in every room, including hallways and closets• Electrical system including the breaker box, wiring, and electrical components (i.e., switches, outlets).• Personal electronic items (i.e., TV, personal devices, stereo, DVD, VCR, etc.)• Personal items• Plumbing fixtures• Other fixtures (i.e., cabinets, lights, etc.)	<ul style="list-style-type: none">• Furniture (i.e., couches, mattresses, etc.)• Appliances such as microwave, oven, dishwasher, washing machine, dryer, humidifier, etc.• Pools and spas• Fire sprinkler system
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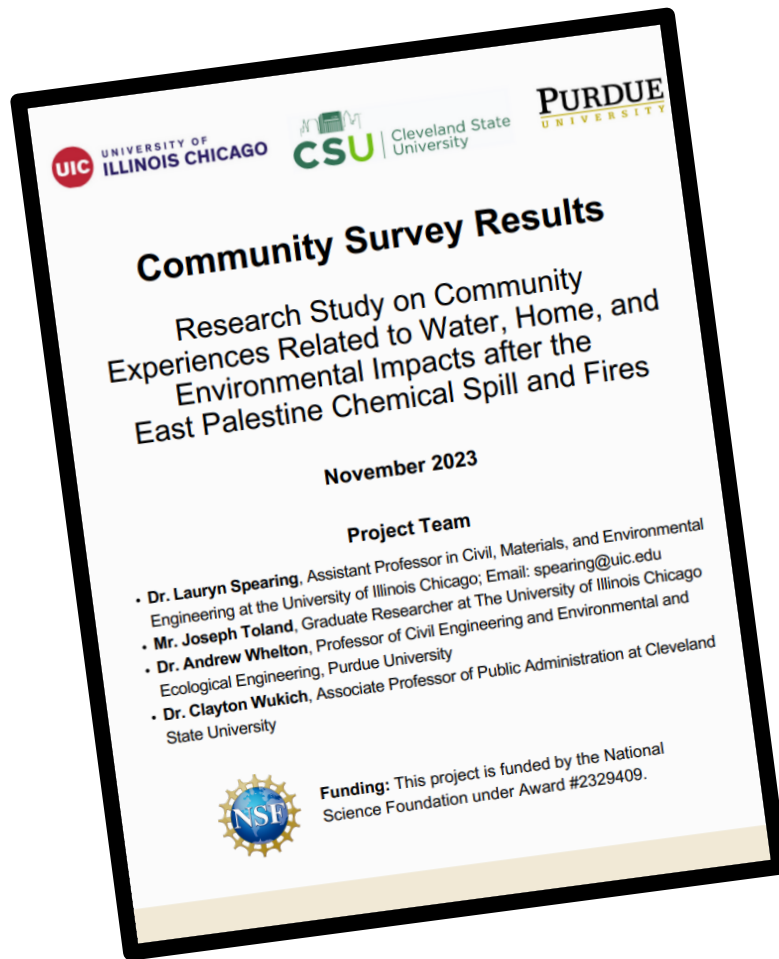
At a minimum, persons conducting the assessment should wear proper safety [equipment](#) including a properly fitted respirator (P100+OV/AG elastomeric air purifying respirator with organic vapor and acid gas cartridges), safety goggles (ANSI Z87.1 D5), chemical-resistant gloves, long sleeves, long pants, sturdy shoes, disposable Tyvek suit, and shoe covers to limit exposure and contamination spread. Inspections should be carried out with more than one individual. Conditions may be present where greater levels of protection are necessary.

Center for Plumbing Safety at Purdue University, West Lafayette, Indiana USA
Date: Sept. 9, 2025; Authors: Whelton, A.J., Bollens, E., Ferrarezzi, C.G. (awhelton@purdue.edu)

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Our Study Goal:

To better understand household attitudes, experiences, and needs so that community and elected leaders can better address gaps pertaining to health, economic security, and rebuilding.



← Inspired by others →

Our survey was conducted in response to the 2025 Palisades and Eaton Fires

Recovery Efforts by Uniting Individuals, Listening, and Discovery (REBUILD)

A Truly Collaborative Team



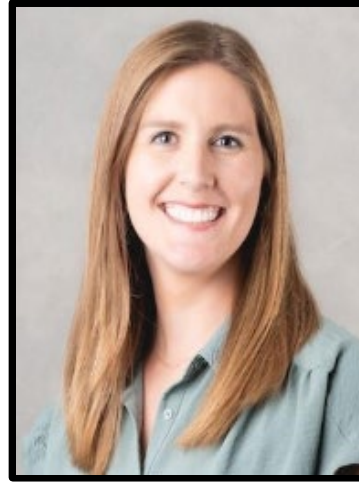
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A Truly Collaborative Team



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The REBUILD Survey

Overview of Initial Results:
Household experiences,
needs and perceptions



***Cristiane
Ferrarezzi***

Report is freely available
www.PlumbingSafety.org

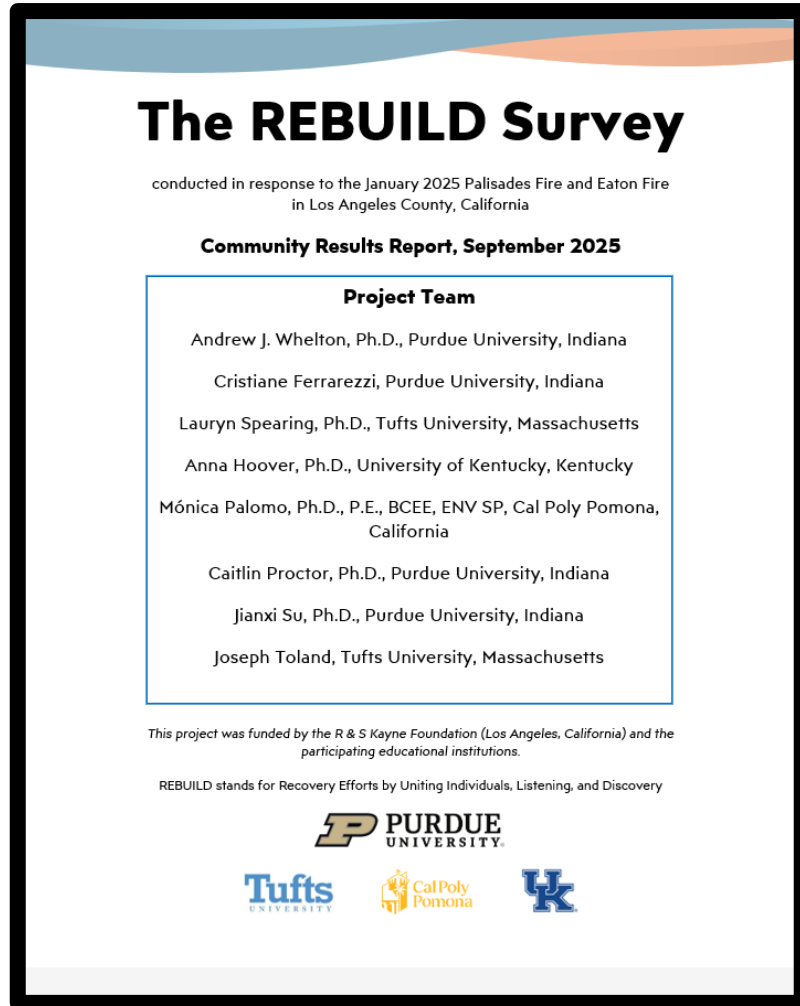


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Survey Design

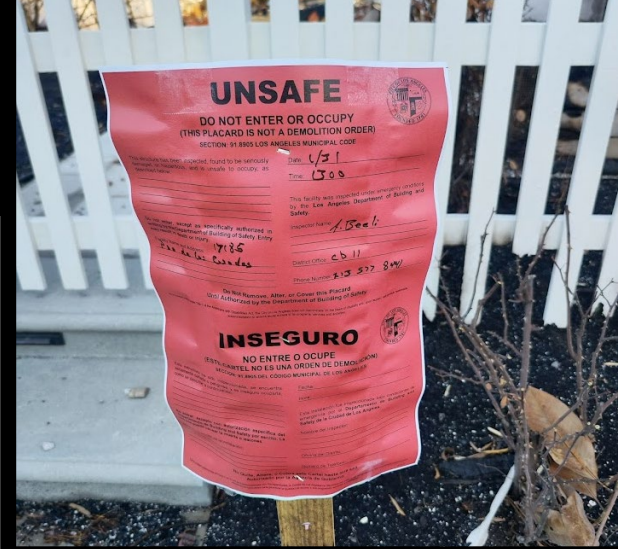
February 2025: Onsite Los Angeles households support visit, questions

Online, Qualtrics, Purdue University

English and Spanish versions

Survey open from April to June 2025

Adult participants, 18 years or older, own or rent



Who responded to the survey?

1,229 verified responses: 37.9% Palisades Fire vs. 62.1% Eaton Fire

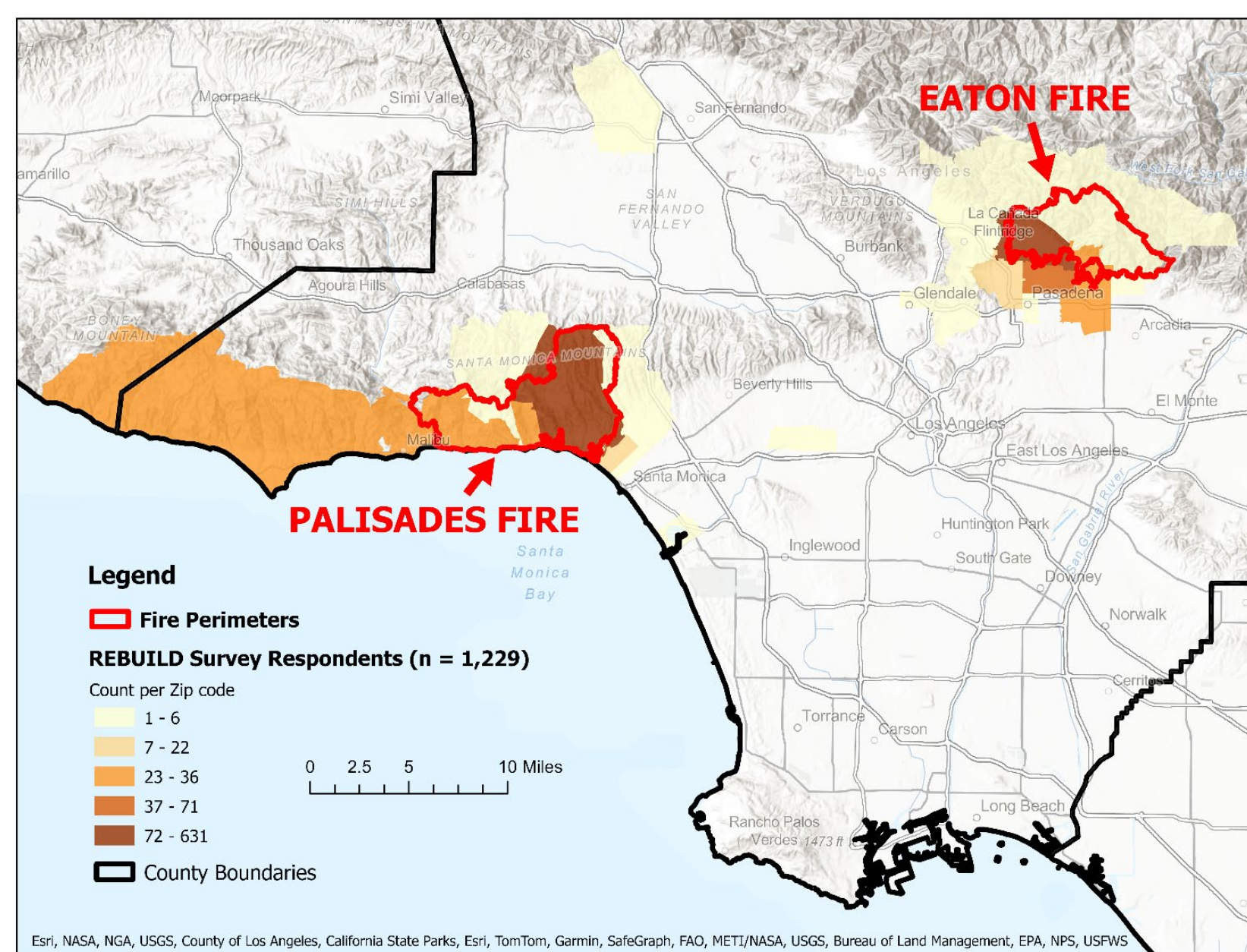
Male: 29 to 35 %

Female: 63 to 69 %

Race	Palisades Fire (%)	Eaton Fire (%)
Black	0	5
Asian	8	8
White	85	71
Latina/o	1	3
Multiple races	7	13

Education	Palisades Fire (%)	Eaton Fire (%)
Some high school or less	0	0
High school diploma or GED	1	1
Some college, but no degree	5	5
Associates or technical degree	1	4
Bachelor's degree	30	34
Graduate or professional degree	63	56
Prefer not to say	1	1

U.S. Census	Palisades	Altadena
Female	53%	52%
White	82%	47%
Bachelor's degree or higher	79%	52%



When mapped by
zipcode, most
households lived
INSIDE a fire
perimeter

94.2 %
Palisades Fire
VS.

73.4 %
Eaton Fire

n = 1,226

Who responded to the survey?

Nearly all households had insurance before the fires

98.8 % Palisades vs. **99.0 %** Eaton Fires (n= 924)

About two-thirds of the households had pets, which is similar to the 66% 2023 U.S. national average reported by the American Pet Products Association.

60.5 % Palisades vs. **69.5 %** Eaton Fires (n= 1,206)

Less than half of the households had children, which is similar to the 2024 U.S. Census national average of 39%.

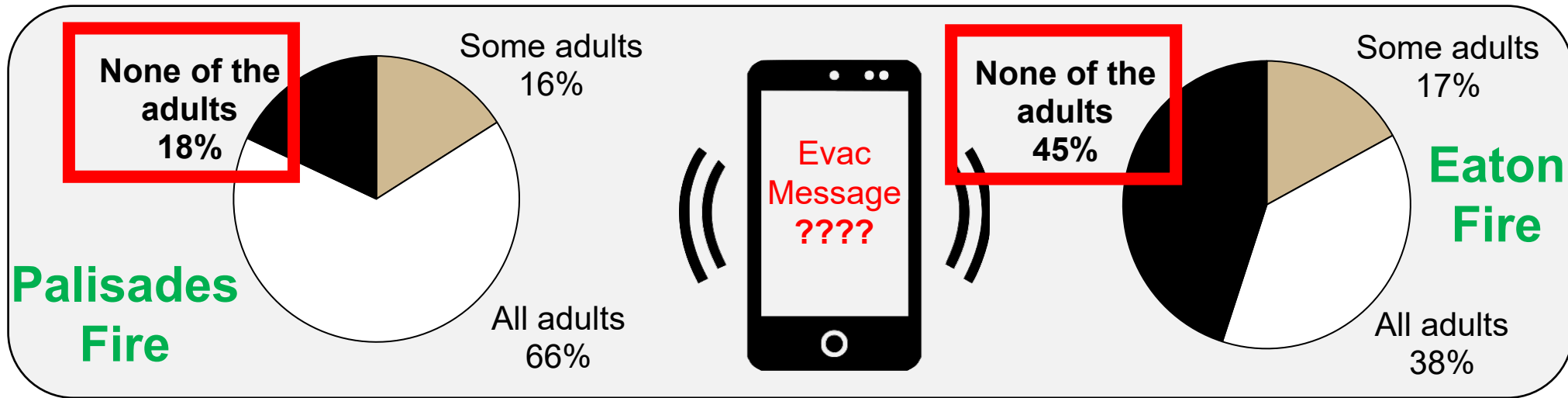
35.2 % Palisades vs. **41.1 %** Eaton Fires (n= 973)



Evacuation and Displacement

Condition	Palisades Fire (%)	Eaton Fire (%)
Yes, my home was under an evacuation condition	99.3	86.2
No, my home was not under an evacuation condition	0.4	8.2
I do not know	0.2	5.6

n = 1,218



n = 1,202

Most households were still living away from their home:
Palisades Fire (92 %) vs. Eaton Fire (77 %)

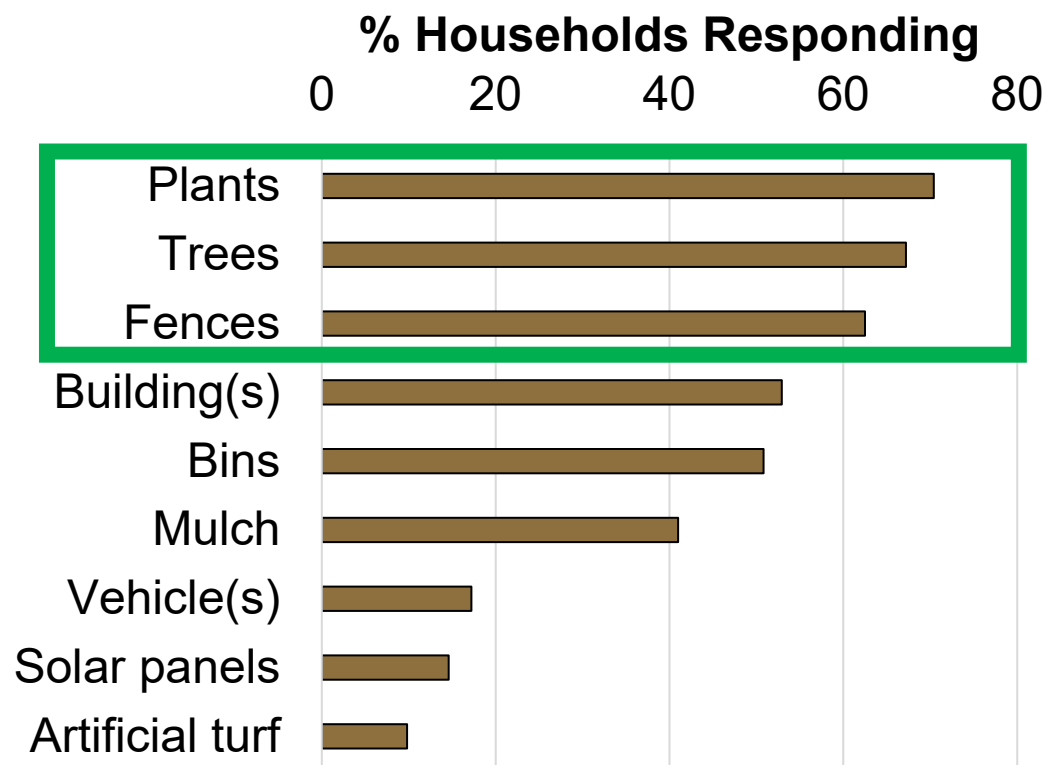
n = 978

Property Impacts

Condition of Home	Palisades Fire (%)	Eaton Fire (%)
Burned and fully destroyed	45.9	42.8
Partially burned, not destroyed	13.1	9.8
Not burned, not destroyed	41.0	47.4

n= 1,229

Exterior Property Items that
Burned or Melted



n= 523

Ash and Debris

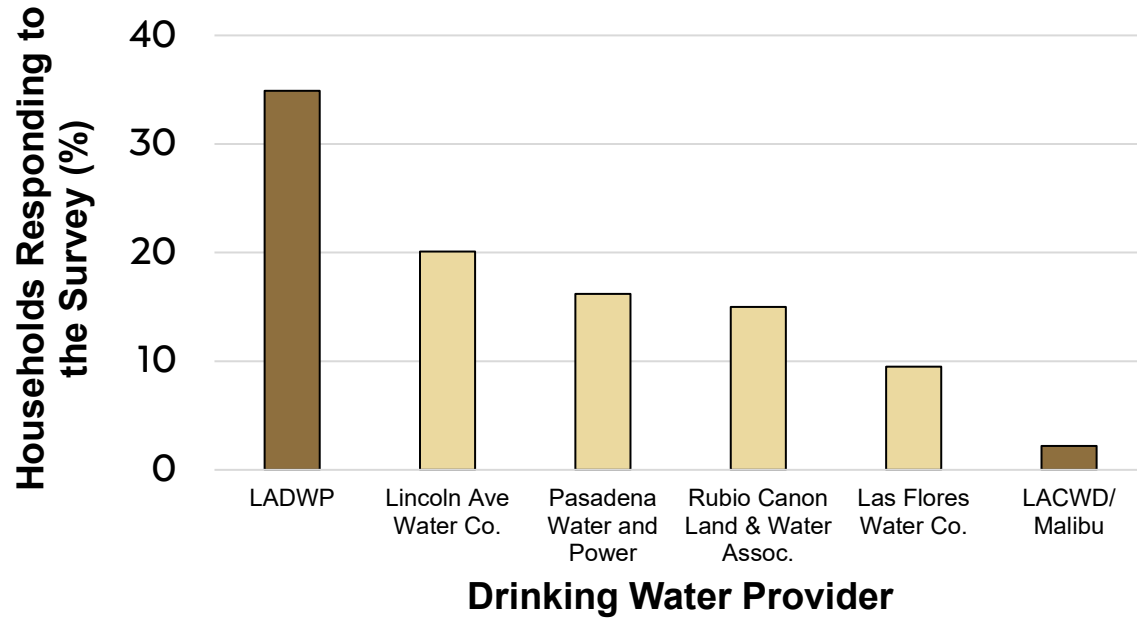


Rank	Palisades Fire	Eaton Fire
1	On the floor	On the floor
2	Windowsills	Windowsills
3	Other	Attic
4	Garage	Other
5	Attic	Garage
6	HVAC filter	HVAC filter

Tip: Combustion byproduct testing (ash, soot, and char) would not determine if lead or asbestos contaminants were present.

n= 1,167

Environmental Safety Concerns



Most households received water from 6 of the 11 drinking water providers impacted by the fires

n= 1,206

Response	Palisades Fire (%)	Eaton Fire (%)
Yes, advisory was still in place	8.2	5.9
Yes, but advisory no longer in place	68.6	70.5
No	9.8	11.9
Other	13.4	11.7

Most household drinking water advisories had been lifted

n= 1,118

Mental Health

Response	Palisades Fire (%)	Eaton Fire (%)
Outdoor air	75.4	84.0
Soil	72.9	84.9
Indoor air	68.7	74.6
Natural places like parks, hiking spots	70.4	77.3
Drinking water	51.2	60.3

Many of the households believed they had experienced anxiety, stress, or depression associated with damage to...

n= 1,073

More than three of every
four households were concerned that debris removal pollution would affect the safety of schools

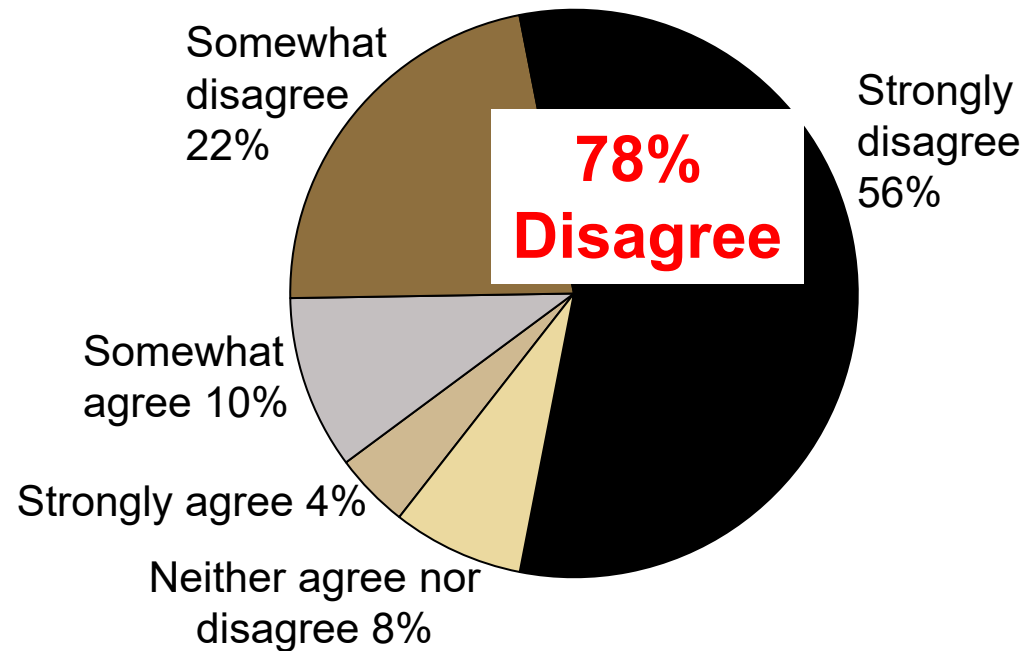
n= 1,073

Concern for Pet Safety and Mental Health



“ I am confident that it is safe for my pets to go on a walk or play in the yard around my home. ”

– The REBUILD Survey



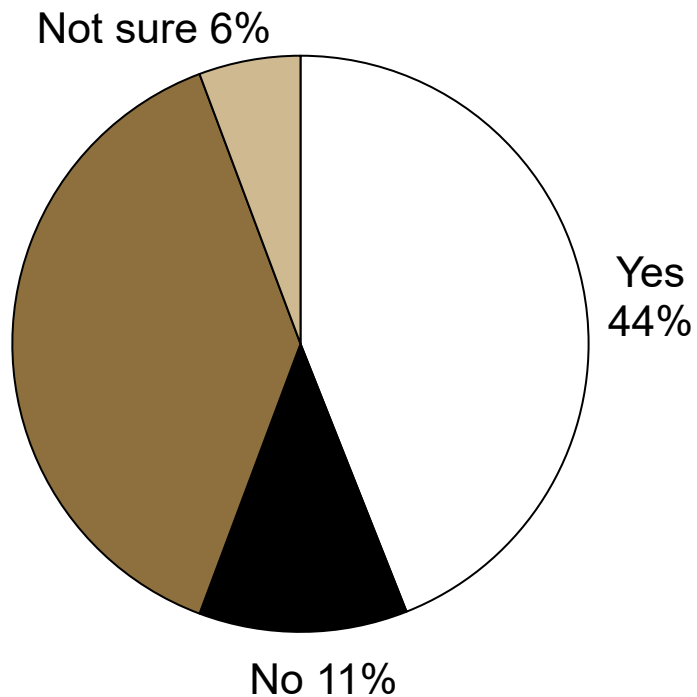
n= 681

Property Testing

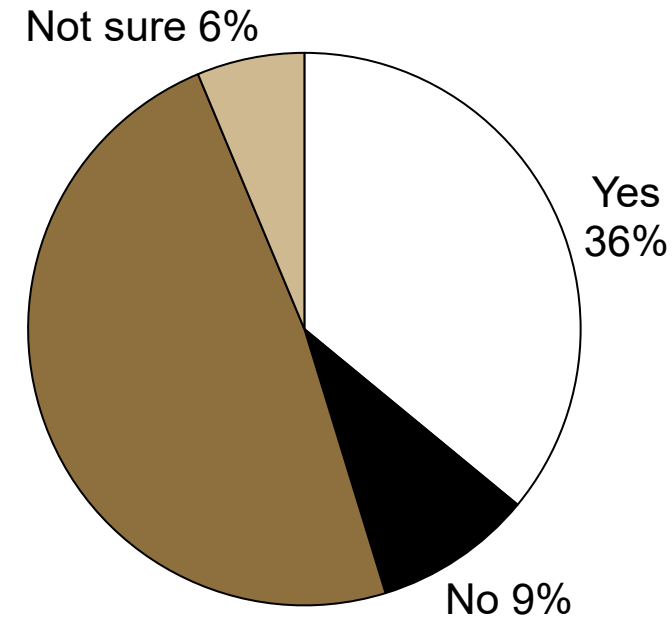
“ Was environmental testing conducted on your property for fire-related contamination? ”

– The REBUILD Survey ”

Palisades Fire



Eaton Fire



n= 1,073

Property Remediation

Respondents explained what was done with a variety of their household items

Clothing	Pet bedding or pet crate
Pillows	Children's plastic toys
Mattresses	Electronics
Stuffed animals	Appliances
Window blinds	Fruit from outdoor plants
Carpets	Fruit from indoor plants
Rugs	Other
HVAC filter	

Most common actions:

Discarded pillows, mattresses and fruit

Cleaned clothing, and appliances

n= 524

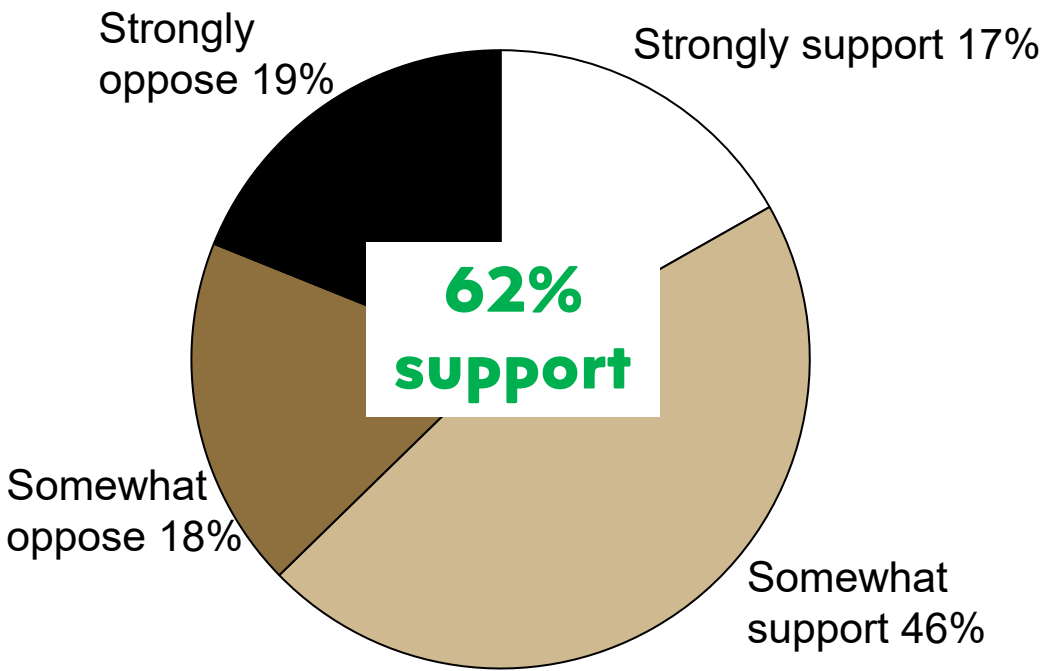


Insurance

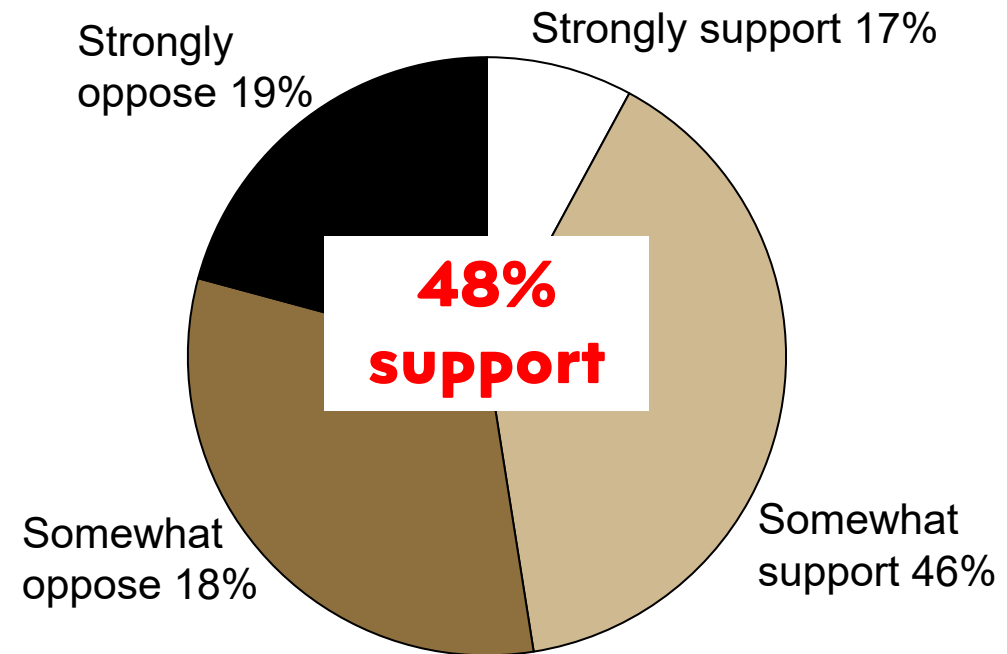
“ As the region rebuilds, policy makers should allow insurance companies to increase their rates for fire insurance if this enables them to offer insurance for everyone?
”

– The REBUILD Survey

Palisades Fire



Eaton Fire

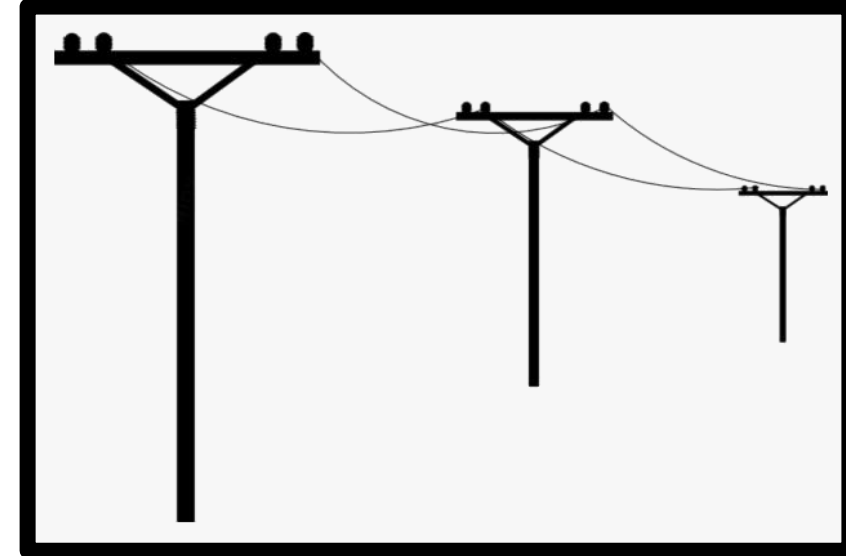


n= 995

Rebuilding

“ Please, rank your preference on actions to rebuild fire resilient homes. ”

– The REBUILD Survey



Top choice: “bury power lines underground”

54 % Palisades vs. **66 %** Eaton Fires

Households with children ranked it more frequently (**71 %**) than households with no children (**56 %**).

n= 998

Recommendation Summary

1. To reduce uncertainty and mental health impacts, a dynamic shift in support for households is needed to provide environmental testing access.
Safety concerns have been validated by soil testing efforts. Lack of testing access and data for decision-making hinders recovery and contributes to anxiety, stress, and depression.
2. For indoor contamination and safety concerns, households, officials, and consultants should review the new *After the Wildfires: Building Environmental Testing* guidance to gain a better understanding.
<https://docs.lib.purdue.edu/red/1/>
3. Local and state leadership needed to shift the burden away from property owners becoming experts on a diverse array of technical topics.

Recommendation Summary

4. An investigation and correction of the insurance system for disasters is needed: Identify reasons behind claim delays and denials. Identify reasons for claim payout gaps for rebuilding. Repeated insurance problems after numerous fires – not just here.
5. Burying powerlines was ranked highly but should avoid shifting the financial burden on the households who are trying to rebuild – who do not expect to receive enough insurance money to build back to what they had before.
6. Identify and correct the underlying reasons for evacuation alert failures to phones. Benefit to minimizing risks to other events on the horizon: Olympics, Superbowl, World Cup, etc. not just fires.

Panel Discussion



***Nicole Marie-
Gerardi
Maccalla,
Ph.D.***

Eaton Fire Residents
United, Resident impacted
by the Eaton Fire



***Reza
Akef***

Palisades resident,
Pali Strong Board Member,
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***Cristiane
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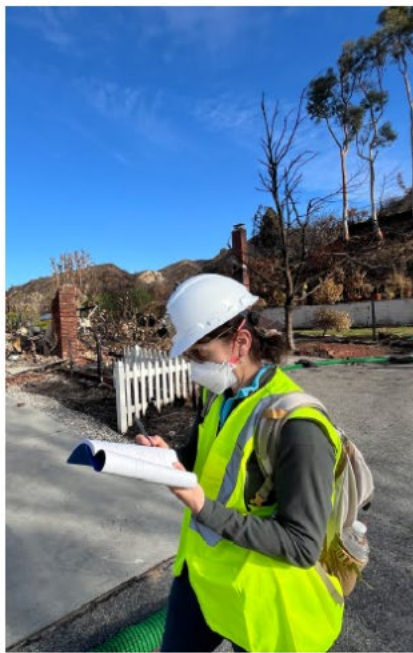


***Joseph
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PhD Graduate Researcher.
Civil and Environmental
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University, Massachusetts

Webinar Series: *After the Fires*

Register for the webinars at
www.PlumbingSafety.org



Lessons from the Eaton Fire and Palisades Fire, California

August 18

The LA Pools
Study: What
was in the
water?

Recording
available

September 13

Soils, Debris,
Fruit,
Gardens, and
More

Recording
available

September 20

The REBUILD
Survey: Overview
and First Look

Recording
to post 9/23

October 20

Physical and
mental health
discoveries and
resources: The
L.A. fires

Register now
www.PlumbingSafety.org

November 17

The REBUILD
Survey: Property
testing,
remediation, and
insurance

The REBUILD Survey

Overview, household experiences, needs and perceptions

This event has ended

Thank you

A recording of this event will be posted at www.PlumbingSafety.org

Questions about this event can be directed to:
Professor Andrew Whelton, awhelton@purdue.edu

Moderator



Andrew J. Whelton, Ph.D.
Moderator

Professor

Lyles School of Civil and Construction Eng.

**School of Sustainability Eng., Environmental and
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