



## Hazard Mitigation Planning Committee

### Meeting #3

Tuesday, December 20, 2022

3:00 pm

Join via Zoom:

<https://lakecounty.zoom.us/j/95171573827?pwd=MExmRW5jeFBzdWlDK3JJSjZoYkNNUT09>

Webinar ID: 951 7157 3827 - Passcode: 505655

#### **Brian Martin**

Sheriff OES

#### **Ron Ladd**

City of Lakeport

#### **Adeline Leyba**

City of Clearlake

#### **Leisha Phillips**

Auditor/Controller

#### **Derrell Hochstein**

Robinson Police Department

#### **Dave Fromer**

District 1

#### **Russel Cramer**

District 2

#### **Robert Young**

District 3

#### **David Brown**

District 4

#### **Jessica Fitzgerald**

District 5

Any person may speak for three (3) minutes on any agenda item; however, total public input per item is not to exceed 15 minutes.

A request for a disability-related modification or accommodation necessary to participate in the HMPC meeting should be made in writing to the Office of Emergency Services at least 48 hours prior to the meeting. Meeting materials and supporting documents are available for review on the Lake County Sheriff's website at: <http://www.lakesheriff.com/About/OES/HMP>.

Any questions/comments can be emailed to [lakesheriffoes@lakecountycyca.gov](mailto:lakesheriffoes@lakecountycyca.gov).

## **Hazard Mitigation Planning Committee #3**

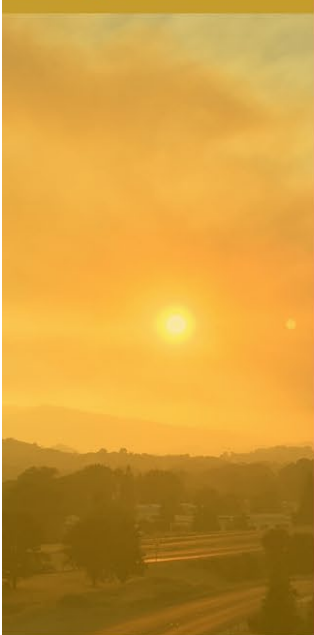
### **Agenda – December 20, 2022**

1. Call to Order
  - a. Roll Call
2. HMP Progress Status Update
3. HMP Update Draft – Section I
  - a. About
  - b. Lake County at a Glance
  - c. Geography & Climate
  - d. Population & Demographics
  - e. Planning Process
  - f. Organizing Resources
  - g. Profiling Lake County
4. Public Comment
5. Adjourn & Set next meeting

## **Hazard Mitigation Planning Committee**

### **ATTACHMENT TO THE DECEMBER 20, 2022 AGENDA**

The following draft sections from Phase I are presented for review, comment and edit. Comments from the public and other stakeholders are encouraged in writing via e-mail to [lakesheriff@lakecountyca.gov](mailto:lakesheriff@lakecountyca.gov).



# LAKE COUNTY LOCAL HAZARD MITIGATION PLAN UPDATE 2023



Prepared By:  
Lake County Sheriff's  
Office of Emergency Services



# Contents

About .....	4
Lake County at a Glance .....	5
History.....	5
Geography and Climate.....	6
Population and Demographics.....	7
Planning Process.....	8
Organizing Resources.....	8
Official Recognition, Planning Team Established.....	8
Assess Community Support .....	10
Engage the Public .....	11
Profiling Lake County .....	11
Integration and Coordination with Other Planning Efforts.....	11
Risk Assessment.....	12
Disaster Declarations.....	12
Hazard Identification.....	15

## About

The Lake County Sheriff's Office of Emergency Services ("Lake County OES", "Sheriff's OES" or "OES") is the lead agency for local emergency management for the County of Lake as defined by the Lake County Board of Supervisors (BOS) in Chapter 6, Article I of the Lake County Code.

OES' mission is to *enhance the resilience of Lake County (the Operational Area) in the face of disaster* through activities focused on mitigation, preparation, response and recovery. Lake County OES holds responsibility to develop, update and exercise County plans including the Emergency Operations and Hazard Mitigation Plans (the EOP and HMP).

Lake County's HMP was last updated and approved by FEMA in July 2018. The plan is required to be updated every five years. While the overall Plan follows federal, state and local requirements and guidance, its intent is not solely to maintain funding eligibility; rather, it is part of the County's ongoing efforts to increase community resiliency, and to guide the Operational Area in reducing physical, economic and environmental impacts from natural disasters through specified actions.

In full commitment to the OES mission, and recognition of historic impacts of severe and compounding disasters, including a series of wildfires since 2015, the Board of Supervisors added, "Developing and maintaining a high standard of Disaster Prevention, Preparedness and Recovery, in collaboration with all community stakeholders" to its Vision 2028 Priorities Statement in May 2021 (Vision, n.d.).

OES facilitated the 2023 Plan Update, a single jurisdiction<sup>1</sup> plan that geographically covers the unincorporated areas within Lake County's boundaries (hereinafter referred to as the Planning Area).

Hazard mitigation is defined by FEMA as, "any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event." A three-year, congressionally mandated independent study to assess potential cost savings from mitigation activities provided evidence mitigation activities are highly cost-effective. On average, each dollar spent on mitigation prevents \$6 in future losses, in addition to saving lives and preventing injuries (National Institute of Building Science Natural Hazard Mitigation Saves 2017 Interim Report).

This 2023 Update was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 (Public Law 106-390) and regulations set forth by the Interim Final Rule published in the Federal Register February 26, 2002, (44 CFR §201.6) and finalized October 31, 2007 (hereafter, these requirements and regulations will be referred to collectively as the Disaster Mitigation Act, DMA, or DMA 2000). The Act emphasized the need for mitigation plans and more coordinated mitigation planning and implementation efforts. Regulations set forth establish requirements local hazard mitigation plans must meet for a

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<sup>1</sup> Element A1.(b)

local jurisdiction to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288).

This planning effort also follows FEMA's 2013 Plan Preparation Guidance. Planning efforts result in a HMP that details potential hazards, risks and mitigation goals/objectives. It will be used to guide County efforts to protect life and property and enhance resiliency to disaster through local land use policy, mitigation activities and efforts.

### Lake County at a Glance

The County of Lake is in northern California, approximately 127 road miles north of San Francisco, 126 road miles northwest of Sacramento, and 80 road miles east of the Pacific Ocean. With a total surface area of 68 square miles (43,000 acres), Lake County's Clear Lake is the largest natural freshwater lake entirely within the geographic boundaries of California. The county's defining feature, Clear Lake has more than 100 miles of shoreline, and sits at an elevation of 1,326 feet above sea level. Lake County has a mixture of rugged mountains, rolling hills, and broad valleys. Public lands comprise just over half of the County's acreage. Elevations range from approximately 640 feet to 7,046 feet above sea level.

Lake County's population is 68,766. 69% of residents identify as White, 24% Hispanic, 5% American Indian, and 2% African American. The population of Lake County is also more vulnerable than California as a whole. 23% of residents are age 65 or greater (compared to 15% of all Californians). 14% are disabled (twice the statewide average). The population of Lake County is also markedly less educated than California as a whole. Only 17% of residents have a bachelor's or more advanced degree or above, compared to 35% statewide.

### History

Clear Lake is as central to Lake County's past as its present. Scientific evidence has demonstrated Clear Lake is at least 450,000 years old, and may be the oldest lake in North America. The Lake County region took shape from volcanic action. Thousands of years ago, a landslide that blocked the broad valley's drainage west into the Russian River created Clear Lake's current form. Water levels rose until a new outlet was found; Cache Creek, which drains eastward into the Sacramento River.

Four thousand years before the rise of Egyptian civilization, indigenous people groups (mainly Pomo, Wintun, Wappo, and Like Miwok Indians) were hunting, fishing, and collecting plant foods on the shores of Clear Lake. These groups had natural boundaries according to their language dialect. The lake yielded an abundance of fish, as well as tule reeds from which clothing, boats, dwellings, and household items were made. There are seven federally recognized Tribal Nations historically associated with Lake County.

In the 1850's, the first European families found their way to Lake County; the earliest of these settlers lived near what is now the community of Kelseyville. Farming and ranching

were rapidly established, and toll roads began climbing over the mountains in the 1860's, bringing settlers in increasing numbers. Lake County was established in 1861, comprised of land formerly a part of Napa County.

Favorable soils and climate led to cultivation of a variety of fruits in the 1860s, and fruit production became the dominant agricultural activity following introduction of the Bartlett pear in 1885. Borax was discovered in Lake County in 1856, and sulfur was obtainable in large quantities. Commercial operations for these minerals continued until rich deposits of cinnabar (mercury) were found. By 1856, Lake County's mercury mines formed the fourth largest source of supply in North America. This continued during their 40-50 year span of active production. Lumbering was also central during the last few decades of the 19th century. Lumbering and mining have since significantly declined.

The tourism industry has become an enduring and critical economic base. Early resorts were built around mineral springs well before the turn of the century. The resort industry gained great import as travel from metropolitan areas became more accessible. Lake County offers exceptional opportunities for water-based and outdoor recreation.

### Geography and Climate

Lake County's topography is diverse. Its southern portion is California foothill country, with rolling hills and level valleys. The central portion is dominated by the Clear Lake depression. It's the northern sector of Lake County is mostly rugged mountains. Elevations range from approximately 600 feet, where Putah Creek crosses the southeastern county boundary, to 7,046 feet at Snow Mountain on the eastern boundary. Much of the terrain in headwater areas, especially in the northern sector, is quite steep.

Due to this topographical diversity, microclimates in Lake County widely vary. Overall, the County typically experiences warm, dry summers and cool winters with moderate precipitation. The climate in Lake County varies widely due to changes in topography. Overall, the County typically experiences warm, dry summers and cool winters with moderate precipitation. Based on weather measurements taken 4 miles southeast of Clearlake, the Clear Lake basin has an average annual low and high temperature of 43°F and 71°F, respectively. The highest official recorded temperature in the county is 114°F and the lowest recorded low is 6°F, with temperatures typically ranging from a low in the 30s in the winter to a high in the 90s in the summer. Historic rainfall records show an annual normal rainfall for Clear Lake is 29.86 inches, Middletown is 42.60 inches, and 39.59 inches at Upper Lake.

Although relatively infrequent, snowfall can occur in the winter months; typically, it is limited to higher elevations. When snowfall does occur in lower elevations, it usually dissipates by midday. The County tends to experience relatively light winds due to the sheltering effect of the surrounding mountains. During the winter, winds can be more



variable in their direction. Lake County occasionally receives marine air from the Pacific Ocean that helps to temper the climate.

### Population and Demographics

The California Department of Finance 2021 and 2022 estimates for population of the County and its jurisdictions are shown in Table 1. [Should we summarize the info and move the tables to appendices?]

Table 1 Lake County Population by Jurisdiction

Jurisdiction	Total Population
Unincorporated Lake County	45,899
Clearlake	16,509
Lakeport	4,999
<b>County Total</b>	<b>67,407</b>

(State of California Department of Finance, 2022)

Select social and economic information for the County are shown in Table 2.

Table 2 Lake County - Select Social and Economic Statistics

Statistic	Number
<b>Populations</b>	
Population under 5:	5.3%
Population over 65:	24.2%
Median Age:	43.9
<b>Racial Makeup</b>	
White:	69.4%
Black or African American:	2.1%
American Indian or Alaska Native:	1.9%
Asian:	1.6%
Native Hawaiian or Pacific Islander:	1.0%
Hispanic or Latino	23.9%
Two or more races:	13.1%
<b>Income and Poverty</b>	
Median Income:	\$61,221
Mean Income:	\$81,453
<b>Poverty Rate:</b>	
All Families:	24.9%
All People:	12.9%
Unemployment Rate:	4.5%

(State of California, EDD, 2022) (United States Census Bureau, n.d.)

## Planning Process

The 2023 Lake County HMP provides historical data in relation to local disasters, examines future disaster possibilities and creates an actionable strategy by methodically detailing the planning process including four steps:

1. Organize Resources
  - a. Assess Community Support
  - b. Build the Planning Team
  - c. Engage the Public
2. Assess Risks
  - a. Identify hazards
  - b. Profile hazards
  - c. Inventory Assets
  - d. Estimate losses
3. Plan Development
  - a. Establish goals and objectives
  - b. Identify/prioritize actions
  - c. Prepare strategy
4. Implement and Monitor
  - a. Plan adoption, implementation, evaluation and revisions.

## Organizing Resources

### Official Recognition, Planning Team Established

The 2023 LHMP Update formally began September 13, 2022, when the Lake County Board of Supervisors (BOS) approved a Resolution establishing a Hazard Mitigation Planning Committee (HMPC) comprised of County Departments, Incorporated Cities, Tribal Nations, Fire Districts, Special Districts, members of the public, and stakeholders including local, regional, state, tribal and federal agencies. The Lake County Office of Emergency Services (OES) Chairs the committee and organizes all facets of the planning process.

To include public representation on the HMPC, Lake County OES opened one seat per Supervisorial District, and requested Letters of Intent from interested parties. A notice requesting Letters of Intent from the general public (to fill one seat per Supervisorial District) was posted at the courthouse, online (social media, website), in the press (Record-Bee and Lake County News), on the radio (paid advertisement on three local stations), County Library branches, and disseminated by e-mail to stakeholders. Four letters were received before the deadline, and one was received the following day. On November 1, 2022, the BOS approved the HMPC seats<sup>2</sup>:

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<sup>2</sup> Element A2.(a)

Table 3 List of Planning Committee Members and Agency/Group Represented

Leisha Phillips	Auditor/Controller
Brian Martin	Sheriff/OES
Ron Ladd	City of Lakeport
Derrel Hochstein	Robinson Rancheria Police Department
Adeline Leyba	City of Clearlake
David Fromer	District 1
Russ Cremer	District 2
Rob Young	District 3
David Brown	District 4
Jessica Fitzgerald	District 5

The official HMPC mission is to *approve a comprehensive and coordinated update to the current Hazard Mitigation Plan by ensuring the process followed is complete, concise and accurately represents the varying needs and characteristics of the Operational Area.* Each committee member received the same instructions:

- Arrive on time. At least 6 HMPC members must be present to carry out business. Missing meetings may increase the number of meetings necessary to complete this project.
- You are here as a representative of a subset of the population. To that end, input/suggestions should represent not your personal view point, but the reasonable voice of the population you represent.
- Follow the current topic/agenda.
- You will receive information and instructions necessary to determine if the working group has successfully completed its task(s)/phase.
- Your role is to agree (approve) their progress as presented, or not. If not, direction on what is missing should be provided.
- Decisions will be made by 2/3 vote.

Planning activities were convened under the direction of Lake County OES and with the support of an inter-departmental working group in phases. Each phase consisted of working group activities, a public information session and a HMPC meeting.

Stakeholders<sup>3</sup> were invited and encouraged to participate in the entire planning process through regular invitations and updates. OES utilized its Operational Area Emergency Coordinators Group (comprised of over 100 individuals/agencies with a stake in disasters and special populations within the County). See Figure 1 for an example of one such invitation.

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<sup>3</sup> Element A2.(b)

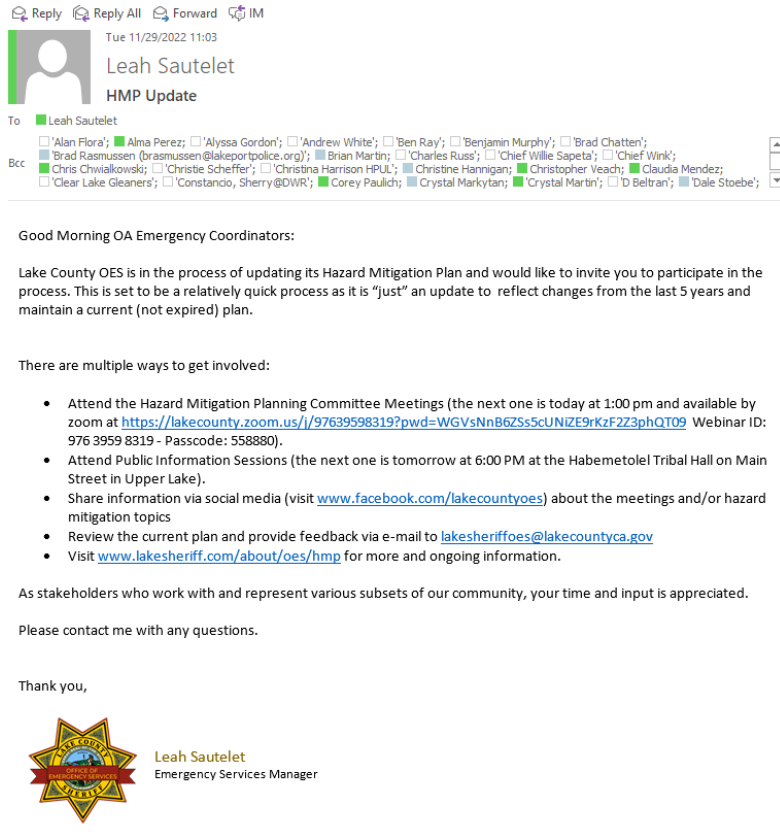


Figure 1 Example Stakeholder Invitation to Participate in the Hazard Mitigation Planning Process from November 29, 2022

All who attended the Planning Committee meetings were encouraged to participate in the process. Table XX shows a list of individuals, their affiliation and # of meetings or public information sessions attended. **Insert table from Alma's Draft**

### Assess Community Support

Lake County OES conducted a survey to assess the community's knowledge of and support for hazard mitigation planning. The survey was open for one month and available to complete online or in-person. The survey was posted to the website, on social media, delivered by e-mail, available on paper in person at the library branches and the Hazard Mitigation Public Information Session #1.

The survey responses assisted staff in determining community support and developing outreach to enhance understanding, awareness and support of the project. Key findings:

- 62.1 percent had no previous awareness of the County Hazard Mitigation Plan.
- 60 out of 66 people who responded were signed up for LakeCoAlerts.
- Social media, email, and direct mailings were the top three most efficient ways to receive information about disaster preparedness.

- 89.4 percent agreed that wildfire is the greatest natural hazard to Lake County.
- 53 out of 66 respondents have been impacted by a natural disaster with a majority of the responses relating to wildfire.

Overall, Lake County’s community knowledge of Hazard Mitigation Planning has relatively stayed the same since the last update. In both the 2018 update and the current update, the surveys revealed that wildfire is still the highest concern.

### Engage the Public

Lake County OES acknowledges that its mission cannot be met without the valuable input, participation and active engagement of its partners: governmental, public and private sector and the general public (individuals).

At the onset of hazard mitigation planning for this update, public input was sought.<sup>4</sup> OES actively worked to reach as much of the community as possible, utilizing multiple methods, including:

- Public Information Sessions held at various locations around the County and online.
- A dedicated webpage: [www.lakesheriff.com/about/oes/hmp](http://www.lakesheriff.com/about/oes/hmp)
- County Library Stations – in-person
- Press Releases (featured on local radio/news outlets)
- Paid advertising on local radio.
- Public information boards in various locations including the County Courthouse.
- Social media outreach ([www.facebook.com/lakecountyoes](https://www.facebook.com/lakecountyoes)) and often shared by the County of Lake and Lake County Sheriff’s Office social media accounts.

In-person stations at the County library branches were set-up to reach and encourage subsets of the population that may not have access to the internet, social media, transportation, etc. Each “station” allowed for individuals to visit in-person and learn about hazard mitigation planning and participate in the process.

### Profiling Lake County

#### Integration and Coordination with Other Planning Efforts

Understanding other planning efforts within the County is vital for a complete hazard mitigation plan and so as to not duplicate efforts. Throughout the update process the following were consulted, reviewed, referenced and evaluated:

- Community Wildfire Protection Plan: identifies risks to improve response, community preparedness and reduce wildfire impacts.
- California State Hazard Mitigation Plan: reduces and eliminates potential risks and better prepares communities for disaster resilience.

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<sup>4</sup> A3.(a)

- Lake County General Plan (Safety Element): developed to integrate existing plans, the protection of the County’s natural resources, economic development, and housing opportunities.
- City of Clearlake Hazard Mitigation Plan: reduces the impacts of natural hazards to the citizens, property, and critical infrastructure to the City.
- City of Lakeport Hazard Mitigation Plan: protects the people and property from the effects of natural disaster and hazard events in the City and planning area.
- County of Lake (OES) Emergency Operations Plan and Annexes: provides direction and support for County-wide events of catastrophic nature.

### Risk Assessment

Prior to fixing a problem, it is necessary to define and quantify it. This risk assessment followed the methodology described in the FEMA publication Understanding Your Risks—Identifying Hazards and Estimating Losses (FEMA 386-2, 2002), which breaks the assessment down to a four-step process:

1. Identify hazards
2. Profile hazard events
3. Inventory assets
4. Estimate losses

Lake County OES and the HMPC conducted a hazard identification study to determine the hazards that threaten the Planning Area. This section details the methodology and results of this effort. The process included examination of previous disaster declarations, hazards included and excluded in the 2018 Plan, other possible hazards that may impact Lake County and consideration of the potential future impacts/changes to disasters due to climate change, ongoing drought and changes to the landscape due to previous wildfires.

### Disaster Declarations

Since the date the current Hazard Mitigation Plan was written, Lake County experienced 11 additional disasters. Perhaps most notably: the COVID-19 pandemic. While there was potential for a pandemic, the hazard had not been profiled in the previous HMP. A comprehensive list of historical disasters with the addition of those occurring since the last Plan Update is included in Table 6.

*Table 4 Lake County Disaster Declarations*

Year	Disaster Name	Disaster Type/Cause	Disaster #	State Declaration Date Federal Declaration Date
2022		Tree Mortality	Local Declaration	05/10/2022 --

Year	Disaster Name	Disaster Type/Cause	Disaster #	State Declaration Date
				Federal Declaration Date
2021 & Ongoing	Drought	Drought		10/19/2021 03/05/2021
2021	Cache Fire	Wildfire		09/07/2021 --
2020	COVID-19	Pandemic	DR-4482-CA	-- 03/22/2020
2020	August Complex Fire	Lightning strikes		09/25/2020 --
2020	LNU Lightning Complex Fire	Lightning	5331	-- 08/18/2020
2019		Severe Storms	4434	02/28/2019 05/17/2019
2019	Kincaid Fire	Wildfire		10/25/2019 --
2018	Mendocino Complex Fire	Wildfire	5262	-- 07/28/2018
2018	Pawnee Fire	Wildfire	5244	-- 06/24/2018
2018	Steele Fire	Wildfire		07/28/2018 --
2017	California Severe Winter Storms, Flooding, Mudslides	Flood Storms	DR-4301	- 02/17/2017
2016	Clayton Fire	Fire	FM-5145	- 08/14/2016
2015	Valley Fire and Butte Fire	Fire	DR-4240	- 08/22/2015
2015	Valley Fire	Fire	FM-5112	- 09/12/2015
2015	Rocky Fire	Fire	FM-5093	- 07/29/2015
2014	California Drought	Drought	GP 2014-13	1/17/2014 -
2012	Wye Fire	Fire	FM-5004	- 08/13/2012

Year	Disaster Name	Disaster Type/Cause	Disaster #	State Declaration Date
				Federal Declaration Date
2006	2006 June Storms	Flood Storms	DR 1646	- 06/05/2006
2005/ 2006	2005/06 Winter Storms	Flood Storms	DR-1628	- 02/03/2006
2005	Hurricane Katrina Evacuations	Economic Hurricane	EM-3248 2005	- 09/13/2005
2003	State Road Damage	Road Damage Flood	GP 2003	1/1/2003 -
2001	Energy Emergency	Economic Greed	GP 2001	1/1/2001 -
1998	1998 El Nino Floods	Flood Storms	DR-1203	Proclaimed 02/19/1998
1997	1997 January Floods	Flood Storms	DR-1155	1/2/97-1/31/97 1/4/1997
1996	Lake County Fire	Fire	DC-96-03	- 08/1/1996
1995	California Severe Winter Storms, Flooding, Landslides, Mud Flows	Flood Storms	DR-1046	Proclaimed 03/12/1995
1995	1995 Severe Winter Storms	Flood Storms	DR-1044	1/6/95-3/14/95 1/13/1995
1987	1987 Fires	Wildfire	GP	9/10/87, 9/3/87 -
1986	1986 Storms	Flood Storms	DR-758	2/18-86-3/12/86 02/18/1986
1985	Hidden Valley Lake Fire	Fire	FM-2055	- 7/11/1985
1983	Winter Storms	Flood	DR-677	12/8/82-3/21/83  2/9/1983
1980	April Storms	Flood Storms	-	4/1/1980 -
1979	Gasoline Shortage	Economic OPEC	-	5/8/1979-11/13/79 -



Year	Disaster Name	Disaster Type/Cause	Disaster #	State Declaration Date Federal Declaration Date
1977	1977 Drought	Drought	EM-3023	1/20/1977 -
1972	1972 Freeze	Freeze	-	7/13/1972 -
1970	1970 Freeze	Freeze	-	5/1/70, 5/19/70, 6/8/70, 6/10/70, 7/24/70 -
1970	1970 Northern California Flooding	Flood	DR 283	1/27/1970 -3/2/1970 2/16/1970
1964	1964 Late Winter Storms	Flood Storms	DR-183	- 12/24/1964
1963	1963 Floods and Rains	Flood Storms	DR-145	2/7/63, 2/26/63, 2/29/63, & 4/22/63  2/25/1963
1963	1963 Floods	Flood Storms	-	2/14/1964 -
1958	1958 April Storms and Floods	Flood Storms	DR-52	4/5/1958 4/4/1958
1958	1958 February Storms and Floods	Flood Storms	CDO 58-03	2/26/1958 -
1955	1955 Floods	Flood	DR-47	12/22/1955 12/23/1955
1950	1950 Floods	Flood	OCD 50-01	11/21/1950 -

#### Hazard Identification

The 2018 Plan Hazards List was reviewed with discussion and input from the working group, public sessions, public survey and the HMPC to:

- identify hazards not previously included
- remove hazards no longer relevant
- agree on a complete list that could affect Lake COUNTY OF LAKE

Results from this process, in order of perceived importance is include in Table 7).

Table 5 Hazards for 2023 Inclusion Ranking

<b>Hazard</b>	<b>Included in 2018 Plan?</b>	<b>Include in 2023 Update?</b>	<b>Identified as Most Important</b>
Drought & Water Shortage	Yes	Yes	100%
Wildfire	Yes	Yes	89%
Earthquake	Yes	Yes	78%
Severe Weather: Storms (Heavy Rain, Wind, Snow, Freeze)	Yes	Yes	78%
Epidemic/Pandemic/Vector Borne Disease Hazards	No	Yes	67%
Severe Weather: Extreme Heat	Yes	Yes	67%
Aquatic Biologic Hazards: Invasive Species	Yes	Yes	56%
Flood	Yes	Yes	56%
Tree Mortality	No	Yes	56%
Climate Change	Yes	Yes	44%
Landslide & Debris Flows	Yes	Yes	44%
Levee Failure	Yes	Yes	33%
Geothermal Concerns	No	No	
Hazardous Materials Transportation	Yes	No	
Oil Spills	No	No	
SEICHE	No	No	
Terrorism	No	No	
Ag Hazards (i.e. insect pests/smoke taint)	Yes	Yes	11%
Air Pollution	No	No	
Dam Failure	Yes	No	
Volcano	Yes	Yes	11%
Avalanche	No	No	
Coastal Flooding/Erosion, Sea Level Rise	No	No	
Radiological Accidents	No	No	
Subsidence	Yes	Yes	0%
Tsunami	No	No	

Discussion ensued regarding the Severe Weather categories and whether they should be combined into one single category or left separate. National Weather Service, Eureka provided input during a Hazard Mitigation Planning Committee meeting that ultimately settled the discussion: extreme heat should be its own category as it differs greatly and all others could be covered by storms (rain, snow, freeze, wind). Continuing input from the NWS, and group discussion flood previously separated in to two categories: 100/500 year & Localized/Storm water will now be one category as Lake County does not have major rivers or other terrain that would be subject to a vast difference between the separate flood categories.

Tree Mortality was not included in the previous plan, but has been since declared a local emergency. Discussion included whether to leave it as its own category or discuss it in relation to other topics such as drought. Ultimately it was decided to maintain it as its own hazard so it doesn't get lost within other hazards and to help address the issue of the beetle.

Aquatic Biologic Hazards was previously two separate, but specific categories (Quagga mussel and cyanobacterial bloom). The HMPC decided to combine the categories and not limit the hazard to the two specific hazards, so in this updated plan the category is Aquatic Biological Hazards: Aquatic Invasive Species.

The HMPC discussed at length whether to include hazards other than natural and ultimately decided against non-natural hazards so the following were either removed or not considered: Hazardous Materials Transportation, Energy Shortage, Dam Failure (other than in relation to a natural hazard) and Industrial Accidents/Activities. It is reasonable to expect further consideration of these in future plan updates.

The HMPC determined which hazards to focus on by ranking each hazard for:

- Geographic Extent
  - Limited: Less than 10% of planning area
  - Significant: 10-50% of planning area
  - Extensive: 50-100% of planning area
- Probability of Future Occurrences
  - Highly Likely: Near 100% chance of occurrence in the next year, or happens every year.
  - Likely: Between 10 & 100% chance of occurrence in the next year, or has a recurrence interval of 10 years or less.
  - Occasional: Between 1 and 10% chance of occurrence in next year, or has a recurrence interval of 11 to 100 years.
  - Unlikely: Less than 1% chance of occurrence in next 100 years, or has recurrence interval of greater than every 100 years.
- Magnitude/Severity
  - Catastrophic: More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths.
  - Critical: 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability.
  - Limited: 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable, do not result in permanent disability.
  - Negligible: Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid.

- Significance
  - Low: minimal potential impact
  - Medium: moderate potential impact
  - High: widespread potential impact
- Climate Change Impact
  - Low: Climate change is not likely to increase the probability of this hazard.
  - Medium: Climate change is likely to increase the probability of this hazard.
  - High: Climate change is very likely to increase the probability of this hazard.

*Table 6 Hazard Identification Table*

Hazard	Geographic Extent	Probability of Future Occurrences	Magnitude/Severity	Significance	Climate Change Influence
Aquatic Biological Hazards: Aquatic Invasive Species	Significant	Highly Likely	Limited	High	High
Drought and Water Shortage	Extensive	Likely	Critical	High	High
Earthquake	Extensive	Likely	Critical	High	Low
Epidemic/Pandemic/Vector Borne Disease Hazards	Extensive	Likely	Limited	High	Low
Flood	Significant	Likely	Limited	Medium	High
Landslide and Debris Flows	Significant	Likely	Limited	Medium	Medium
Levee Failure	Significant	Likely	Limited	Medium	Medium
Severe Weather: Extreme Heat	Extensive	Highly Likely	Critical	Medium	High
Severe Weather: Heavy Rains, Snow, Storms, and High Winds	Extensive	Highly Likely	Critical	High	High
Subsidence	Limited	Unlikely	Limit	Low	Low
Tree Mortality	Extensive	Highly Likely	Critical	High	High
Volcano	Significant	Unlikely	Critical	High	Low
Wildfire	Significant	Highly Likely	Critical	High	High