



Hazard Mitigation Planning Committee

Meeting #2

Date: 23 January 2024 **Meeting at:** Microsoft Teams Meeting (see meeting

information in the calendar invite)

Project: County of El Dorado Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) Update

Hazard Mitigation Planning Committee (HMPC) Meeting #2

Present:

Adam Brown Georgetown Divide Public Utility District

Bill Sugiyama El Dorado County Emergency Medical Services Agency

Brent Balderson Tahoe City Public Utility District

Brittany DiTonno El Dorado Hills Community Services District

Chrishana Fields El Dorado Hills Fire Department

Cleve Morris City of Placerville

1:00 p.m. - 3:00 p.m. PST

David Marino El Dorado County Roads - Maintenance Division

Elizabeth Pope Placer Independent Resource Services

Eric Taylor Placerville Police Department Francisco González Tahoe City Public Utility District

Jim Drennan City of South Lake Tahoe

Jeff Brislawn WSP Josh Schnitzlein WSP Juliana Prosperi WSP

Justin Cisneros El Dorado County Surveyors Office

Ken Pimlott El Dorado County Office of Wildfire Preparedness and Resilience

Kim Gustafson Grizzly Flats Community Services District

Kim Nielsen Cal OES

Kristine Guth El Dorado County EMS and Emergency Preparedness

Lee Kiolbasa Liberty Utilities

LeeAnne Mila EDC Agriculture Commission

Liz Heape-Caldwell Elder Options

Makenzie Gold Food Bank of El Dorado County

Mark Moss El Dorado County Environmental Management

Martin Goldberg Lake Valley Fire Protection District

Melissa Baum WSP

Michael Grassle Cameron Park Community Services District

Michael Ungeheuer El Dorado County Public Health

Michael Sumersille Marshall Hospital

Matthew Minson, MD El Dorado County Health and Human Services

Mike Sproull Food Bank of El Dorado County
Philip Jones El Dorado County Office of Education





Rebecca Howard El Dorado County Emergency Preparedness

Robert Kohlstedt Shingle Springs Rancheria

Mark Magee Rolling Hills Community Services District

Scott Bare El Dorado County OES

Thea Graybill El Dorado County Planning and Building Department

Thea Schwartz Barton Hospital

Tim Cordero El Dorado County Fire Department

Tom Meyer El Dorado County Office of Wildfire Preparedness and Resilience

Agenda Topics

1. Introductions

Ms. Juliana Prosperi initiated the meeting with a self-introduction, followed by introductions of the WSP consulting team members: Mr. Jeff Brislawn, Mr. Josh Schnitzlein, and Ms. Melissa Baum. Scott Bare introduced himself as the primary contact for the County. Ms. Prosperi proceeded to introduce Slido, a feedback tool employed by WSP to engage participants in virtual meetings.

2. Review of the Hazard Mitigation Process

Ms. Prosperi discussed FEMA's four planning phases and the nine detailed steps contained within those phases. The Team has completed Phase 1, "Organize Resources." This phase included the following steps:

- 1. Determine the Planning Area and Resources
- 2. Build the Planning Team
- 3. Create an Outreach Strategy
- 4. Review Community Capabilities

The Team is now carrying out Phase 2 of the planning process, "Assess Risks." Contained within this phase is Step 5, "Conduct a risk assessment." The next phase and step will be "Develop a Mitigation Strategy."

Ms. Prosperi reiterated the importance of having a MHJMP. The updated MJHMP presents an opportunity for projects to qualify for grant funding, with a focus on hazard mitigation. The 2018 Disaster Recovery Reform Act (DRRA) introduced wildfire funding and consolidated the Pre-Disaster Mitigation (PDM) program under the Building Resilient Infrastructure and Communities (BRIC) program. PDM concentrated on construction projects, flood controls, buyouts, and elevation of structures, while BRIC focuses on microgrids, public health enterprise planning, lifeline transportation integrity, and other innovation projects. There are now additional grants available for wind and earthquake hazard mitigation.

3. Update on Public Involvement Activities

Ms. Prosperi reviewed public outreach and engagement with the planning process. This has included the first HMPC meeting (focused on the planning process), two public workshops to occur during the development of the plan and again once the plan is available for public review, and a public survey. She then reviewed the MJHMP update webpage, where the draft MJHMP will be posted for public comment.





Ms. Prosperi reviewed some of the public input the planning team has received from the public survey, which indicated that the hazards that the public are most concerned about are wildfire and extreme heat. Additionally, plan update guides from the jurisdictions participating in the MJHMP provided information about development and hazard risk in the County.

Ms. Prosperi then initiated the first Slido poll, asking participants "Which non-profit organizations or community-based organizations (CBOs) advocate for or serve vulnerable populations in your jurisdiction? (Please include your jurisdiction)." The responses are as follows:

- Cameron Park CSD:
 - Cameron Park Chamber of Commence
 - Cameron Park Community
 Foundation
 - Cameron Park Fire Safe Council
 - Cameron Park Rotary
 - Food Bank of El Dorado County
- Grizzly Flats CSD:
 - o Grizzly Flats Fire Safe Council
 - Leoni Meadows Camp
- EDCOE:
 - ELFS "Early Learning & Family Support"
 - Head Start Programs
 - Homeless Support
 - o Infant Development Program
 - Mental Health & Wellness

- Alta Regional
- El Dorado Community Health Center
- El Dorado County APS
- El Dorado County Area Agency on Aging
- Elder Options Inc.
- Family Resource Center (FRC) in South Lake Tahoe
- Housing El Dorado
- Other farm agencies...including Farm Bureau
- Placer Independent Resource Services
- Shingle Springs, Health & Wellness

Ms. Prosperi explained to the group that additional public outreach will be needed to ensure the public survey and other efforts are made to engage these organizations.

4. Hazard Identification and Risk Assessment Overview

Ms. Prosperi covered terminology that would be used during the hazard identification and risk assessment (HIRA) overview. She clarified the difference between vulnerability, exposure, and risk, and explained what was meant by the terms "hazard" and "mitigation."

She then discussed the two main components of the risk assessment: hazard identification (what can happen here) and vulnerability assessment (what will be affected). Ms. Prosperi outlined the risk assessment requirements and introduced Mr. Schnitzlein and Ms. Baum to discuss each hazard profile.

Avalanche

- There have been 18 avalanches in the County since 1950 that resulted in nine deaths and
- Five avalanche incidents occurred in the County during 2022-2023 season; none of which resulted in deaths or injuries.
- Most of these events occur along the Sierra Nevada crest.





A CASE	
Dam Failure	 49 total dams in El Dorado County according to the Division of Safety of Dams (DSOD) database as of January 2024. Of the 49 dams, 16 are classified as "High Hazard" and five are classified as "Extremely High Hazard." Six High Hazard dams outside of the County could pose a threat of inundation: one in Alpine County, one in Amador County, and four in Placer County.
Debris Flow and Landslide	 Slope instability and debris flow hazards are generally found in the eastern County. Historical and potential debris flow areas include Highway 50 corridor east of Pollock Pines and State Route 49 corridor north of Cool. 13 FEMA disaster declarations involving mudflows, mudslides, or landslides in the County between 1950-2023.
Drought, Water Shortage, and Tree Mortality	 County has a history of drought and water supply challenges. 28.8 million trees experienced tree mortality in California in 2023, with 1.4 million of those trees being in the County. High likelihood of reoccurrence.
Earthquake	 The County lies between two seismically active regions; County itself is traversed by a series of northwest-trending faults, called the Foothill Fault Zone and the West Tahoe Fault Zone in the Tahoe Basin. Although no major earthquakes have been recorded within the County, the County has felt ground shaking from earthquakes located elsewhere. Based on historical data and the location of the County relative to active and potentially active faults, the County could experience a damaging earthquake occasionally.
Erosion	 The American and Consumes Rivers flow through El Dorado County. Parts of Highway 50 and County roads have eroded due to high velocity flows from storms. While erosion is likely to happen annually, it is geographically limited to areas that can experience lateral erosion.
Extreme Heat	 Between 2000 and 2023, 13 injuries and 21 deaths resulted from eight events. Rolling blackouts and Public Safety Power Shutoffs (PSPSs) are cascading hazard associated with extreme heat events. The number of extreme heat days in the County (regionally defined as >92.4 °F) is projected to rise by 54 days by the end of century; and the number of warm nights (regionally defined as >60.4 °F) is projected to rise by 53 days by the end of century.
Flood	 Flooding is one of the most serious climate-related hazards, and extreme precipitation due to atmospheric river events often results in localized rain on snow flooding across the County. Current infrastructure is not designed to capture the increased runoff associated with climate change. Loss of snowpack will lead to increased winter flows and flooding, and reductions in warm season flows.

Seiche

- Within El Dorado County, locations with the highest probability of impact are shore areas of Lake Tahoe from 0 to 30 feet above mean lake water level.
- Computer models suggest the largest waves of a seiche event could hit Sugar Pine Point, Rubicon Point, and the casinos in South Lake Tahoe.
- There have been no occurrences of major seiche activity at Lake Tahoe in recent years.

Severe Weather: General

Severe weather usually occurs in the County as localized thunderstorms with heavy rain, winter storms, and strong winds that occur during the winter and spring months.





- Agricultural industry is the most vulnerable asset to severe weather. Agricultural losses on the West Slope resulting from natural hazards can have dramatic impacts on the economic health of the County.
- Since 1950 there has been over 900 events leading to \$5,000,000 in property damages, over \$200,000 in crop damages and resulting in 28 deaths and 88 injuries.

Severe Weather: Heavy Rain, Thunderstorms, Hail and Lightning

- Heavy rain events have occurred 156 times since 1950, resulting in over \$10,000,000 in property damages.
- Precipitation trends are expected to swing toward extreme values from both directions (drought and deluge). Maximum 1-day precipitation could hit 5.5 inches by mid-century; maximum length of dry spell could reach more than 130 days in the West Slope by the end of the century.
- Precipitation will change over time with an overall concentration of events over a shorter period that will increase the likelihood of flooding.

Severe Weather: Heavy Snow and Winter Storms

- Since 1950, there have been over 500 reports of winter storms that caused over \$2,000,000 in property loss in combination with five deaths and nine injuries in the County.
- Increased snow loads are exacerbated by higher moisture content in the snow that increases the weight of the snow on structures. If the snow load exceeds the weight the building was designed to withstand, the roof or the entire structure can fail.
- The most significant secondary hazards associated with severe local storms are flash floods, falling and downed trees, landslides, and downed power lines.

Severe Weather: Tornados and High Winds

- Since 1950 there have been 225 high wind events and five tornado events, causing five deaths, two injuries and over \$14,000,000 in property damages.
- State disaster declarations occurred in 1958 (twice), 1964 (twice), 1969, 1973, 1983, 1986, 1993, 1997, 2006 (twice), and 2008. Federal disaster declarations occurred in 1958, 1964, 1969, 1983, 1986, 1995 (twice), 1997, twice in 2006 and three times in 2017.
- A HMPC participant added "There have been what appears to be small tornadoes in Grizzly Flats since the Caldor Fire, and a definite increase in high winds."

Subsidence

- El Dorado County's vulnerability to subsidence rests with abandon mines and culverts.
 Most of these abandoned mines are located west of Pollock Pines with several located in the Placerville, Coloma, Diamond Springs, Georgetown, Cool, Swansboro, Somerset, Grizzly Flats, Mt. Aukum, Shingle Springs, Rescue and Cameron Park.
- A HMPC participant noted: "Grizzly Flats experienced a large sink hole on Tyler Drive after the Caldor Fire in 2021."

Wildfire

- The 2020 fire season broke records, as five of the State's six largest wildfires burned at the same time throughout California, destroying homes, forcing people to evacuate, and exposing millions of people to poor air quality.
- The County was impacted by the Caldor Fire in 2021 and the Mosquito Fire in 2022.

Following the presentation, Ms. Prosperi used Slido to ask participants "Do you agree with these ratings? Is there anything we should change?" Responses were as follows:

- Cameron Park Community Services District:
 - Cameron Park specifically is a high flood risk area. Last year in New Years Eve, 131 homes had significant flood damage. A majority of these homes have some kind of flood damage every 5 years or so.

WSP Environment & Infrastructure, Inc. 10940 White Rock Road, Suite 190 Rancho Cordova, CA 95670





- City of Placerville
 - Lake Tsunami is ow.
- El Dorado County Office of Education
 - o Drought should be rated higher; possibly alter to medium as several sites on wells.
 - o Drought should be medium.
- Georgetown Divide Public Utilities District:
 - o Erosion should be rated higher.
 - Seiche should be rated lower.
 - Heavy snow should be rated higher.
 - Snow should be medium or high.
- Is there greater detail on flooding hazard related to dam failure at Sly Park based on topography south of the lake specific to communities (i.e., Sierra Springs, etc.)?
- Extreme heat may need more discussion.
- I agree with the poll overall. For us specifically, I would say heavy snow and winter storms would be higher.
- I believe that flooding should be slightly higher. Last year was a wild winter, but it already seems like this year will be the same and a reoccurring issue. Parts of the Cosumnes River broke the banks this past weekend already.
- I agree with the rankings (SLT Fire).

5. Review Mitigation Goals and Objectives

Ms. Prosperi then reviewed mitigation goals and objectives from the general plan, the prior LHMP, and the 2023 California State HMP. She used Slido to ask participants to "Add or revise one goal to focus on lifelines, at-risk communities, or climate adaptation." Reponses are as follows:

- Goal 3 for the states goal would be difficult for the County to achieve.
- Is goal 2 intended to increase resiliency for the whole community or just our underserved populations? It appears to read as applying only to our underserved populations.

6. Mitigation Strategy Update

Ms. Prosperi explained that the aim of the mitigation strategy was to create new mitigation goals. While goals are broad visions to mitigate future hazards, objectives are the ways in which those goals can be accomplished, and strategies are the specific actions necessary to complete those objectives. Mitigation action types include nature-based solutions, engineering, public information, education, and outreach.

While goals are required for the MJHMP, objectives are optional. Ms. Prosperi encouraged participants to begin thinking about new actions before the next and final HMPC meeting. In addition to needing at least one action per hazard, the plan requires updates on the status of current actions. A mitigation action tracker will be send out before the end of the week, and responses will be required before February 26.

7. Schedule and Next Steps

- Public Workshop #1 tentatively scheduled for February 2024
- HMPC Meeting #3 tentatively scheduled for early March 2024





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- Public Workshop #2 tentatively scheduled for late March 2024
- Public Review Draft MJHMP (Base Plan + Annexes) expected by March 2024.
- Complete the online survey at by February 1, 2024 (https://forms.office.com/r/rY9yP5Tp3k)
 - o Circulate the Online Survey on your City or Special District's Main Webpage
- El Dorado County: Stay tuned for the Mitigation Action Tracker Form to review progress on mitigation actions by this Friday, January 26th.

The meeting adjourned at 3:32 PM.



El Dorado County Multi-Jurisdictional Hazard Mitigation Plan Update

Hazard Mitigation Planning Committee Meeting #2

January 23, 2024 – 1:00 pm – 3:00 pm



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Agenda

- 1. Introductions
- 2. Review of the Hazard Mitigation Process
- 3. Update on Public Involvement Activities
- 4. Hazard Identification and Risk Assessment Overview
- 5. Review Mitigation Goals and Objectives
- 6. Plan Update Guides
- 7. Mitigation Strategy Update
- 8. Schedule and Next Steps





Meeting Logistics

- Please mute your mic when not speaking.
- ...but please feel free to unmute when you have something to say!
- You can also use the chat log to make comments, ask questions, or provide information.
- Slides and meeting summary will be made available.
- Meeting will use Slido polls to get feedback from participants.
 - Join at slido.com #EIDoradoHMP





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Teams Overview | Comparison |

Introductions





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Introductions

El Dorado County Sheriff's Office

- Scott Bare
- Greg Almos
- Moke Auwae
- Michael Lilienthal
- Troy Morton
- Leslie Schlag
- Jeff Whitlock
- County Emergency Management Coordinators
- Federal & State Partners
- Other Stakeholders

WSP Environment & Infrastructure Project Team

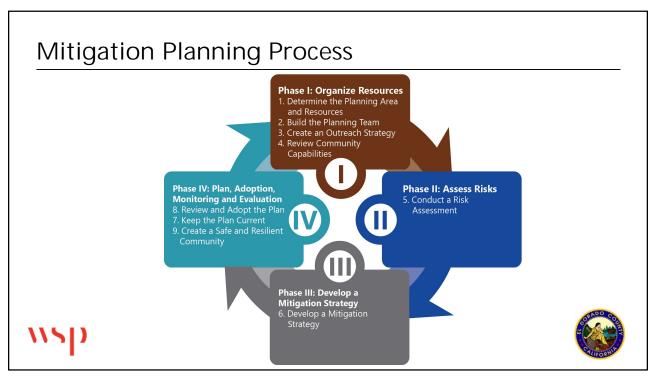
- Juliana Prosperi, AICP Project Manager
- Jeff Brislawn, CFM Hazard Mitigation Technical Lead
- Melissa Baum Hazard Mitigation Planner
- Josh Schnitzlein Senior Environmental Planner
- Mack Chambers GIS Specialist
- Donna Valasek GIS Specialist

Jurisdictional representatives & stakeholders Type your name, title, and affiliation in chat box

Review of the Hazard Mitigation Planning Process





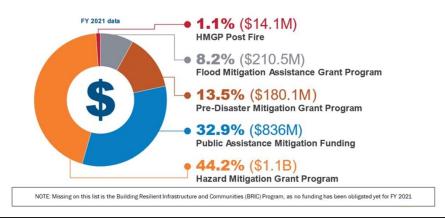


2018 Disaster Recovery Reform Act (DRRA)

- Mitigation
 Planning: Increased
 Funding Available
- Wildfire: Fire Management Assistance Grants
- Wind, Earthquake: Additional Grants Available
- Resiliency Projects : BRIC Grant Program

wsp

In FY2021 more than \$2.34B in Hazard Mitigation Assistance Grants and Public Assistance Mitigation funds were delivered to states, local communities, tribes, and territories, resulting in mitigation actions that will reduce risk.



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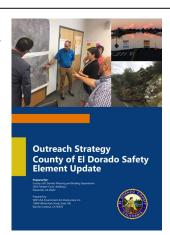
Update on Public Involvement Activities





Public Outreach Strategy: Toolbox

- County's MJHMP Webpage: https://www.edcgov.us/Government/sheriff/Support/Pages/office_of_emergency_services_(oes).aspx
- HMPC Meeting #1: November 27, 2023
- Two Public Workshops
 - Public Workshop #1 TBD
- Public Workshop #2 TBD
- HMPC Meeting #3: Tentatively schedule for late Feb/early March
- Public Survey available through February 1st: http://bit.ly/4bcjkDd
 - 107 responses submitted to date
- Press Releases and E-News Blasts on Social Media
- Engaged CBOs, NGOs, and Other Stakeholders
 - Option for In-Person Focused 1-on-1 Meetings
- Public Review Draft MJHMP Update will be posted online

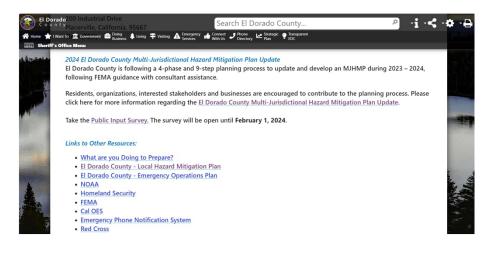


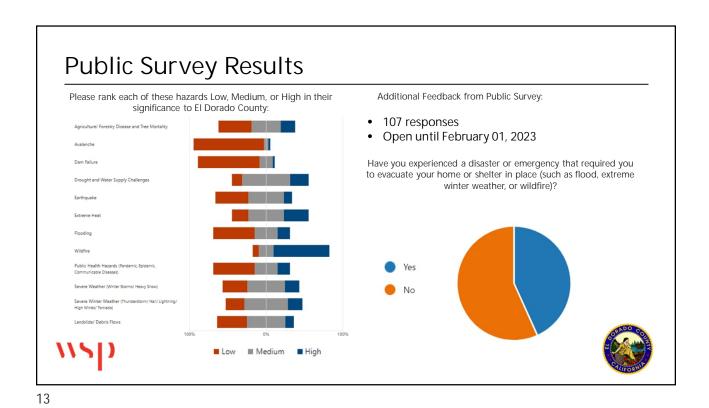


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Public Involvement Activities: MJHMP Update

Webpage: https://www.edcgov.us/Government/sheriff/Support/Pages/office_of_emergency_services_(oes).aspx





Build a Planning Team

- Participating Jurisdictions
 - City of Placerville
 - Georgetown Divide Public Utility
 District
 - County Office of Education
 - Cameron Park CSD
- County Staff
 - Sheriff's Office
 - Environmental Management
 - Emergency Medical Services Agency
 - Agriculture Commission
 - Planning and Building Department

- Federal Agencies
 - -FEMA Region IX
- -National Oceanic Atmospheric Administration/National Weather Service
- State Agencies
 - California Office of Emergency Services
 - California Natural Resources Agency
 - California Department of Fire Protection and Forestry
 - Other
 - El Dorado County Water Agency
 - Fire Safe Council

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Stakeholders

- Alliance of Regional Collaboratives League to Save Lake Tahoe for Climate Adaptation (ARCCA)
- American River Conservancy
- Barton Hospital
- CAL FIRE
- California Tahoe Conservancy
- Camp Richardson Resort
- Clarksville Region Historical Society
- County Agencies
- County Resource Conservation
- El Dorado Community Foundation New Morning Youth and Family
- El Dorado County Farm Trails Association
- El Dorado Hills Chamber of Commerce

- Local Religious Organizations
- Local Community Service Districts
- Local Fire Districts
- Local Public Utilities Districts
- Local Schools, Districts, and Colleges
- Major local employers
- Marshall Hospital and Medical Center
- Meyers Community Foundation
- Neighboring Counties
- Services
- NGOs and CBOs
- Shingle Springs Bank of Miwok **Indians**

- Sierra Climate Adaptation and Mitigation Partnership (Sierra CAMP)
- Sierra Nevada Alliance
- South Lake Tahoe Family Resource Center
- Tahoe Chamber of Commerce
- Tahoe Prosperity Center
- Tahoe Regional Planning Agency
- Tahoe Transportation District
- The Mountain Pact
- Valley Vision
- Washoe Tribe of Nevada and California
- Water Districts and Agencies





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slido



Which non-profit organizations or community-based organizations (CBOs) advocate for or serve vulnerable populations in your jurisdiction? (Please include your jurisdiction)

① Start presenting to display the poll results on this slide.

Hazard Identification and Risk Assessment Review





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Terminology

- Hazard: Act or phenomenon with potential to do harm
- Vulnerability: Susceptibility to harm, damage, loss
- Exposure: People, property, systems or functions that could be lost to a hazard
- Risk: Combines hazard, vulnerability, exposure and probability
- Mitigation: Actions taken in advance of a hazard's impact that reduce its severity





Conducting a Risk Assessment: Requirements

- Hazard identification and profiling (what, where, how often, how bad)
- Vulnerability Assessment (what will be affected?)
 - Estimate losses by jurisdiction
 - Assess vulnerabilities of Critical Facilities
 - Assess Mitigation Capabilities
 - Assess how will each be affected:
 - Population
 - Property
 - Critical facilities and infrastructure
 - Economy
 - Environment and cultural resources



Hazards





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Risk Assessment: Hazard Profiles

Hazard/Problem Description

• Area, Seasonal Patterns, Speed of Onset/Duration

Geographic Location

- Limited: Less than 10% of Planning Area
- Significant: 10-50% of Planning Area
- Extensive: 50-100% of Planning Area

Past Occurrences

 Information on Historical Incidents, Known **Impacts**

Extent (Magnitude/Severity)

- Catastrophic: More than 50% of property severely damaged
- Critical: 25-50% of property severely damaged
- Limited: 10-25% of property severely damaged High: Widespread potential impact

• Negligible: Less than 10% of property severely damaged

Probability of Future Occurrences

- Highly Likely. Near 100% chance of occurrence in next year
- *Likely*: Between 10-100% chance of occurrence in next year
- Occasional: Between 1-10% chance of occurrence in next year
- Unlikely: Less than 1% chance of occurrence in next year

Significance

- Low: Minimal potential impact
- Medium: Moderate potential impact



Recent Hazard Events in El Dorado County 1997 - 2023

Name	Disaster #	Year	State Declaration	Federal Declaration	Location
Winter Storms	DR-1155	1997	Yes	N/A	El Dorado County
Hollow Fire	FM-2532	2000	Yes	N/A	El Dorado County
2005/06 Winter Storms	DR-1628	2005-2006	Yes	Yes	El Dorado County
2006 Spring Storms	DR-1646	2006	Yes	Yes	El Dorado County
Angora Fire	FM-2700	2007	Yes	Yes	Meyers, South Lake Tahoe
January Storms	2008-01	2008	Yes	N/A	El Dorado County
King Fire	FM-5081	2014	Yes	Yes	El Dorado and Siskiyou Counties
January 2017 Storms	DR-4301	2017	Yes	Yes	El Dorado County
Late January 2017 Storms	DR-4305	2017	Yes	Yes	El Dorado County
February 2017 Storms	DR-4308	2017	Yes	Yes	El Dorado County
Severe Winter Storms	DR-4434	2019	Yes	Yes	El Dorado County (+17 additional counties)
Covid-19	EM-3428	2020	Yes	Yes	Statewide
Covid-19	DR-4482	2020	Yes	Yes	Statewide
Caldor Fire	FM-5413	2021	Yes	Yes	El Dorado County
Caldor Fire	EM-3571	2021	Yes	Yes	El Dorado County (+3 additional counties)
Wildfires	DR-4619	2021	Yes	Yes	El Dorado and Lake Counties
Mosquito Fire	FM-5453	2022	Yes	Yes	El Dorado and Placer Counties
Flood	EM-3591	2023	Yes	Yes	El Dorado County (+40 additional counties)
Flood	DR-4683	2023	Yes	Yes	El Dorado County (+43 additional counties)
Flood	EM-3592	2023	Yes	Yes	El Dorado County (+42 additional counties)
Severe Winter Storms	DR-4699	2023	Yes	Yes	El Dorado County (+45 additional counties)

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Hazards Review: Hazards of Potential Concern

- Avalanche
- Dam Failure
- Debris Flow and Landslide
- Drought and Water Shortage
- Earthquake
- Erosion
- Extreme Heat
- Floods (100/500-Year)

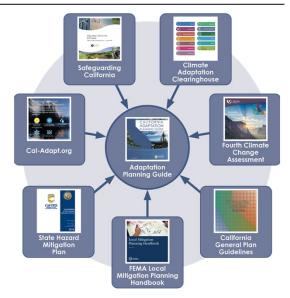
- Seiche (Lake Tsunami)
- Subsidence
- Severe Weather: Thunderstorms, Hail, Lightning, and Heavy Rain
- Severe Weather: Tornadoes and High Wind
- Severe Weather: Heavy Snow and Winter Storms
- Wildfire





Risk Assessment: Climate Change Considerations

- Addressed under each hazard profile as a factor intensifying impacts
- Discussion covers exposure (what climate change effects will impact the County and each jurisdiction)
- Risk and Onset (how likely are the impacts and how quickly will they occur)
- Assessment is focused on existing available studies and datasets
- Adaptive Capacity (what can be done?)



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Risk Assessment: Vulnerability Assessment

- Inventory of residential and commercial structures
- Parcel-level assessment (Assessor's data, general property)
- Inventory of County-owned critical facilities by FEMA's Community Lifelines
- Determine value of structures
- Determine the number of people in hazard areas
- Identify vulnerable infrastructure
- Identify development trends / constraints
- Identify historic, cultural, and natural resource areas
- Estimate losses

Vulnerability Assessment: Critical Facilities Exposure

1,274 critical facilities included in the Critical Facility GIS Database organized by the 8 FEMA Community Lifelines

- 428 Safety and Security (childcare, fire stations, government law enforcement, schools)
- 29 Food, Hydration, and Shelter (food banks, shelters)
- 110 Health and Medical (clinics/services, hospitals, nursing homes, programs)
- 30 Energy (power plants, substations)
- 268 Communication (cellular towers, microwave towers)
- 206 Transportation (Amtrack stations, aviation facilities, bridges)
- 8 Hazardous Material (facilities with RMPs or TRIs, Tier II facilities)
- 195 Water Systems (dams, water stations, water and wastewater treatment plants)

















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Review of Community Capabilities

What's already in place related to hazard mitigation?

- Inventory of existing policies, programs, and ordinances that affect County's vulnerability to hazards
 - 2004 General Plan (through 2019 amendments)
 - 2023 Draft Safety Element Update (in progress)
 - 2019 El Dorado County Local Hazard Mitigation Plan (LHMP)
 - 2022 Western El Dorado County Community Wildfire Protection Plan (CWPP)
 - 2024 Lake Tahoe CWPP (in progress)
 - 2023 Office of Wildfire Preparedness and Resilience (OWPR) Wildfire Strategy
 - 2023 Greater Placerville Wildfire Evacuation Preparedness, Community Safety, and Resiliency Plan
 - 2023 El Dorado Emergency Operations Plan
- Determine the communities' technical & fiscal abilities to implement mitigation initiatives.
- Include ability to attract and leverage funding.
- Evaluate the effectiveness of programs in place for mitigation opportunities.
- Consider any special opportunities to enhance or supplement these capabilities.



Avalanche

January 19, 2023, Avalanche off Monument Peak



 18 avalanches since 1950 that resulted in 9 deaths and 12 injuries in the County.

 5 avalanche incidents occurred in El Dorado County during 2022-2023 season; none resulted in deaths or injuries. Most of these events occur along the Sierra Nevada crest

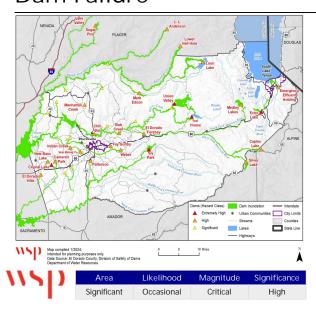
Area	Likelihood	Magnitude	Significance
Limited	Likely	Moderate	Low



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Dam Failure

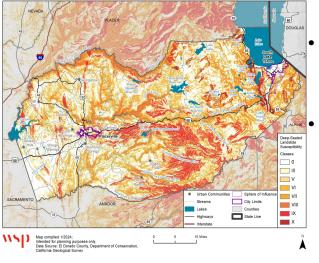


- 49 total dams in El Dorado County according to the Division of Safety of Dams (DSOD) database as of January 2024.
- Of the 49 dams,16 dams in the county are considered as a "High" hazard classification and 5 are considered to be "Extremely High".
- 6 High Hazard dams <u>outside</u> of the County that could pose a threat of inundation: 1 in Alpine County, 1 in Amador County, and 4 in Placer County.



Debris Flow and Landslide

Susceptibility to Deep-Seated Landslides



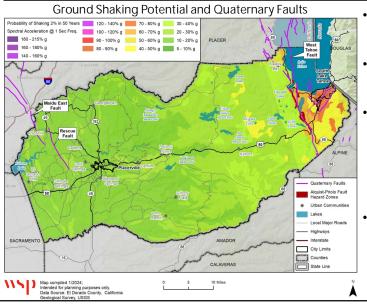
- Slope instability and debris flow hazards are generally found in eastern El Dorado County.
- Historical and potential debris flow areas include Highway 50 corridor east of Pollock Pines and State Route 49 corridor north of Cool.
- 13 FEMA disaster declarations involving mudflows, mudslides, or landslides in the County between 1950-2023.

	Area	Likelihood	Magnitude	Significance
L	imited	Occasional	Critical	Medium

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Drought, Water Shortage, and Tree Mortality County % Area in U.S. Drought Monitor Categories by Year 2023 El Dorado County Tree Mortality D0 (Abnormally Dry) D1 (Moderate Drought) D3 (Extreme Drought) Types of Drought Meteorological—a period of below average water supply. Agricultural—inadequate water supply to meet the needs of the crops and other agricultural operations such as livestock. Hydrological—deficiencies in surface and subsurface water Socioeconomic-impacts health, well-being, and quality of life, or when a drought starts to have an adverse economic impact on a region. Map compiled 1/2023; Intended for planning purposes only. Data Source: El Dorado County, USF Ecological—a prolonged and widespread deficit in naturally available water supplies - including changes in natural and managed hydrology — that create multiple stresses across Extensive Critical ecosystems.

Earthquake



- 1908 An estimated 4.0+ Richter magnitude earthquake occurred between Auburn and Folsom with an epicenter possibly associated with the Bear Mountain fault.
- 1975 The Cleveland Hills fault was the source of the Oroville earthquake (Richter Magnitude: 5.7), which was felt in El Dorado County and neighboring areas.
- 2003/2004 Volcanic magma (molten rock) migrating about 20 miles below the surface of the Sierra Nevada mountains caused a swarm of about 1,600 small earthquakes in late 2003 and early 2004. The 20-mile depth is about twice as deep as earthquakes caused by normal faulting in the region measured during the last 30 years. El Dorado County did not report any damages associated with these small earthquakes.
- 2008, 2013, 2014 Earthquakes in the El Dorado County vicinity but no significant issues were reported in the County. Ground shaking was the primary concern.

Area	Likelihood	Magnitude	Significance
Significant	Occasional	Critical	Medium

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Erosion

Severe Erosion on U.S Highway 50

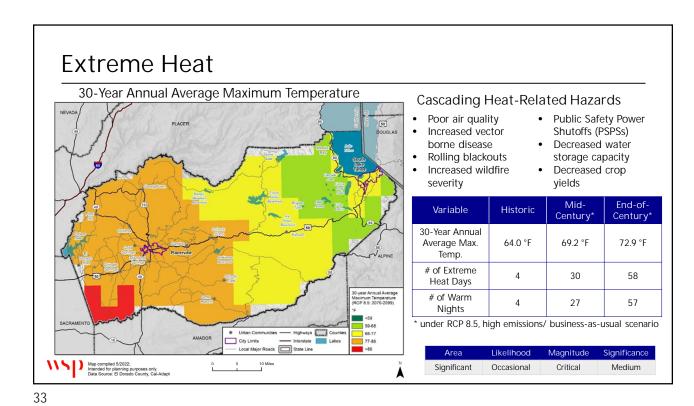


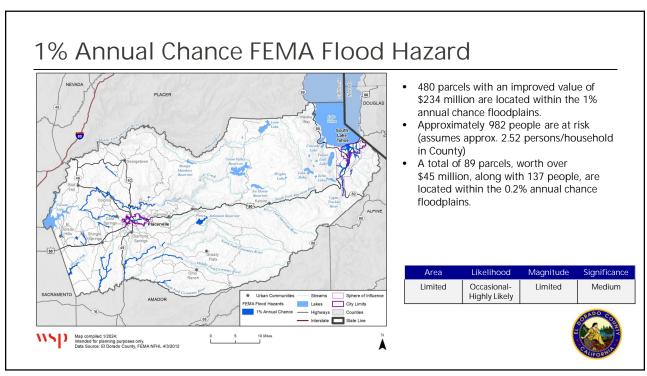
- Historically, erosion issues in El Dorado County have been a result of other hazards.
- Erosion points of interest along Highway 50 near Bridal Veil Falls, Happy Valley in the Mt. Aukum area, and Ft. Jim Road
- Safety Element: Policy 6.3.2.4 Applications for development of habitable structures shall be reviewed for potential hazards associated with steep or unstable slopes, areas susceptible to high erosion, and avalanche risk.

Area	Likelihood	Magnitude	Significance
Significant	Likely	Negligible	Low









FEMA Flood: 1% and 0.2% Annual Chance Flood Risk

1% Annual Chance FEMA Flood Hazard by Jurisdiction

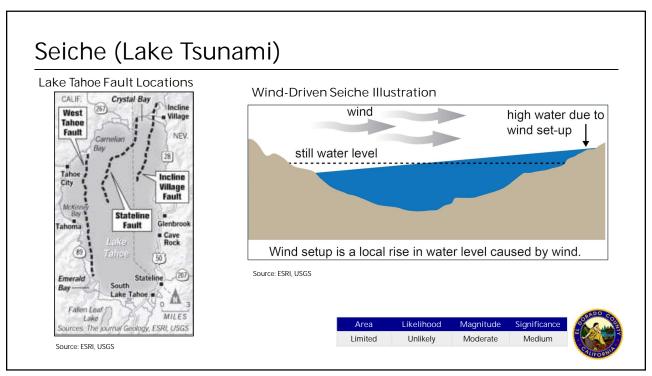
Jurisdiction	Property Type	Parcel Count	Improved Value	Content Value	Total Value	Population
	Commercial	63	\$25,500,849	\$25,500,849	\$51,001,698	
	Industrial	13	\$7,424,185	\$11,136,278	\$18,560,463	
Placerville	Multi-Family Residential	7	\$1,792,655	\$896,328	\$2,688,983	16
	Residential	29	\$4,408,243	\$2,204,122	\$6,612,365	65
	Total	112	\$39,125,932	\$39,737,576	\$78,863,508	80
	Commercial	3	\$1,074,650	\$1,074,650	\$2,149,300	
	Miscellaneous	7	\$1,294,521	\$1,294,521	\$2,589,042	
Unincorporated	Multi-Family Residential	7	\$6,330,814	\$3,165,407	\$9,496,221	18
	Residential	351	\$94,570,363	\$47,285,182	\$141,855,545	885
	Total	368	\$103,270,348	\$52,819,760	\$156,090,108	902
	Grand Total	480	\$142,396,280	\$92,557,335	\$234,953,615	982
Source: Fl Dorado (County Assessor Data 2024, FF	MA NFHL Effective	e Date 4/3/2012. WSP (GIS Analysis		

0.2% Annual Chance FEMA Flood Hazard by Jurisdiction

Jurisdiction	Property Type	Parcel Count	Improved Value	Content Value	Total Value	Population
	Commercial	22	\$7,983,036	\$7,983,036	\$15,966,072	
	Industrial	9	\$4,718,626	\$7,077,939	\$11,796,565	
Discondition	Multi-Family Residential	1	\$96,449	\$48,225	\$144,674	2
Placerville	Residential	22	\$1,523,697	\$761,849	\$2,285,546	49
	Unassessed	1	\$0	\$0	\$0	
	Total	55	\$14,321,808	\$15,871,048	\$30,192,856	51
Hada a same a sant a st	Residential	34	\$10,204,235	\$5,102,118	\$15,306,353	86
Unincorporated	Total	34	\$10,204,235	\$5,102,118	\$15,306,353	86
	Grand Total	89	\$24,526,043	\$20,973,166	\$45,499,209	137
Source: El Dorado O	County Assessor Data 2024, Fl	EMA NFHL Effectiv	e Date 4/3/2012, WSP (GIS Analysis		



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Severe Weather: General

TYPE	# OF EVENTS	PROPERTY LOSS (\$)	CROP LOSS (\$)	DEATHS	INJURIES
Avalanche	20	0	0	9	12
Debris Flow	14	6,542,000	0	0	0
Dense Fog	14	2,320,000	0	6	38
Dense Smoke	4	0	0	0	0
Extreme Cold/ Wind Chill	1	0	0	0	0
Flash Flood	2	15,000,000	0	0	0
Flood	61	10,550,000	7,800,000	2	1
Frost/Freeze	9	200,000	5,000,000	0	0
Funnel Cloud	1	0	0	0	0
Hail	20	1,000	586,000	0	5
Heat	41	0	0	0	18
Heavy Rain	156	100,000	10,250,000	0	0
Heavy Snow**	500+	1,685,000	0	2	4
High Wind	225	13,604,500	48,000	1	3
Lightning	0	0	0	0	0
Strong Winds	62	5,946,800	0	5	2
Tornado	5	1,002,500	0	0	0
Winter Storm	304	666,000	0	3	5
Total***	939	5,7617,800	236,840,000	28	88



Source: NOAA's National Centers for Environmental Information https://www.ncdc.noaa.gov/stormevents/ *Note any reference to a coastal type weather event for ELD orado County has been excluded from this table.

**Number of events for heavy snow exceeds 500. The data shown here is for the date range between January 1, 2001, and December 31, 2023.

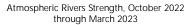
***Wind Losses reflect totals for all impacted areas, inclusive of El Dorado County

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Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning

- Heavy rain events, as documented by the NCEI, have occurred 156 times since 1950, resulting in over \$10,000,000 in property damages.
- Precipitation trends are expected to swing toward extreme values from both directions (drought and deluge). Maximum 1-day precipitation could hit 5.5 inches by mid-century.
- Maximum length of dry spell could reach more than 130 days in the West Slope by the end of the century.
- Precipitation will change over time with an overall concentration of events over a shorter period that will increase the likelihood of flooding.

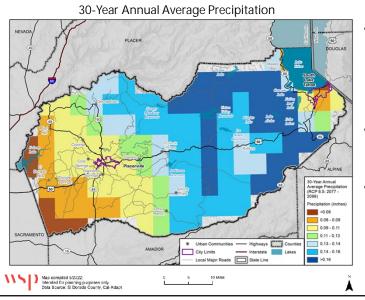
Area	Likelihood	Magnitude	Significance
Extensive	Highly Likely	Critical	Medium





(Source: Toohey 2023).

Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning

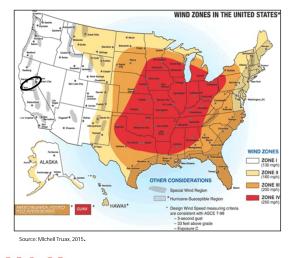


- Under the Representative Concentration Pathway (RCP) 8.5 scenario, the County's 30-year annual average precipitation based on all climate models could range between 32.6 and 59.8 inches by the end-ofcentury.
- Around the year 2060 shows that the annual precipitation during that year could exceed 100 inches. (Cal-Adapt 2022).
- Climate change expected to result in precipitation extremes (deluge and drought) with a shift towards a wetter Sierra Nevada region

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Tornado Spotted Over Folsom Lake at 3 p.m. on Thursday, Dec. 24, 2015

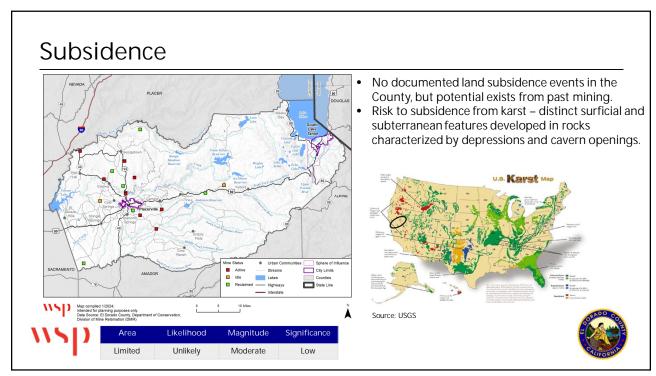


Source: Michell Truax, 2015.





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Wildfire: Improved Properties at Risk to Fire Threat

JURISDICTION	TOTAL PARCEL COUNT	IMPROVED VALUE	ESTIMATED CONTENT VALUE	TOTAL VALUE	POPULATION
Placerville	571	\$159,092,470	83,074,310	242,166,780	1,227
Unincorporated	37,549	\$11,759,094,566	\$6,108,732,220	\$17,867,826,786	92,376
Total	38,120	\$11,918,187,036	\$6,191,806,530	\$18,109,993,,566	93,602

- 10,199 parcels in very high fire threat class, 22,002 parcels in high fire threat class, and 4,678 parcels in moderate fire threat class for a total 36,879 parcels at risk.
 \$11.9 billion in improved parcels at risk in the unincorporated County and City of Placerville combined. Climate change will impact the frequency, size, and severity of wildfires in the County.





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Hazard Risk Summary

Hazard	County	City of Placerville	Georgetown Divide PUD	Cameron Park CSD	Office of Education
Avalanche	Medium	Low	Medium	Low	Medium
Dam Failure	High	Medium	High	Medium	Medium
Drought	High	Medium	Medium	Medium	Low
Debris Flow and Landslide	Medium	Low	High	Low	Medium
Earthquake	Medium	Low	Low	Low	Medium
Erosion	Low	Low	Low	Low	Low
Extreme Heat	Medium	Low	Medium	Medium	High
Flood	Medium	Medium	Low	Medium	Medium
Seiche (Lake Tsunami)	High	Medium	Medium	Medium	Low
Thunderstorms, Hail, Lightning, and Heavy Rain	Medium	Medium	Medium	Medium	Medium
Tornadoes and High Wind	Medium	Low	Low	Low	Low
Heavy Snow and Winter Storms	High	Low	Low	Low	Medium
Subsidence	Low	Low	Low	Low	Low
Wildfire	High	High	High	Medium	High

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Do you agree with these rankings? Is there anything we should change?

① Start presenting to display the poll results on this slide.

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Review Mitigation Goals and Objectives





Mitigation Goals: 2019 El Dorado County LHMP

Goal 1 –Minimize risk and vulnerability of El Dorado County to the impacts of natural hazards; protect lives, public health and safety; and reduce damages and losses to property, economy, and the environment.

Goal 2 – Provide protection for critical facilities, infrastructure, utilities and services from hazard impacts.

Goal 3 – Improve public awareness, education, and preparedness for all hazards.

Goal 4 – Increase communities' capabilities to mitigate losses and to be prepared for, respond to, and recover from a disaster event.

Goal 5 - Maintain FEMA Eligibility/Position the communities for grant funding.





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Mitigation Goals: California 2023 SHMP

Goal 1—Significantly reduce risk to life, community lifelines, the environment, property, and infrastructure by planning and implementing whole-community risk reduction and resilience strategies.

Goal 2—Build capacity and capabilities to increase disaster resilience among historically underserved populations, individuals with access and functional needs, and communities disproportionately impacted by disasters and climate change.

Goal 3—Incorporate equity metrics, tools, and strategies into all mitigation planning, policy, funding, outreach, and implementation efforts.

Goal 4—Apply the best available science and authoritative data to design, implement, and prioritize projects that enhance resilience to natural hazards and climate change impacts.

Goal 5—Integrate mitigation principles into laws, regulations, policies, and guidance to support equitable outcomes to benefit the whole community.

Goal 6— Significantly reduce barriers to timely, efficient, and effective hazard mitigation planning and action.

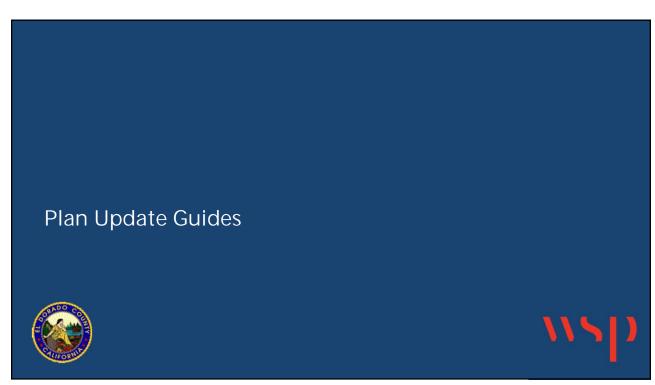
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Add or revise one goal to focus on lifelines, atrisk communities, or climate adaptation.

① Start presenting to display the poll results on this slide.

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Plan Update Guides: Capability Assessment Update						
Policies/Ordinance	County	Cameron Park CSD	Georgetown Divide PUD	Office of Education	City of Placerville	
General Plan	Yes	Yes	No	No	Yes	
Zoning ordinance	Yes	No	No	No	Yes	
Subdivision ordinance	Yes	No	No	No	Yes	
Growth management ordinance	No	No	No	No	No	
Floodplain ordinance	Yes	No	No	No	Yes	
Other special purpose ordinance	Yes	Weed Abatement	No	No	Yes	
Building code	Yes	No	No	No	Yes	
Fire department ISO rating	Yes	Yes, Cameron Park Fire	No	Yes	Yes	
Erosion or sediment control program	Yes	No	No	Yes,	Yes	
Stormwater management program	Yes	No	No	School District Bus Yard	Yes	
Site plan review requirements	Yes	Yes	No	No	Yes	
Capital improvements plan	Yes	Yes	Yes	Yes, long term planning	Yes	
Economic development plan	Yes	No	No	No	Yes	
Local emergency operations plan	Yes	Yes - EDC	No	Yes, School Safety Plans	Yes	
Other special plans	No	No	Yes	No	No	
Flood insurance study or other engineering study for streams	No	EDC Water Authority	No	No	Yes	
Elevation certificates (for floodplain development)	No	No	No	No	Yes	

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Historical Events Reported: County Feedback

2021 Caldor Fire County

• Estimated total cost \$1.2 Billion.

2022 Mosquito Fire

• Estimated total cost \$181.1 million .

2020 - 2022 Drought

 Multi-year statewide extensive drought; driest years on record. Governor Gavin Newsom issued multiple Proclamations of a State of Emergency from April 12, 2021, to March 3, 2023, related to the severe drought conditions.

2021 - 2022 Winter Storms

 Heavy rainfall, snowfall, and freezing temperatures that led to downed trees and powerlines. These issues caused power outages lasting 15 days in El Dorado County and contributed to several roadways and driveways being blocked and inaccessible.

2022 - 2023 Winter Storms

- There were three communities that received mandatory evacuation orders due to flooding or risk of flooding.
- Over 100,000 sandbags deployed.

EL DORADO COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN WORKSHEET #2: HISTORIC HAZARD EVENT

Name of Department/Jurisdiction: El Dorado County

Please fill out one sheet for each significant hazard event with as much detail as possible. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	Winter Storms Feb-Mar / Extreme Weather and Heavy Snow	
Nature and magnitude of the event	Sever Weather / Limited magnitude	
Location	All of El Dorado County. Flooding in the lower elevations and heavy snow in the higher elevations	
Date of event	February 21, 2023 and March 21, 2023	
Injuries		
Deaths		
Property damage	The heavy snow load on structures caused multiple structures to collapse, 155 structures were damaged, and 46 structures were red tagged.	
Infrastructure damage	Infrastructure was damaged due to the heavy snow loads in the higher elevations	
Crop damage	Unknown	
Business/economic impacts	Businesses in the higher elevations were impacted and closed due to the unusual high levels of snow	
Road/school/other closures	Roads/ Schools/ Ski resorts in the higher elevations were impacted and closed due to the unusual high levels of snow	
Other damage		

Historical Events Reported: Jurisdiction Feedback

- City of Placerville
 - 2021 Drought
 - Long term effect on landscaping especially large trees.
- Georgetown Divide Public Utility District
 - 2023 Landslides North of the committee of Quinette along raw water conveyance system
- · County Office of Education
 - Wildfire "Caldor" 1,005 structures destroyed; 81 structures damaged, one school.
 - Several months of school closures.
- · Cameron Park CSD
 - Weed Abatement Program.
 - 2020 Emergency Action Plan at Cameron park Lake.
 - Partnership with El Dorado County Water Agency to address flooding.
 - 2022 flooding 10" of rain in 24-hour period.





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Mitigation Strategy Update





Mitigation Strategy Update

- Update new mitigation strategy goals
- Decide whether to include objectives (optional)
- Review mitigation alternatives
- Need at least one mitigation for each hazard profiled
- Draft an action plan





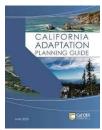
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Mitigation Strategy: Goals, Objectives, and an Action Plan

- Set planning goals
- Review mitigation alternatives
 - FEMA Mitigation Ideas
 - Local Planning and Regulations
 - Structure and Infrastructure Projects
 - Natural Systems Protection
 - Education and Awareness Programs
 - California Adaptation Planning Guide
- Draft an action plan







Mitigation Strategy: Action and Project Types

FEMA Mitigation Ideas Guidance

- Local Plans and Regulations
- Structure and Infrastructure Projects
- Natural Systems Protection
- Education and Awareness

Community Rating System Categories

- Prevention
- Property protection
- Natural resource protection
- Structural projects
- Emergency services
- Public Awareness and Education









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Mitigation Action Plan: New Actions

- Will need an update on the status of actions from the 2019 LHMP.
 - Mitigation Action Tracker Form will be circulated to El Dorado County and the Participating Jurisdictions to facilitate this process on Friday, January 26th
- Begin thinking of new action ideas
- Each jurisdiction will need at least one <u>new</u> action per hazard
 - Comprehensive range of actions
 - Focus on hazards with the highest risk
 - Actions must be prioritized
- Use updated risk assessment as basis





Plan Adoption & Implementation

- Adopt the Plan
 - Public input before adoption
 - Cal OES review
 - FEMA Region IX review
 - Official Adoption by El Dorado County Board of Supervisors
 - Local Municipality Adoption
- Implement the Plan
 - Assign an overall project manager
 - Integrate actions into staff work plans
 - Monitor changes in vulnerability
 - Report on progress, publicize successes
 - Revise the plan as necessary (every 5 years)



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Mitigation Action Plan: Status of 2019 Actions

- Will update status for all actions in 2019 Plan
- Mitigation Action Tracker Form will be provided this week.
- Response deadline: February 26, 2024.

There is no expectation that you have completed any/all actions





Information Needs and Next Steps





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Schedule and Next Steps

- Public Workshop #1 tentatively scheduled for February 2024
- HMPC Meeting #3 tentatively scheduled for February 2024
- Complete the Online Survey at by February 1, 2024.
 - Circulate the Online Survey on your City or Special District's Main Webpage
- Public Review Draft MJHMP (Base Plan + Annexes) expected by March 2024.
- Public Workshop #2 tentatively scheduled for March 2024
- El Dorado County: Stay tuned for the Mitigation Action Tracker Form to review progress on mitigation actions by this Friday, January 26th
- Cal OES and FEMA Region IX Review April 2024,



Don't Forget!

Please Type Your Name, Title, and Affiliation in Chat Box





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Scott Bare
Deputy Sheriff
El Dorado Sheriff's Office
bares@edso.org

Questions?

Project Manager Juliana Prosperi AICP, LEED AP®, ENV SP WSP USA Environment & Infrastructure juliana.prosperi@wsp.com



