



Cal OES

GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

SB 254: Statement of Scope & Agency Contribution

January 30, 2026

EXECUTIVE SUMMARY

Purpose

Provide an outline of California Governor's Office of Emergency Services (Cal OES)' contribution to the Natural Catastrophe Resiliency Study mandated by SB 254 and Executive Order N-34-25.

Background & Legislative Context

SB 254 (Becker) establishes the *Natural Catastrophe Resiliency Study*, led by the **California Earthquake Authority (CEA)**, to identify policies that strengthen mitigation, recovery, and financial resilience to disasters.

Executive Order N-34-25 designates Cal OES, California Department of Forestry and Fire Protection (CAL FIRE), and the Office of Energy Infrastructure Safety (OEIS) as lead agencies to provide recommendations on recovery coordination, mitigation integration, and economic impacts. Cal OES serves as the statewide recovery coordination lead, contributing data, Recovery Support Function (RSF) models, and Whole-Community recovery practices to support the study's final policy recommendations.

CONTRIBUTION SCOPE

Cal OES, through the **Recovery Directorate**, is providing support for policy recommendations, operational models, and data that support the *Natural Catastrophe Resiliency Study* required by **SB 254** and **Executive Order N-34-25**.

The contributions are aligned with the three core directives of the Executive Order (**Sections D, H, and I**) as outlined below.

Section D – Interagency Recovery Integration

Cal OES will demonstrate how the RSF framework and IA operations collectively inform statewide recovery policy and Whole-Community resilience. These contributions provide a scalable model for interagency coordination that can be integrated into the *Natural Catastrophe Resiliency Study* and future recovery planning efforts.

d. The Office of Emergency Services and the Department of Forestry and Fire Protection shall, and the California Public Utilities Commission and the Department of Insurance are requested to, provide information and recommendations to the Wildfire Fund Administrator on financing, insurance, and other mechanisms to expedite recovery for communities impacted by natural catastrophes, including wildfires, and to expedite compensation for property loss.

Recovery Support Functions (RSFs)

Objective: Integration of Recovery Support Functions (RSFs) and Whole-Community coordination into statewide resilience policy.

Contribution:

1) Recovery Frameworks

- a. **National Disaster Recovery Framework (NDRF)** - Outlines the federal government's approach for providing disaster recovery resources and support. It also explains the federal government's roles and responsibilities for organizing and deploying disaster recovery assistance. The NDRF enhances effective collaboration among federal agencies and SLTTs and informs non-governmental partners.

As a national framework, the NDRF describes high-level disaster recovery roles and responsibilities. State, Local, and Tribal Territories (SLTTs) may use the federal structure as a model to guide and inform their own disaster recovery planning and policymaking. The NDRF model can be applied across a broad range of disasters, not just those that receive a federal disaster declaration. The guiding principle of the NDRF is that disaster recovery is most successful when it is organized around community-driven and locally defined goals that promote fairness and support resilient outcomes.

Source: [National Disaster Recovery Framework 2024 Third Edition](#)

Recovery Continuum



- b. **CDRF** - California's disasters require recovery efforts on the part of individuals, governments, non-profit and private sectors, and faith-based organizations. The California Disaster Recovery Framework (CDRF), like the NDRF, builds on the State's experience and current recovery documents and guidance. The CDRF:
- Establishes a state recovery coordination structure consistent with the federal model to facilitate the delivery of state and federal disaster assistance to impacted communities.
 - Describes the concepts and principles to promote effective state recovery assistance.
 - Applies to all hazards (natural and human-caused) and is scalable dependent on the scope of the disaster.
 - Links local, state, tribal, and federal governments, the private sector and non-governmental and community organizations with vital roles in recovery.
 - Is consistent with state and federal emergency management doctrine.
 - Recognizes hazard mitigation and disaster preparedness activities are keys to reducing the impact of disasters and reliance on mutual/State/federal aid.
 - Recognizes individual preparedness and local resiliency are necessary for successful recovery.

[Source: 2019 California Disaster Recovery Framework](#)

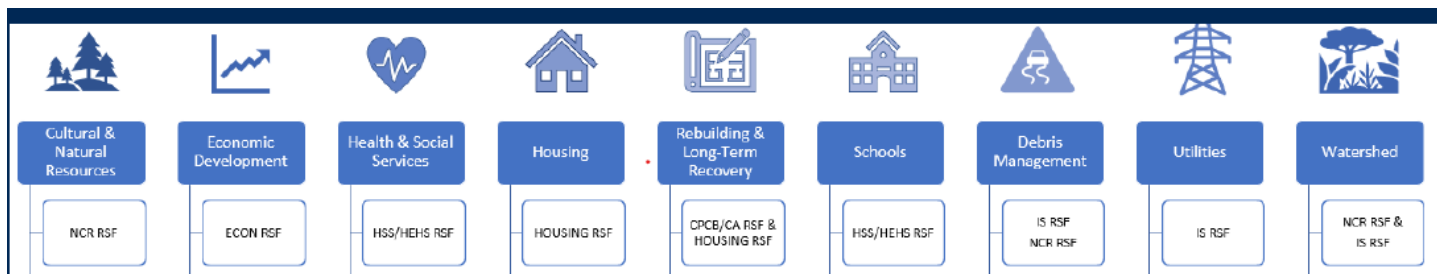
- c. **Recovery Support Functions** - California adopted 6 RSFs to facilitate State support for overwhelmed communities in key functional areas:
- **Community Planning and Capacity Building** – Supports capacity building and planning initiatives for communities and regions within the State
 - **Economic** – Supports the recovery and enhancement of businesses and other economic assets in communities impacted by a disaster
 - **Health and Social Services** – Assists in the restoration of health and social services in communities impacted by a disaster
 - **Housing** – Supports the development or redevelopment of housing, including affordable and accessible housing in communities impacted by a disaster

- **Infrastructure Systems** – Supports the redevelopment of critical infrastructure damaged or destroyed during a disaster
- **Natural and Cultural Resources** – Assists in the restoration of natural and cultural resources impacted by a disaster.

[Source: 2019 California Disaster Recovery Framework](#)

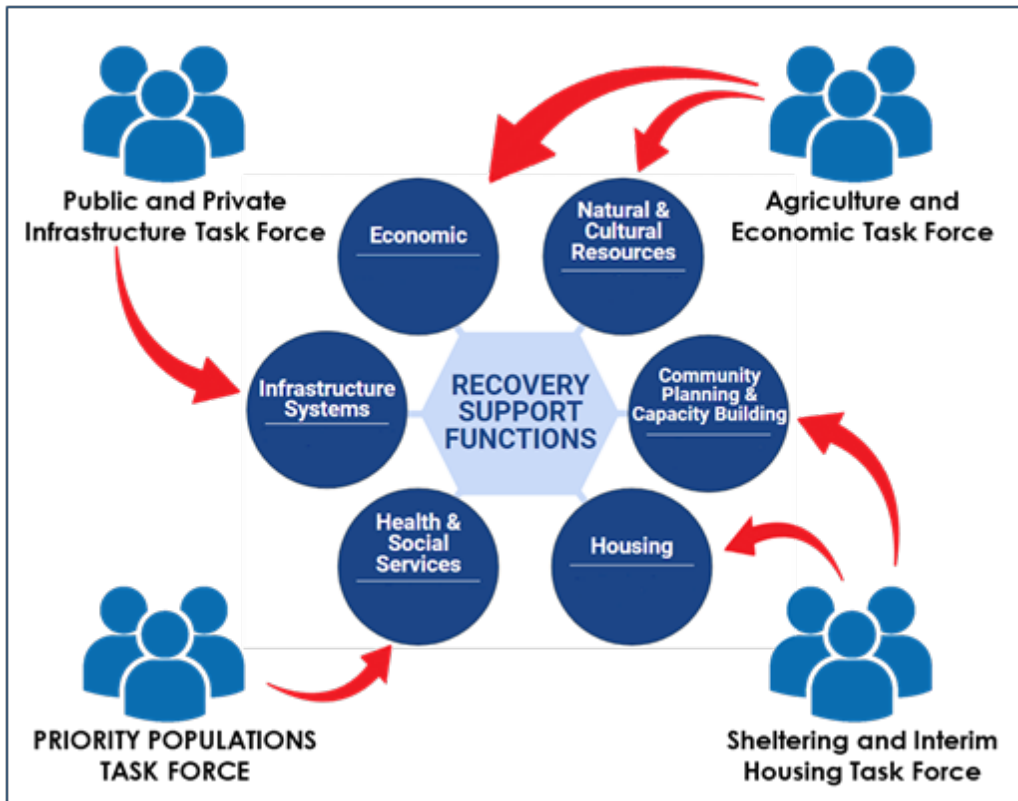
2) **Task Forces for Recovery** – Often created to aid the recovery process and meet the recovery priorities and align with the appropriate RSF's.

Case Study (LA Wildfires 2025) - Here are the 13 task forces that were created for LA Wildfires and the RSF's they were aligned with:



Case Study (Winter Storms 2023-2024) – Four task force groups were formed for the 2023-24 Winter Storms. Below are the Task Forces and which RSF they aligned with:

- Agriculture and Economic Task Force
- Public and Private Infrastructure Task Force
- Priority Populations Task Force
- Sheltering and Interim Housing Task Force



3) **Local Disaster Recovery Manager (LDRM)** - The primary role of an LDRM is to manage and coordinate the redevelopment and rebuilding of their community. Impacted local governments are encouraged to designate an LDRM as the single point of contact that provides a way for the State to communicate directly with a decision maker in the impacted local jurisdiction. The State works with the LDRM, once assigned, to coordinate local disaster recovery efforts and State and federal assistance.

4) **Case Study (LA Wildfires 2025)**

Community Disaster Loan Program (CDL) – Is designed to assist local governments that have significant revenue losses due to major disasters. This program enables these governments to maintain essential services.

Early January 2025, the Eaton Fire rapidly spread and destroyed over 9,400 structures, including commercial properties owned by water districts, water mutuals, and water companies, which experienced compromised infrastructure and subsequent debris flow impacts. In April, Cal OES requested the activation of FEMA's Community Disaster Loan (CDL) program on behalf of impacted local governments and was approved to implement the program.

Voluntary Agency Coordination

Objective: Showcase how Cal OES operations sustain survivor recovery and extend the state's coordination capacity through Whole-Community partnerships.

Contribution:

- Integrate Cal OES operational data to demonstrate coordination between Cal OES, Non-Governmental Organizations (NGO), Voluntary Organizations Active in Disaster (VOAD), and Long-Term Recovery Groups (LTRG) for case management, unmet needs, and survivor transition from federal to local assistance.
- Document Whole-Community partnerships, including (VOADs, NGOs, LTRGs, 211) as models for local empowerment and continuity of support beyond FEMA program limits.
- Include examples of Local Assistance Center (LAC) operations illustrating how Cal OES facilitates survivor access to state, local, and nonprofit resources during early recovery.
- Highlight coordination between Cal OES, VOADs, LTRGs, and philanthropic partners to address unmet needs and sustain long-term community recovery.
- Document how case management and LAC operations support economic resilience by enabling survivors to re-enter the workforce and maintain housing stability.
- Provide examples of Cal OES and RSF integration that ensure survivor assistance aligns with community-level economic-recovery goals.
- Small Business Administration (SBA) Economic Injury Disaster Loans (EIDL) and SBA Physical damages loans. SBA offers these two disaster assistance programs that can assist with financing to expediate recovery for individuals and businesses. Cal OES can help educate local communities to these potential programs. These federal programs are contingent on approval by SBA.
- Federal Emergency Management Agency (FEMA) Individual Assistance (IA) reforms offer additional financial opportunities to individuals after a disaster. The Other Needs Assistance program with these reforms added help to self-employed individuals with replacement cost for tools and equipment. The IA program does require federal approval.

Outcome / Metrics:

- IA case closure and transition rates.
- Number of LACs activated per event and average duration of operation.
- Number of LTRGs established within 6 months post-incident and percentage of IA cases transitioned to long-term recovery.

Section H – Mitigation Integration

The Cal OES Hazard Mitigation Section supports communities across California in reducing risks from natural hazards—including wildfires—and strengthening long-term resilience. By promoting accessible, comprehensive mitigation planning processes and administering state and federal grant programs, we help local jurisdictions assess risk, develop actionable mitigation strategies for all hazards, implement projects and initiatives, and adopt best practices that reduce disaster losses. Cal OES leads and coordinates a robust statewide hazard mitigation program, as reflected in the **2023**

Enhanced State Hazard Mitigation Plan.

Research by the National Institute of Building Sciences (NIBS) in its landmark [Mitigation Saves](#), study underscores the value of this work: public-sector investments in mitigation through federal grants have saved an average of \$6 for every \$1 invested since 1995. Adoption of the latest building codes yields an even greater benefit—\$11 saved for every \$1 invested. Depending on the type of mitigation activity, the return on investment can be even higher when evaluating individual project benefits or losses avoided.

A key example of California's commitment to community-scale mitigation is the California Wildfire Mitigation Program Authority (CWMPA), managed by Cal OES in coordination with Cal FIRE. CWMPA provides financial assistance to socially vulnerable neighborhoods to retrofit and harden homes and create defensible space in high-risk wildfire areas. The program is currently piloting locally led, community-driven models in six diverse communities to better understand common barriers and effective strategies for scaling this work statewide.

As of November 10, 2025, 462 homes have applied for assistance. Of these, 221 assessments have been completed; 39 homes are currently in construction; and 83 homes have completed mitigation upgrades. Just as importantly, the program has developed a replicable methodology and framework for selecting project areas, conducting homeowner outreach, identifying qualified contractors, and establishing minimum criteria for protecting homes—laying the groundwork for broader implementation across the state.

Contribution:

- Statewide Risk Identification: Cal OES maintains and updates the State Hazard Mitigation Plan (SHMP), which identifies wildfire as one of California's most significant natural-hazard threats. The SHMP also outlines statewide priorities to reduce associated risks for all hazard types.
- Mitigation Investments and Project Development: Cal OES administers multiple federal Hazard Mitigation Assistance (HMA) and state mitigation programs—including HMGP, HMGP-Post Fire, BRIC, FMA, LPDM, and the CWMP projects—to deliver wildfire risk-reduction projects statewide. To date, these programs collectively represent a substantial portfolio of active and in-development mitigation projects addressing structure hardening, vegetation management, community-scale mitigation, and infrastructure protection.
 - Under DR-4856, Cal OES received 120 Notices of Interest (NOIs) for wildfire-related projects, demonstrating strong statewide demand. Of these, 106 NOIs were approved, and 68 have since been developed into FEMA-eligible mitigation projects.

- SB 254 focuses heavily on wildfire risk. Table 1 below Summarizes Cal OES' implementation of all fire hazard type projects to date:

Wildfire Subapps & Projects	# of Projects	Federal Share	Total Project Cost
Subapps in OES Development	68	\$1,018,137,555	\$1,357,527,609
Subapps in FEMA Review	36	\$113,286,784	\$144,288,841
Projects in Phase 2 FEMA Review	18	\$68,956,219	\$89,162,221
Current Active Projects	126	\$560,044,509	\$730,164,643
Completed Projects	159	\$46,546,177	\$58,423,214

- Policy Integration and Strategic Alignment: Cal OES is advancing policy language that links pre-disaster mitigation investments with post-disaster recovery outcomes, demonstrating how proactive risk reduction decreases long-term costs, shortens recovery timelines, and strengthens statewide resilience.
- Interagency Coordination: Cal OES collaborates with CAL FIRE, the Office of Energy Infrastructure Safety, and other state partners to align wildfire mitigation, utility safety, and vegetation management efforts. This ensures consistency across mitigation, preparedness, recovery, and energy-infrastructure safety frameworks.
- Addressing Barriers to Local Participation: Through experience administering federal mitigation programs and piloting CWMPA implementation, Cal OES has identified persistent barriers that limit local participation—particularly for small, rural, or disadvantaged jurisdictions:
 - Limited local staffing capacity and program knowledge
 - Challenging federal requirements, including Benefit-Cost Analysis (BCA) and strict periods of performance
 - Extensive Environmental and Historic Preservation (EHP) requirements aligned with NEPA
- Advancing Equitable Access to Mitigation Funding: To expand participation among high-risk and disadvantaged communities, the Hazard Mitigation team is developing targeted strategies, including:
 - Pre-identifying project areas in high fire-severity zones with low EHP complexity to streamline project review timelines
 - Leveraging internal Cal OES expertise to compile EHP data packages that support feasible projects for jurisdictions lacking technical capacity

- Conducting proactive outreach to equity-priority communities to support project scoping and development before funding opportunities open, enabling more competitive applications
- Statewide Exposure and Vulnerability Findings (2023 SHMP): The SHMP Risk Assessment evaluates the exposure and vulnerability of state assets—including state-owned or leased facilities, critical facilities, community lifelines, and populations—to all hazards including wildfire. Key findings include:
 - California is projected to experience a 50% increase in fires larger than 25,000 acres and a 77% increase in average area burned by 2100.
 - 7% of populations living in high and very high Fire Hazard Severity Zones (FHSZs) are identified as residing in equity priority communities.
 - 5,038 state facilities are located within high or very high FHSZs, representing \$1.9 billion in replacement cost value.
 - 71 community lifelines—such as transportation networks, utilities, and critical service hubs—are located in high or very high FHSZs.

Outcome / Metrics:

- **Local Hazard Mitigation Planning Progress:**
The number of California communities with approved and up-to-date Local Hazard Mitigation Plans (LHMPs) continues to grow, strengthening eligibility for federal mitigation funding and advancing local risk-reduction priorities.
- **Specific to Wildfire Mitigation Implementation:**
Cal OES tracks progress on the implementation of wildfire-resilience projects funded through the CWMPA and the HMA programs.
 - 82 homes hardened to date (as of 11/10/2025) through CWMPA and HMA supported mitigation efforts.
 - Additional vegetation management and defensible-space treatment acreage is being quantified as project completions increase.
 - Table 1 above in the Contribution section summarizes all of HMA current and completed fire hazard projects.
- **Measuring Return on Investment (ROI):**
Cal OES is proactively identifying and evaluating completed mitigation projects to quantify avoided losses, validate program effectiveness, and demonstrate the long-term value of resilience investments.
 - A flagship example is the **Lick Observatory Mitigation Project**, which produced

an estimated **\$71.6 million in avoided losses** and yielded a **Return on Investment (ROI) exceeding 8,000%**.

- [Lick Observatory Loss Avoidance Study and Methodology Report](#)
- [GIS Story Map](#)

Section I – Economic & Community Recovery

Cal OES will demonstrate how its recovery coordination and Whole-Community partnerships foster economic stability, equitable access to recovery resources, and locally led community recovery. This section focuses on the role of the Recovery Directorate, particularly the Interagency Recovery Coordination (IRC) Branch, in advancing housing restoration, workforce recovery, and long-term community resilience.

- i. The Office of Emergency Services and the Department of Forestry and Fire Protection shall, and the California Public Utilities Commission and the Department of Insurance are requested to, provide options and recommendations to the Wildfire Fund Administrator for reducing the economic damage resulting from wildfires and potentially other catastrophic natural disasters, including minimum insurance requirements, mechanisms to ensure insurance rates appropriately account for home and community hardening measures taken, special assessments to support infrastructure investments and emergency response, and improved land use planning.

Recovery Support Functions (RSFs)

Objective: Illustrate how Cal OES's RSF coordination structure drives statewide economic and community recovery through policy integration, interagency collaboration, and Whole-Community engagement.

Contribution:

Case Study (Accelerate Recovery): [US EDA recognizes California Jobs First economic regional plans as CEDS](#)

California's Jobs First program invests in key sectors that can help drive sustainable economic growth, innovation, and access to good-paying jobs throughout all 58 counties in the state. Jobs First is organized into thirteen (13) regions to facilitate regions working together on projects that create good-paying jobs and build sustainable industries. In early 2025, each of these Jobs First regions had a regional plan completed.

On April 10, 2025, the United States Economic Development Administration (US EDA) formally accepted all thirteen (13) Jobs First regional plans as [Comprehensive Economic Development Strategies \(CEDS\)](#). US EDA, along with other federal agencies, requires an approved CEDS for communities to be eligible for funding from a wide variety of programs that promote economic, infrastructure, and workforce development. The approval of these plans also positions California's regions to further advocate for financial resources from many funders, including philanthropy, private investors, Community Development Financial Institutions, and Community Reinvestment Act bankers. This landmark approval supports California's investments in its communities to continue strengthening the state's position as the [fourth \(4th\) largest economy in the world](#). A US EDA-approved CEDS can also help accelerate economic recovery, as the CEDS action plan pre-identifies objectives and actions, partnerships, and funding opportunities that can support regional resilience and rebuilding.

Case Study/Best Practice (Accelerate Recovery): Los Angeles Fire Economic Impact Study

The California Jobs First program, supported by several key state agencies – Governor's Office of Land Use and Climate Innovation (LCI), the Employment Development Department (EDD), the Governor's office of Business and Economic Development (GO-Biz), the California Labor and Workforce Development Agency (LWDA), and the Employment Training Panel (ETP) - funded the Los Angeles County 2025 economic impact study. The study gathered feedback from community members and businesses impacted by the Eaton and Palisades fires, outlining the structural damage and beginning to quantify the projected economic impacts. Los Angeles County also held an [initial webinar](#) to share information about the study with partners and the public, with more webinars to be scheduled. The information gathered will be used moving forward to help carve a path for the region's economic recovery.

Additionally, [Los Angeles County received close to \\$24 million in Jobs First funding](#) to help drive growth in the region's life science economic sector and support job creation.

Case Study (Accelerate Recovery): [Butte County leveraged US EDA and FHA funding for multiple facets of recovery](#)

- Local Disaster Recovery Manager – the [Town of Paradise received a \\$300,000 US EDA grant](#) to recruit and hire a Local Disaster Recovery Manager (LDRM). The LDRM led recovery and emergency management planning efforts. The grant was matched with \$75,000 in local investments. An [LDRM](#) is a position, typically one hired outside of a jurisdiction's normal operations, that can focus on recovery operations. Cal OES' Community Planning and Capacity Building Recovery Support Function (CPCB RSF) has developed a [fact sheet](#) on LDRMs and potential funding sources for them.
- US EDA and the [Federal Highway Administration](#) (FHA) each awarded grants to the Town of Paradise to rebuild its transportation infrastructure. While the FHA grant supported the construction of up to 100 miles of roadway to replace what was

destroyed or damaged by the fire, EDA's contribution financed the development of a new transportation master plan that allowed the town to reimagine itself as it heads into a post-fire future. The Town's work paid off – planning and scoping supported by these grants also allowed Paradise to apply for HUD's Community Development Block Grant Disaster Recovery (CDBG-DR) funding, resulting in a \$200 million award from HUD to support the community's recovery efforts.

Case Study (Accelerate Recovery): Sonoma County uses US EDA funding to support workforce development

- After the Tubbs Fire (2017), the Sonoma County Community College District received \$7.1 million to help construct the North Bay Regional Construction and Building Trades Employment Training Center to support workforce development and training. The grant was matched with \$1 million in local investments. The Center provided essential workforce training to help with recovery from the Tubbs Fire and subsequent North Bay fires. After the Tubbs fire, the demand for skilled labor increased significantly to rebuild homes and infrastructure, which the training programs helped to address.

Best Practice (Accelerate Recovery and Equitably Allocate Burdens): Establishing a Local Disaster Recovery Framework (LDRF) and/or a Long-Term Recovery Plan (LTRP)

Cities, counties, and tribal governments can benefit from creating a Local Disaster Recovery Framework (LDRF) ahead of a disaster impacting their communities. An LDRF helps pre-identify recovery priorities, partnerships with a role in recovery, and the jurisdiction's plan of how they will be transitioning from response to recovery (organizational structure, temporary reassignment of staff, etc.).

Building off an LDRF, a Long-Term Recovery Plan (LTRP) should align and integrate with other local plans to strengthen a community's risk assessment, community engagement opportunities, and ability to apply for funding opportunities for projects where a scope has already been developed as part of the LTRP process. Identifying project champions for recovery projects also helps to ensure a person/agency is committed to seeing the project through and supporting it through the development process.

Long-Term recovery planning guidance from California's Community Planning and Capacity Building Recovery Support Function (CPSB RSF):

- [Difference between recovery frameworks and recovery plans fact sheet](#)
- [RSF Local Quick Start Guide](#)
- [RSF Post-Disaster Long-Term Recovery Plan Guide](#)
- RSF Long-Term Recovery Planning Template (downloadable online on the [RSF webpage](#), under the "Community Planning and Capacity Building Resources" section)
- [RSF Long-Term Recovery Planning Checklist](#)
- [RSF Long-Term Recovery Planning Timeline](#)

- [RSF Recovery Project Proposal](#)
- [RSF Recovery Project Worksheets](#)

Guidance for elected officials:

- [Cal OES 2021 Elected Officials Guide to Emergencies in California](#)
- [NEMA-An-Elected-Officials-Guide-to-Emergency-Management.pdf](#)
- [American Planning Association's Planning for Post-Disaster Recovery](#)
- [FEMA's Community Recovery Management Toolkit – Organize & Lead](#)

Other Resources:

- [California's Plan Alignment and Integration Tool](#)
- [FEMA's Community Recovery Management Toolkit](#)

To further support a community's sustainability and support economic viability for the region, as part of long-term recovery planning efforts, local businesses can help encourage longevity and continuity of the economic region after a disaster by developing a business continuity plan. Having a continuity plan in place can help reduce economic damage after a disaster by ensuring capital, funding opportunities, and resources are pre-identified before a disaster occurs. Cal OES and its Economic RSF partners have several resources to help businesses with continuity and fiscal planning, including webinars and technical assistance through the OutSmart Disaster program.

- [California's Office of the Small Business Advocate Outsmart Disaster program](#)
- [California Association for Local Economic Development Economic Development Recovery and Resiliency Playbook](#)
- [Cal OES Private Sector and Nongovernmental Organization Small Business Resources](#)
- [Cal OES Continuity Planning Training, Templates, and Other Resources](#)

Best Practice: Assessment of land use planning through disaster recovery process (Mitigate Damage from Future Events)

- Land use planning is often reassessed after a disaster to determine if impacted areas at risk for future disasters should have the land use designations changed/updated to support rebuilding a more resilient community moving forward. The Governor's Office of Land Use and Climate Innovation (LCI) plays an important part in this process by offering technical and general planning assistance to local jurisdictions about land use planning decisions after a disaster. LCI also provides guidance for cities/counties with developing General Plans, which includes a [Land Use Element](#) (page 42).
- CAL FIRE has also worked with other partners to develop ["An Introduction to Land Use Planning for Wildfires in California" training](#) so that participants can learn about the most up-to-date state requirements for land use planning in fire hazard areas and expand their knowledge of wildfire vulnerabilities, best practices, and resources. Funding for these trainings was provided by CAL FIRE as part of the California Climate Investments (CCIs) program; just one of many examples where

the state's CCI and other climate-related programs have funded important resources that help with local resiliency measures.

- FEMA has Property Acquisition and Structure Demolition or Relocation projects available for Subrecipients to apply for via Hazard Mitigation Assistance programs via the Cal OES Hazard Mitigation Section as the Recipient or pass-through entity. Generally, FEMA-assisted property acquisition and structure demolition or relocation projects consist of a community purchasing properties from voluntary sellers and either demolishing or relocating the structures on the property to a new site outside of the hazard-prone area. The purchased property is then maintained, in perpetuity, for open-space purposes and to restore or conserve the site's natural functions. FEMA generally encourages communities to opt for the property acquisition and structure demolition model. These projects are simpler because they typically require minimal EHP review, are considerably less expensive and allow homeowners to determine where to relocate.

Additional resources for land use planning include the following:

- [Land Use Planning for Wildfires: 2025 Trainings - American Planning Association California Chapter](#)
- [Land Use Resources - Office of Land Use and Climate Innovation](#)
- [Smart Growth Strategies for Disaster Resilience and Recovery | US EPA](#)

Safety Assessment Program (SAP): (Accelerate Recovery):

The Safety Assessment Program (SAP) accelerates disaster recovery by strengthening local capacity to conduct rapid safety evaluations of buildings and structures. Its primary objective is to quickly determine whether buildings are safe to occupy, restricted, or unsafe, while helping protect public safety and guide recovery operations. Through timely and accurate assessments, SAP enables residents and businesses to return to safe properties sooner, informs repair priorities, and supports efficient allocation of rebuilding resources.

The program leverages volunteers, mutual aid partnerships, as well as state employees to provide qualified professionals including engineers, architects, and certified building inspectors to assist local governments in evaluating their built environment after a disaster. The program is managed by Cal OES, in cooperation with professional organizations. Cal OES Recovery SAP issues registration ID cards to all SAP Evaluators that have successfully completed the program requirements.

CONCLUSION & SUMMARY

The California Governor's Office of Emergency Services (Cal OES), through its Recovery Directorate, plays a central role in fulfilling the intent of Senate Bill 254 (Becker) and Executive Order N-34-25, which call for a coordinated, data-driven approach to building statewide resilience against catastrophic events.

Cal OES's contributions to the Natural Catastrophe Resiliency Study reflect a comprehensive, Whole-Community model that integrates mitigation, recovery, and economic revitalization functions across government and nonprofit sectors. Through its Recovery Support Functions (RSFs), Individual Assistance and VAL operations, and Hazard Mitigation Section, Cal OES provides the operational expertise and empirical data necessary to translate on-the-ground recovery experience into policy-level recommendations.

By aligning pre-disaster mitigation with post-disaster recovery, Cal OES's inputs will:

- Demonstrate how RSF-based coordination accelerates rebuilding and strengthens community capacity.
- Quantify the cost savings and risk-reduction outcomes of sustained mitigation investments.
- Highlight equitable, survivor-centered practices that reduce long-term dependence on federal assistance.
- Provide measurable indicators of housing recovery, workforce re-entry, and economic stabilization.

These contributions ensure that California's resilience strategy, reflected in the *Natural Catastrophe Resiliency Study*, is not theoretical but operationally grounded in the systems, data, and partnerships that have proven effective in disaster recovery statewide.

Cal OES' leadership within this study will help define enduring standards for integrated recovery policy, ensuring that future catastrophic events are met with faster, fairer, and more sustainable recovery outcomes for all Californians.

HAZARD MITIGATION ASSISTANCE

SCU Lightning Complex Wildfire Loss Avoidance Study (LAS) @ the Lick Observatory



Cal OES

GOVERNOR'S OFFICE
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LAS Summary

A Loss Avoidance Study was conducted using the best available data from the Lick Observatory, UC Santa Cruz, and CalOES. The results of the SCU Lightning Complex Fire Loss Avoidance Study are summarized below:

Previously Completed Wildfire Mitigation Costs: \$864,330

Lick Observatory Structure Value (incl. Contents): \$77,152,670

Structure Damages (incl. Contents): \$3,769,707

Losses Avoided: \$72,518,632

A Savings of Approximately \$71.6 million dollars

OR

An ROI of over 8,000%!

Additional information regarding the LAS methodology, structure calculations, and descriptions of data sources can be found on the following pages.

LAS Methodology

To estimate the effectiveness of past wildfire mitigation projects undertaken around the Lick Observatory, a Loss Avoidance Study was conducted using the best available data from the Lick Observatory, UC Santa Cruz, Cal OES, and CAL FIRE. The process used to conduct the SCU Lightning Complex Fire Loss Avoidance Study was a GIS-based, total-loss methodology, leveraging the CAL FIRE DINS database to identify damaged structures and RSMeans costs per square foot to calculate building values of impacted structures. The University of California at Santa Cruz was our primary building related data source, the University provided structure attributes including Structure Type, Name, and Square Footage.

The resulting individual structure information provided by UC Santa Cruz can be found in the table below, including Square Feet, Year Built, and Construction Type.

Source Name	Struct ID	Structure Type	Structure Map Name	Construction Type	Yr Built	Occupancy	SqFt
7202 Diner	7202	Dining Hall	Diner	2-Story Wood Frame	1924	COM8	3,406
7205 Redel	7205	Residence Hall 9	Redel	2-Story Wood/Masonry	1926	RES1	2,400
7207 APF Automated Planet Finder	7207	Telescope	APF Automated Planet Finder Telescope	Masonry/Steel	2005	IND5	750
7208 KAIT Katzman 30" Robotic	7208	Telescope	KAIT Katzman 30" Robotic Telescope	Masonry/Steel	1964	IND5	417
7209 Tauchman 22" Reflector	7209	Telescope	Tauchman 22" Reflector Telescope	Masonry/Steel	1951	IND5	807
7210 Crocker Dome	7210	Dome	Crocker Dome	Masonry/Steel	1951	IND5	318
7211 Crossley 36" Reflector	7211	Dome-Crossley	Crossley 36" Reflector	Masonry/Steel	1912	IND5	2,122
7212 New Dorm	7212	Dorm 2	New Dorm	2-Story Wood Frame	1955	RES3C	3,454
7213 Old Dorm	7213	Dorm 1	Old Dorm	3-Story Masonary	1910	RES3C	5,827
7214A House (Lower)	7214A	Residence 10	House (Lower)	2-Story Wood Frame	1925	RES1	898
7214B Murphy (Upper)	7214B	Residence 10	Murphy (Upper)	2-Story Wood Frame	1925	RES1	897
7215 Carnegie 20" Astrograph	7215	Dome-Carnegie	Carnegie 20" Astrograph	Masonry/Steel	1939	IND5	960
7216 Lynam	7216	Residence 11	Lynam	2-Story Wood/Masonry	1951	RES1	1,545
7217 Empty	7217	Residence 12	Empty	2-Story Wood/Masonry	1951	RES1	1,545
7218 Espinosa	7218	Residence 13	Espinosa	2-Story Wood/Masonry	1952	RES1	1,545
7219 Watson	7219	Residence 14	Watson	2-Story Wood/Masonry	1955	RES1	1,545
7220 Halay	7220	Residence 15	Halay	2-Story Wood/Masonry	1956	RES1	1,545
7221 Roark	7221	Residence 16	Roark	2-Story Wood/Masonry	1957	RES1	1,545
7222 Carter	7222	Residence 17	Carter	2-Story Wood/Masonry	1961	RES1	1,545
7223 Francisco	7223	Residence 18	Francisco	2-Story Wood/Masonry	1961	RES1	1,545
7224 Chloros	7224	Residence 19	Chloros	2-Story Wood/Masonry	1961	RES1	1,545
7225 Brooks	7225	Residence 20	Brooks	2-Story Wood/Masonry	1961	RES1	1,545
7226 Perez	7226	Residence 8 Kron Annex	Perez	Wood Frame	1956	RES1	815
7227 Paint Shop	7227	Paint Shop	Paint Shop	Masonry	1928	IND2	263
7229 Quonset Hut Storage	7229	Quonset2 Storage	Quonset Hut Storage	Masonry/Steel	1956	IND2	894
7235 School House Garage	7235	Firetruck Garage	School House Garage	Masonry	1953	COM3	465
7240 Main Building	7240	Main Observatory	Main Building (Nickel 40" & Great 36" Refractor)	2-Story Masonary	1888	IND5	9,089
7260 Photo Building	7260	Photograph Bldg	Photo Building	2-Story Masonary	1925	IND2	2,445
7263 Fire Booster Pump House	7263	Pump House	Fire Booster Pump House	Unknown	1980	GOV2	560
7265 Harlan House (Recycling)	7265	Residence 7 - Storage	Harlan House (Recycling)	2-Story Wood Frame	1949	IND2	3,593
7266 Gates	7266	Residence 1	Gates	2-Story Masonary	1922	RES1	4,055
7267 Nichols	7267	Residence 4	Nichols	2-Story Wood/Masonry	1921	RES1	1,829
7268 Stone	7268	Residence 5	Stone	2-Story Wood/Masonry	1922	RES1	2,095
7269 Recreation Hall	7269	Residence 6	Recreation Hall	2-Story Wood/Masonry	1911	RES1	2,265
7271 House (Red Tagged)	7271	Residence 8	House (Red Tagged)	2-Story Wood/Masonry	1895	RES1	2,678
7272 House (Yellow Tagged)	7272	Residence 2	House (Yellow Tagged)	2-Story Wood/Masonry	1924	RES1	1,629
7274 Concrete Reservoir / Water Tank #2	7274	Water Tank	Water Tank #2	Unknown	1906	GOV2	1,257
7276 Shane 120" Reflector	7276	Telescope	Shane 120" Reflector Telescope	3-Story Masonary/Steel	1952	IND5	17,012
7279 L&M (Post Office)	7279	Lab & Meas Bid	L&M (Post Office)	2-Story Masonary	1958	IND5	5,625
7280 School House	7280	New Schoolhouse	School House	2-Story Wood/Masonry	1925	IND2	1,721
7281 Maintenance Shop	7281	Shop Bldg	Maintenance Shop	Masonry	1920	COM3	4,995
7282 Paint/Plumb/Generator/Sht Metal	7282	Storehouse & Garage	Paint/Plumb/Generator/Sht Metal	Masonry	1928	IND2	2,464
7293 Water Tank #1	7293	Water Tank	Water Tank #1	Unknown	1964	GOV2	1,964
7294 Water Tank #3 (not used)	7294	Water Tank	Water Tank #3	Unknown	1928	GOV2	1,257
7298 Old Dorm Heating Plant	7298	Old Dorm Heating Plant	Old Dorm Heating Plant	Unknown	1957	GOV2	926
7299 Water Treatment Plant	7299	Water Treatment Plant	Water Treatment Plant	Wood Frame	1996	GOV2	150
CAT 24" Coudé Aux Telescope	CAT	Telescope	CAT 24" Coudé Aux Telescope	3-Story Masonary/Steel	1952	IND5	800
Damaged Structures							

Building Values

With no recent Building Values available for use in our analysis, we developed the estimated values using the 2018 RSMMeans costs/square foot that are available within Hazus, FEMA’s Loss Estimation software. These costs are based on the Occupancy Types of each structure, which were determined by the type/use of each structure, as well as the number of stories for the residential structures. The national Occupancy Types and RSMMeans values within Hazus can be seen in the table below.

Occupancy Type	Structure Type	RSMMeans \$/sqft
COM3	Personal & Repair Services	139.88
COM8	Entertainment & Recreation	227.53
GOV2	Emergency Services	254.23
IND2	Light Industrial	120
IND5	High Technology	180.47
RES1	Single Family Dwelling	122.75
RES3C	Multi-Family Dwelling - Medium	201.33

To more accurately reflect the costs within Santa Clara County, a specific county Location Factor of 1.29 (which is provided by Hazus) was applied to the national RSMMeans price/sq foot costs. Depending on the Occupancy Type identified for each structure, the values associated with that Occupancy Type were then multiplied by the Location Factor (1.29) to produce the more accurate RSMMeans cost/sq ft value that were used to then determine the value of the building.

In order to perform the actual Building Value calculation, we took the resulting Santa Clara RSMMeans values and multiplied those per square foot values by the square footage of each structure to derive an estimated structure value. The table below provides a breakdown of all the structures included in the LAS by Occupancy Type. The table also indicates the number of structures damaged during the SCU fire by Occupancy Type, as well as the actual cost per square foot that was applied for each structure.

Occupancy Type	Total Structures	Damaged Structures	RSMMeans \$/sqft*
COM3	2	N/A	180.45
COM8	1	N/A	293.51
GOV2	6	N/A	327.96
IND2	6	1	154.8
IND5	10	N/A	232.81
RES1	20	7	158.35
RES3C	2	1	259.72

*Cost per square foot includes County Location Factor of 1.29

Content Values

For our Content Values, we incorporated the values provided by UC Santa Cruz (from a 2005 assessment) when available, however, in order to ensure the most accurate values were being incorporated into our analysis, we took into account inflation, and calculated new 2021 content values using the BLS.gov inflation calculator. For structures without a valuation, we took the standard approach of calculating a Content Value equal to 50% of the estimated Building Value.

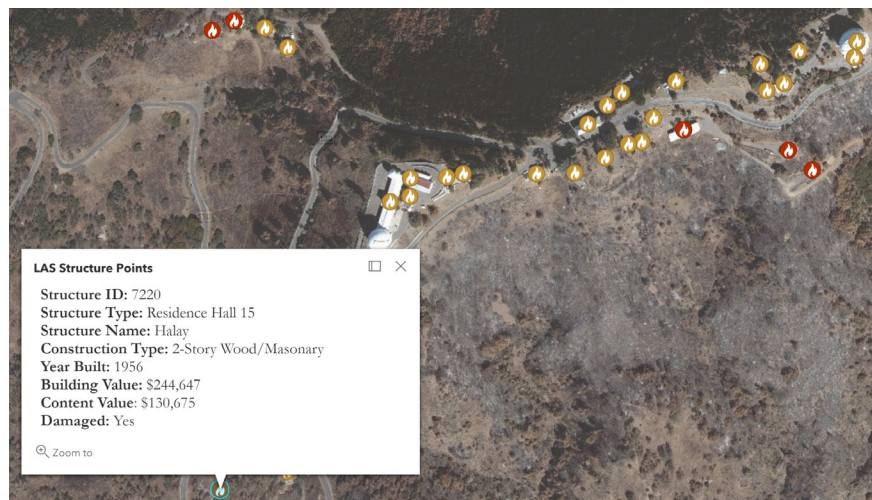
LAS By-The-Numbers

Once all the Building & Content values were determined, we could then perform the calculations needed to determine the Losses Avoided. The table below summarizes these various calculations and the formulas

Completed Wildfire Mitigation Projects	Cost Share Breakdown		Total
	75%	25%	
2007 Vegetation Management Project	\$380,497	\$126,832	\$507,330
2017 Re-Thinning Maintenance Project	\$281,250	\$75,750	\$357,000
Total Mitigation Cost	\$661,747	\$202,582	\$864,330
Estimated Value of Buildings			\$22,522,892
Estimated Value of Contents			\$54,629,777
Total Structure Value			\$77,152,670
Estimated Damaged Building Value			\$2,580,208
Estimated Damaged Content Losses			\$1,189,499
Total Damaged Structure Value			\$3,769,707
Estimated Losses Avoided*			\$72,518,632
Estimated Savings^			\$71,654,302
ROI#			8190%
*Structure Value - Damage Value - Mitigation Cost			
^Losses Avoided - Mitigation Cost			
#(Savings - Mitigation Costs) / Mitigation Cost			

LAS Web Map

A GIS-based web map was created to provide more of a spatial component to the LAS. This dynamic and interactive tool allows users to pan and zoom around the Lick Observatory grounds and surrounding area to better understand where damage occurred and to which structures. You can see in the screenshot below that many of the individual structure related data attributes (e.g., Structure Type, Year Built, and Building Values, and whether or not the structure was damaged) have been incorporated via a pop-up for each structure as well.



LAS & StoryMap Data Sources

Source	Dataset	Type	Note
Lick Observatory	Mitigation Project Data	.PDF & .JPG	Veg Management & Re-Thinning Project Maps, Photos
	Lick Obs Website	Web	Historical Background Info & Photos, Archive Info
	Lick Obs Photos	.JPG	Wildfire & Bldg Damage Photos
Source	Dataset	Type	Note
Cal FIRE	Fire Perimeters	GIS	Daily Polygon Feature Classes & Shapefiles
	2020 SCU Lightning Fire Post Fire Damage Inspection	Feature Service Point Layer (SCCPOSTFIRE2020)	CAL FIRE Preliminary Damage Assessments Destroyed (>50%); Major (26-50%); Minor (10-25%); Affected (1-9%); Inaccessible; No Damage
Source	Dataset	Type	Note
Cal OES	The Proof is at the Observatory - Mitigation Works	Word Doc	Source of content - summary of event and mitigation measures taken - event background, costs, quotes, etc.
	Lick Obs Drone Video	YouTube	Pre-event (2013) aerial footage of the observatory.
	Lick Obs Photos	.HEIC	Photos from Observatory following fire.
Source	Dataset	Type	Note
Deer Creek Resources	Mitigation Project Data	GIS	Veg Management Project Shapefiles (Bldg Footprints & Treatment Units)
Source	Dataset	Type	Note
Santa Clara Co	Parcels	GIS	Shapefile current as of Jan. 11th, 2021
	Aerial Imagery	MapService	2006 Santa Clara County Ortho-Imagery
	Aerial Imagery	MapService	2017 Santa Clara County Ortho-Imagery
	Aerial Imagery	MapService	2018 Santa Clara County Ortho-Imagery
	Aerial Imagery	MapService	Santa Clara County Post Fire Ortho Imagery 2020
Source	Dataset	Type	Note
Web	Tree Cutting Video	YouTube	Post-event (2020) on the ground footage of tree damage and clean-up following fire