Cal OES

GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

CALIFORNIA STATE HAZARD MITIGATION PLAN

Volume 2

Appendix C. Emergency Management Accreditation Program

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Appendix C. **Emergency Management Accreditation Program**

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C. EMERGENCY MANAGEMENT ACCREDITATION PROGRAM

The Emergency Management Accreditation Program (EMAP) is a voluntary program with the intent to evaluate federal, state, local, Tribal, and higher education emergency management programs based on a set of 66 standards designed to identify opportunities for continuous improvement. The State of California first received accreditation in 2012 and was reaccredited in 2017 and 2023.

The *Emergency Management Standard* covers the following topic areas:

- Program management, administration and finance, and laws and authorities
- Hazard identification, risk assessment, and consequence analysis
- Hazard mitigation
- Prevention
- Operational planning and procedures
- Incident management
- Resource management, mutual aid, and logistics
- Communications and warning
- Facilities
- Training
- Exercises, evaluations, and corrective action
- Emergency public education and information

These areas are evaluated to promote excellence and accountability within the emergency management program and may serve to inform strategic planning, improvement efforts, and resource allocations.

Standards that are inclusive of mitigation efforts include provisions for goal setting and developing Hazard Identification and Risk Assessment (HIRA) and Consequence Analysis. In addition to these components, the standards call for the emergency management program to have a mitigation program that addresses the vulnerabilities identified in the HIRA. Compliance with the hazard mitigation relevant standards in the *2019 EMAP Standard* is demonstrated below.

Standard 4.1.1

The Emergency Management Program identifies the natural and human-caused hazards that potentially impact the jurisdiction using multiple sources. The Emergency Management Program assesses the risk and vulnerability of people, property, the environment, and its own operations from these hazards.

Chapters 5 through 40 of the 2023 State Hazard Mitigation Plan (SHMP) profile 34 natural, meteorologic, biologic, human-caused, and technological hazards impacting the State of California. These hazards were identified based on California's hazard history statewide and locally, climate change projections, stakeholder input, and technical analysis. The identification of hazards is detailed further in Chapter 2, Chapter 4, and Appendix L.

The hazard profiles in Chapters 5 through 40 include an impact and vulnerability analysis to evaluate the risk and vulnerability of people, State-owned or -leased property and the environment.

Standard 4.1.2

The Emergency Management Program conducts a consequence analysis for the hazards identified in Standard 4.1.1 to consider the impact on the following:

- Public
- Responders
- Continuity of operations, including continued delivery of services
- Property, facilities, and infrastructure
- Environment
- Economic condition of the jurisdiction
- Public confidence in the jurisdiction's governance

The Consequence Analysis for each hazard is located in Table C-1.

Standard 4.1.3

The Emergency Management Program has a maintenance process for its Hazard Identification and Risk Assessment identified in Standard 4.1.1 and the Consequence Analysis identified in Standard 4.1.2, which includes a method and schedule for evaluation and revision.

The monitoring, maintenance, and update plan for the 2023 SHMP are detailed in Chapter 48. The strategy to ensure the entire SHMP, including the HIRA and Consequence Analysis, remains current and calls for annual meetings of stakeholders and subject matter experts. During these annual meetings, participants will discuss advances in hazard knowledge, changes in state and federal legislation, and the performance of mitigation projects during hazard events.

Additionally, the California Governor's Office of Emergency Services (Cal OES) will develop a five-year maintenance milestone schedule to guide the maintenance and implementation of the SHMP. The schedule is located in Chapter 48 and will be reviewed and updated during each annual meeting.

Standard 4.2.1

The Emergency Management Program has a plan to implement mitigation projects and sets priorities based on loss reduction. The plan:

- Is based on the natural and human-caused hazards identified in Standard 4.1.1 and the risk and consequences of those hazards
- Is developed through formal planning processes involving Emergency Management Program stakeholders
- Establishes short and long-term strategies, actions, goals, and objectives

The SHMP itself and the goals specified in Chapter 44 and mitigation actions in Chapter 47 of the 2023 SHMP are both developed in a manner to include the *EMAP Standards*, which require a formal planning process to develop a plan to implement mitigation projects and set priorities. The overall SHMP planning process is documented in Section 1.2. The goals are developed in a manner to allow for the development of short- and long-term objectives and mitigation strategies to align with the goal. This method is detailed in Chapter 44.

Standard 4.2.2

The Emergency Management Program documents project ranking based upon the greatest opportunity for loss reduction and documents how specific mitigation actions contribute to overall risk reduction.

The process for prioritizing mitigation actions for inclusion in the 2023 SHMP is documented in Section 47.2. Although all mitigation projects seeking Federal

Emergency Management Agency (FEMA) Hazard Mitigation Assistance (HMA) funding must be included in the SHMP, Cal OES also provides guidelines for reviewing and ranking activities and projects put forth by State agencies, local jurisdictions, Tribal Nations, and other eligible entities. This criterion is stated in Section 54.2.

Standard 4.2.3

The Emergency Management Program has a process to monitor the overall progress of the mitigation activities and documents completed initiatives and their resulting reduction or limitation of hazard impact on the jurisdiction.

In addition to the maintenance strategy in Chapter 48, Cal OES follows a three-level assessment process to evaluate the effectiveness of mitigation activities when the activity is tested by a real-world event. The assessment process includes identifying mitigation activities within the vicinity of the impact area, reviewing the scope of work of identified projects in coordination with subject matter experts, and completing a Loss Avoidance Study to estimate the dollar value of damages that would have occurred if the site or structure remained in its pre-mitigation state. Additional information on the process for documenting losses avoided is available in Section 54.3.

Standard 4.2.4

The Emergency Management Program, consistent with the scope of the mitigation program does the following:

- Identifies ongoing mitigation opportunities and tracks repetitive loss (RL)
- Provides technical assistance in implementing mitigation codes and ordinances
- Participates in jurisdictional and multi-jurisdictional mitigation efforts

California's status as an Enhanced hazard mitigation plan state lends itself to robust interagency coordination and aggressive risk reduction efforts. The State's capabilities include an active National Flood Insurance Program (NFIP) and widespread community participation in the Community Rating System (CRS) program to aid in tracking repetitive loss and identifying opportunities for further minimization of the risk. The State's capabilities and efforts aimed at reducing vulnerability and building resilience are described throughout the SHMP and, more specifically, in Chapters 42, 46, 53, and 54.

Standard 4.2.5

The Emergency Management Program has a maintenance process for the plan identified in Standard 4.2.1, which includes a method and schedule for evaluation and revision.

The process for monitoring, maintaining, and updating the SHMP is inclusive of the process for updating the HIRA and Consequence Analysis described previously. The process is detailed in Chapter 48. The strategy to ensure the entire SHMP remains current calls for annual meetings of stakeholders and subject matter experts. During these annual meetings, participants will discuss advances in hazard knowledge, changes in State and federal legislation, and the performance of mitigation projects during hazard events.

Additionally, Cal OES will develop a five-year maintenance milestone schedule to guide the maintenance and implementation of the SHMP. The schedule is located in Chapter 48 and will be reviewed and updated during each annual meeting.

Table C-1. Consequence Analysis

Subject	Impacts
Air Pollution	
Public	The California Air Resources Board (CARB) identifies about 200 toxic air contaminants that may cause serious, long-term effects, such as cancer, even at low levels. Most toxic air contaminants have no known safe levels, and some may accumulate in the body from repeated exposures. Air monitoring in California shows over 90 percent of residents breathe unhealthy levels of one or more air pollutants during some part of the year (CARB 2023).
Responders	First responders may experience an increase in calls for service to perform welfare checks; provide care to people experiencing a respiratory medical emergency; and support overall public safety efforts during an air pollution event. Responders will face increased exposure due to the need to respond to these events and require equipment to remain safe.
Continuity of operations (including continued delivery of services)	Public services may be interrupted when a building's ventilation system cannot filter the air, and the building is subsequently closed.

Subject	Impacts
Property, Facilities, and Infrastructure	Some air pollution, such as acid rain, can corrode building materials, requiring costly structural repairs. When outdoor air is polluted, ventilation systems may not be able to filter the air coming inside, posing a health risk to people inside (EPA 2023). All structures have the potential to be exposed to air pollution.
Environment	Several secondary effects of air pollution that would negatively impact the environment include acid rain, which could cause damage to trees, soils, crops, and water bodies (eutrophication); harm to wildlife due to concentrations of air toxins.
Economic Condition of the State	The State may experience economic losses during air pollution events due to people modifying their normal behaviors, such as visiting businesses, due to poor air quality.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Civil Disorder	
Public	Civil disorder incidents can lead to injury or death for involved persons and innocent bystanders. The number of people exposed to a civil disorder depends on the population density and the location of the civil disorder. Increases in population or the hosting of major political, economic, or social events could increase the likelihood and severity of a civil disorder incident.
Responders	If a civil disorder event turns violent, it can lead to injury or death for personnel responding to the incident.
Continuity of operations (including continued delivery of services)	State-owned or -leased facilities are often targets of civil disorders, making them more vulnerable to the effects of these events. They often become the focus of these types of events and disruptions in service may occur, resulting in utility failure and transportation interruption.
Property, Facilities, and Infrastructure	State-owned or -leased facilities are often targets of civil disorders, making them more vulnerable to the effects of these events. They often become the focus of these types of events. Critical facilities and community lifelines can become targets during civil unrest, resulting in utility failure and transportation interruption.
Environment	Civil unrest can result in environmental impacts, but they are likely to be limited. Fires that are started during civil unrest events can spread throughout cities, burning through areas that may include natural resources or hazardous materials and facilities.
Economic Condition of the State	Fires set by protesters can spread through communities, damaging homes and businesses.

Subject	Impacts
Public Confidence in State Governance	The perception of how well the State responds to and recovers from civil disorder will directly impact the public's confidence in State governance. Indications that the State was not well prepared and equipped to manage the response and recovery process will harm the State's reputation. Counter to that, a well-executed response and proper management of the event will boost public confidence in State governance. A well-executed response to a civil disorder incident may include preventing violence, restoring services, making repairs promptly, and ensuring community concerns are heard.
Cyber Threats	
Public	Cyber threats can vary in severity based on the systems affected by an attack, the warning time, and the ability to preempt an attack (CISA 2021). These factors impact the potential for a cyber-attack to have impacts on public health and safety, national security, economic security, foreign relations, civil liberties, and public confidence. Impacts to the public ranges from being inconsequential to resulting in an imminent threat to services, government stability, and life.
Responders	Responders may be susceptible to their computer systems also being a target for cyber-attacks; however, no direct physical impacts are anticipated.
Continuity of operations (including continued delivery of services)	The systems within State-owned or -leased facilities may serve as targets for cyber-attacks. Cyber-attacks on these systems can potentially disrupt daily operations and electronic functions throughout the State. These disruptions could last several months, and State agencies may lose access to their systems.
Property, Facilities, and Infrastructure	While the physical structures of the buildings are typically not at risk, information systems and data storage within those buildings are vulnerable. Computer networks may contain sensitive information and data, making them targets for cyber-attacks.
Environment	Cyber threats generally do not have direct impacts on the environment; however, computer system failures have the potential to result in hazards such as energy outages at wastewater treatment plants resulting in the release of untreated effluent; hazardous materials release; oil spills; and impacts to gas pipes.
Economic Condition of the State	A large-scale cyber incident could lead to significant economic losses to impacted State departments and agencies, businesses, and other industries.
Public Confidence in State Governance	The State's management of preparedness, response, and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust

Subject	Impacts
Dam Failure	
Public	Dam failure can significantly impact the public based on the warning time, size, and location of the dam. The public is at risk of injury, loss of life, and destruction and loss of property due to flooding caused by dam failure.
Responders	Responders may be faced with assisting with evacuation for dam failure incidents that have sufficient warning for evacuation. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on the continuity of operations would be limited unless a facility or critical infrastructure component is within the dam failure inundation zone associated with the dam failure. Delivery of services may be slowed or halted in adjacent areas if key roadways become impassable due to flooding or debris blockages.
Property, Facilities, and Infrastructure	Transportation routes, including bridges and highways, are vulnerable to dam inundation and can potentially be wiped out, creating isolation issues.
Environment	Dam failures can cause downstream flooding and transport large volumes of sediment and debris. Other environmental impacts include pollution from septic system failures; pollution of potable water supplies; changes in configurations of streams; loss of wildlife habitats; and degradation of wetlands.
Economic Condition of the State	Flooding resulting from dam failure can cause widespread damage to businesses and property. The estimated potential damage to State-owned or -leased facilities ranges from $146.4 million for a flood depth of 1 foot to $1.5 billion for a flood depth of 14 feet.
Public Confidence in State Governance	If a dam failure occurs on a dam owned and operated by the State, public confidence is likely to decrease. Additionally, any dam failure event may result in a decline in public confidence as the State is responsible for evaluating and ensuring the safety of dams. In addition, the success of proper notification to community members may impact how the public views the State's ability to manage these events.
Drought	
Public	Droughts cause public health and safety impacts associated with water shortage risks for small rural water systems and private residential wells. The public may be subjected to water rationing, limited availability of water sources, increased risk of wildfire, and scarcity of fresh, local foods.
Responders	Secondary impacts from droughts, such as wildfires, would increase the impacts on responders. In the event of a wildfire, responders may be called upon to assist with evacuation, close roads, and provide care to injured members of the public. As a result, responders may face an increased risk of personal injury.

Subject	Impacts
Continuity of operations (including continued delivery of services)	Impacts to the continuity of operations are limited. Organizations responsible for providing potable water may experience disruptions in water supplies.
Property, Facilities, and Infrastructure	Drought events generally do not impact buildings. No structures are anticipated to be directly affected by a drought, and all are expected to be operational during a drought event. However, facilities that provide potable water may be affected by short water supplies.
Environment	Drought can create hazardous conditions in forests and other vegetation-covered spaces, fueling wildfires (NOAA 2023a). Droughts can also create more prolonged fires fueled by excessively dry vegetation and reduced water supply for firefighting. Droughts put stress on trees and make them more susceptible to pest infestations. This, in turn, can lead to more diseased, dying, and dead trees (LAO 2022). An increase in groundwater pumping may lead to subsidence and dimmish water quality.
Economic Condition of the State	Drought can impact the economy, including loss of business function and damage and loss of inventory. The following economic impacts may include loss of crops, livestock, timber, and aquaculture production; loss of recreational and tourism opportunities; and increased energy costs.
Public Confidence in State Governance	Long-term severe droughts may cause public confidence to decline if State-led water utilities cannot provide adequate and continuous water service. Additionally, public confidence may be impacted by the State's decision to enact or not enact rations on water usage.
Earthquake	
Public	Earthquakes pose a significant threat to the public. The public may sustain injuries from collapsing structures, falling materials, and damaged utilities. Additionally, the public is at risk of loss of life.
Responders	Responders face risks related to injury and loss of life from aftershocks while responding to assist with managing an earthquake event.
Continuity of operations (including continued delivery of services)	Earthquakes can have significant impacts that result in damage to structures, roads, and utilities. Depending on the sustained damage, it may take several days, weeks, or months to make necessary repairs. During this time, there may be a disruption to State services.
Property, Facilities, and Infrastructure	Ground shaking from earthquakes can cause buildings and bridges to collapse; disrupt utility services; and trigger landslides, avalanches, flash floods, fires, and tsunamis (Waikato Region Emergency Management 2015). State and federal infrastructure (roads, highways, dams, and State water projects) located in areas with soils that are susceptible to liquefaction or earthquake-induced landslides can experience extensive cracking, ripping apart, settlement, and sloughing during an earthquake.

Subject	Impacts
Environment	Earthquake-induced landslides can significantly damage the surrounding habitat. It is also possible for earthquakes to reroute streams, which can change the water quality, possibly damaging habitat and feeding areas. Streams fed by groundwater and/or springs may dry up because of changes in underlying geology. Another threat to the environment from earthquakes is the potential release of hazardous materials
Economic Condition of the State	Earthquakes can cause damage and the loss of infrastructure that supports agricultural production, storage, and transport. Damage to major hubs, including ports, may have more substantial impacts. The annualized earthquake loss for the State was last estimated in 2016 to be $3.7 billion.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust
Electromagnetic Pulse Attack	
Public	The public is at risk of losing all means of electronic communication, water and wastewater services, gas, and other critical services dependent on electricity. Persons dependent on life-sustaining equipment powered by electricity are at a higher risk of impacts from an electromagnetic pulse (EMP) attack.
Responders	Responders' dependence on electronic communication equipment such as radios among other equipment puts them at a higher risk of losing communication capabilities during an EMP attack.
Continuity of operations (including continued delivery of services)	An EMP attack could disrupt critical infrastructure in the State, including the electrical grid, communication equipment, water and wastewater systems, and modes of transportation (CISA 2023). Other systems such as the 911 call systems and dispatch centers, hospitals, and health care, among others could also be affected.
Property, Facilities, and Infrastructure	System failures caused by an EMP attack could impact the structure or its contents.
Environment	There are no known environmental impacts from EMP attacks.
Economic Condition of the State	An EMP attack could result in economic losses due to the loss of electricity and transportation during an event.
Public Confidence in State Governance	The State's management of preparedness, response, and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust
Energy Shortage	
Public	Rolling blackouts during severe weather events can impact hundreds of thousands of Californians (Deliso 2022). Prolonged power outages can result in loss of life or health complications for persons dependent on life-sustaining equipment powered by electricity.

Subject	Impacts
Responders	Responders may be faced with conducting welfare checks, closing roads, assisting injured members or the public, and managing the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	Nearly all State-owned or -leased facilities rely on electricity to operate and provide essential services. Energy shortages can disrupt communications, water and wastewater treatment facilities, transportation systems, and other government functions.
Property, Facilities, and Infrastructure	Energy shortage events are not likely to result in any losses associated with property, facilities, and infrastructure damage.
Environment	Higher energy demand will result in more land being necessary for power facilities which could impact wildlife and open space. Solar developers require a minimum of 10 acres for a project, but at least 200 acres of land is necessary for a utility-scale project (YSG Solar 2021).
Economic Condition of the State	Energy shortages may cause a reduction in employment and wholesale and retail sales, a need for utility repairs, and increased medical risks. Local governments might lose tax revenues, and the finances of private utility companies and the businesses that rely on them would be disrupted.
Public Confidence in State Governance	The State's management of preparedness, response, and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Epidemic/Pandemic/Vector-Borne Disease	
Public	Widespread sickness and loss of life can result from epidemics, pandemics, and vector-borne diseases. Disease outbreaks reaching pandemic proportions can cause social impacts on a global scale (Shang, Li and Zhang 2021). For example, civil disorder, protests, depression, and anxiety are a few of the social impacts of the Coronavirus 2019 (COVID-19) pandemic.
Responders	Burnout and workforce shortages among first responders and public health and healthcare workers may be seen.
Continuity of operations (including continued delivery of services)	Health hazard events are not likely to result in any losses associated with damage or impairment to State assets. All losses from this hazard would be associated with impacts on operations and the economy.
Property, Facilities, and Infrastructure	The most significant impact on critical facilities would be the increase in hospitalization and emergency room visits resulting from a health hazard event. This would create a greater demand on these critical facilities, their staff, and resources.

Subject	Impacts
Environment	Epidemics, pandemics, and vector-borne diseases can be directly or indirectly tied to environmental impacts. Demand for single-use plastics to mitigate the spread of disease and increased waste generated by hospitals has negative environmental impacts. Powerful disinfectants end up in water supplies. Microplastics from degrading personal protective equipment (e.g., masks, gloves) can contribute to high concentrations found in fish, water, sediments, soils, and the air (Khan, Shah and Hossain 2023).
Economic Condition of the State	Potential statewide economic impacts include unemployment, price increases, and supply chain interruptions. Significant economic disruption can occur due to death, loss of work time, food insecurity, and costs of treating or preventing the spread of the virus or disease.
Public Confidence in State Governance	The State's management of preparedness, response, and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust
Extreme Cold or Freeze	
Public	The public may face impacts related to loss of life, illnesses, hypothermia, frostbite, and economic costs in transportation, agriculture, energy, and infrastructure. Persons experiencing higher social vulnerability may face more significant barriers to heating their homes. Using space heaters and fireplaces increases the risk of household fires and carbon monoxide poisoning. Persons experiencing homelessness face an increased risk as they are directly exposed to the hazard.
Responders	First responders will experience increased calls for service to perform welfare checks; provide care to people experiencing a medical emergency; and support overall public safety efforts during extreme cold or freeze events. Responders will face increased exposure due to the need to respond to these events and will require equipment to remain safe.
Continuity of operations (including continued delivery of services)	The impacts on continuity of operations would be limited unless a facility or critical infrastructure component is compromised, such as freezing and bursting pipes, due to cascading impacts from extreme cold or freeze.
Property, Facilities, and Infrastructure	Cold temperatures can freeze pipes, causing them to burst and create water leaks and water supply issues. Infrastructure such as roads and utilities are at risk to freezing temperatures, causing failures and hazardous road conditions.
Environment	Freezing and warming weather patterns create changes in natural processes. An excess snowfall followed by early warming periods may affect natural processes such as the flow of water resources.

Subject	Impacts
Economic Condition of the State	Extreme cold and freeze events can be costly due to impacts on resources for response, transportation, utilities, and crop damage. Economic hardship can be caused by loss of revenue and increased costs of necessary supplies.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Geomagnetic Storm (Space Weather)	
Public	Potential impacts to the public include secondary impacts due to the loss of communications and transportation.
Responders	During events known as radio blackout storms, solar flares can produce strong x-rays that degrade or block high-frequency radio waves used for radio communication.
Continuity of operations (including continued delivery of services)	Space weather events could result in disruptions to transportation systems and communications systems. Sectors particularly vulnerable to space weather impacts include electric power transmission, high-frequency radio communications, satellite communications, satellite drag, and global positioning (GPS) systems (NOAA SWPC 2023).
Property, Facilities, and Infrastructure	Space weather may negatively impact the power grid and other electric-powered infrastructure.
Environment	There are no known environmental impacts from space weather.
Economic Condition of the State	Although the risk of impact from space weather is small, California has many systems in its built environment which could be affected severely.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Hazardous Materials Release	
Public	Exposure to hazardous materials releases may cause short- and long-term health impacts such as difficulty breathing and eye, nose, throat, and lung irritation.
Responders	Responders may be faced with assisting with evacuation for a hazardous materials incident. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	In the event of a hazardous materials release at or near a State asset, State employees may need to evacuate a building, resulting in productivity loss that can be measured by days and dollar equivalency.

Subject	Impacts
Property, Facilities, and Infrastructure	State assets near facilities that store or process hazardous materials or transportation corridors that permit the transport of hazardous materials have increased risks. Hazardous material releases may lead to road closures until response and cleanup efforts are completed. This may impact access to communities, commuting to work, and the ability to deliver goods and services efficiently.
Environment	Hazardous releases can significantly harm wildlife in the surrounding area. The contamination also can make its way up the food chain, affecting the food supply. Open water and wetland environments experience significant exposure to hazardous materials events, which may indicate a loss of ecosystem services (Organisation for Economic Co-operation and Development n.d.).
Economic Condition of the State	The cost of recovery and cleanup from a hazardous materials release can cause economic hardship. The extent of hardship will depend on the severity of the event.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Invasive and Nuisance Species	
Public	Invasive and nuisance species may carry diseases and impact public health.
Responders	There are no anticipated impacts to responders from invasive and nuisance species.
Continuity of operations (including continued delivery of services)	There are no anticipated impacts to the continuity of operations from invasive and nuisance species.
Property, Facilities, and Infrastructure	Some species can impact vegetation and can result in stream bank instability, erosion, and increased sedimentation, impacting ground stabilization and possibly causing foundation issues for nearby structures. If species cause trees and other vegetation to die, there is an increased risk of damage to roadways, powerlines, buildings, and wildfire.
Environment	Invasive species can threaten native species, biodiversity, ecosystem services, recreation, water resources, agricultural and forest production, cultural resources, economies and property values, public safety, and infrastructure (USFS 2023a). Tree mortality is a clear secondary hazard related to invasive and nuisance species. As vegetation dies or becomes stressed and weakened by pests such as bark beetles, available fuel and high-intensity wildfires increase (USFS 2023b).

Subject	Impacts
Economic Condition of the State	Agricultural production could be severely impacted by invasive species and result in significant economic losses. Damage to crops from invasive and nuisance species can cause substantial increases in food prices and food insecurity among low-income communities (Paini, Sheppard and Cook 2016).
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Landslide, Debris Flow, and Other Mass Movements	
Public	According to the U.S. Geological Survey (USGS), slope failures in the United States result in an average of 25 to 50 lives lost per year. The public is at risk of injury and loss of life from landslides, debris flow, and other mass movements.
Responders	Responders may be faced with assisting with evacuation in areas impacted by landslide, debris flow, and other mass movements. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on continuity of operations would be limited unless a facility is within an impacted area. Delivery of services may be slowed or halted in these areas if key roadways become impassable due to flooding.
Property, Facilities, and Infrastructure	Landslides can pose a serious hazard to properties on or below hillsides. When landslides occur, they deform and tilt the ground surface. The result can be the destruction of foundations, offset of roads, breaking of underground pipes, or overriding of downslope property and structures.
Environment	A landslide alters the landscape. In addition to changes in topography, vegetation and wildlife habitats may be damaged or destroyed, and soil and sediment runoff will accumulate downslope, potentially blocking waterways and roadways and impairing the quality of streams and other water bodies. Landslides that fall into streams may impact fish and wildlife habitats and affect water quality. Hillsides that provide wildlife habitat can be lost for prolonged periods due to landslides.
Economic Condition of the State	Impacts to business and transportation networks can result in disruptions lasting several days, weeks, or months.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.

Subject	Impacts
Levee Failure	
Public	A levee system failure or overtopping can create severe flooding and high-water velocities that cause injury or loss of life. Receding flood waters can leave behind stagnant pools that provide breeding grounds for mosquitoes, which can transmit diseases.
Responders	Responders may be faced with assisting with evacuation for levee failure incidents that have sufficient warning for evacuation. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on continuity of operations would be limited unless a facility or critical infrastructure component is within the levee failure area. Delivery of services may be slowed or halted in adjacent areas if key roadways become impassable due to flooding or debris blockages.
Property, Facilities, and Infrastructure	Critical infrastructure failures such as loss of power, potable and wastewater treatment, and road and bridge failures can be caused by levee failure events, depending on the magnitude of the resulting flood.
Environment	Wildlife and fish can be impacted if flood waters from a levee failure destroy or fundamentally alter plant communities and thus reduce habitat. Floodwaters can also erode riverbanks and convey sediment to locations where it can clog riverbeds and streams, smother aquatic organisms, and destroy habitats.
Economic Condition of the State	A significant levee failure event would be costly for State and local governments in terms of emergency response, delivery of services, disaster cleanup, and future mitigation projects. Some of the costs could be recouped through federal grant reimbursements, but local governments would still feel the fiscal impact of a major event.
Public Confidence in State Governance	If a levee failure occurs on a levee owned and operated by the State, public confidence is likely to decrease. Additionally, any levee failure event may result in a decline in public confidence as the State is responsible for evaluating and ensuring the safety of dams and levees. In addition, the success of proper notification to community members may impact how the public views the State's ability to manage these events.
Natural Gas Pipeline Hazards	
Public	Natural gas is highly flammable and toxic to inhale, so exposure to any population can have costly and deadly impacts. A pipeline explosion or other incident resulting in property damage may displace residents or businesses for a prolonged period. This could create a need for long-term emergency housing or financial support.

Subject	Impacts
Responders	Responders may be faced with assisting with evacuation for natural gas pipeline incidents that have sufficient warning for evacuation. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on continuity of operations would be limited unless a facility or critical infrastructure component is within the levee failure area. Delivery of services may be slowed or halted in adjacent areas if the facilities depend on the natural gas pipeline.
Property, Facilities, and Infrastructure	Impacts to facilities are likely to be limited unless the facility is located within the impact area.
Environment	Burning any fossil fuel, including natural gas, emits greenhouse gases (GHG) into the atmosphere and contributes to climate change. Burning natural gas produces nitrogen oxides, which contribute to smog and acid rain.
Economic Condition of the State	Impacts to business and transportation networks can result in disruptions lasting several days, weeks, or months.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Oil Spills	
Public	Oil spills can threaten public health and quality of life due to the contamination of drinking water supplies, environmental degradation, and economic impacts.
Responders	Those assisting with cleaning up oil spills can be exposed to oil byproducts, dispersants, detergents, and degreasers. Drowning, heat-related illnesses, and falls are potential hazards to those cleaning up (OSHA 2010).
Continuity of operations (including continued delivery of services)	Depending upon the incident, State employees may need to evacuate the area if exposure may impact human health. This may result in a loss of productivity that can be measured by days and dollar equivalency.
Property, Facilities, and Infrastructure	In terms of facility-related and property damage, damage may include contaminated soil, groundwater, and nearby waterbodies.
Environment	A spill can result in habitat loss from the physical oil slick or the release of chemicals into an area (Environmental Pollution Centers 2023). Similarly, individual organisms can be directly affected as layers of oil can prevent thermoregulation, respiration, feeding, or mobility. They can also be affected by the chemicals released that act as toxins to the organism, leading to stunted growth, heart damage, immune system effects, and death (NOAA 2020).

Subject	Impacts
Economic Condition of the State	The environmental impacts of oil spills contribute to short- and long-term effects on economic activities in the affected areas. Moratoriums may be temporarily imposed on fisheries, and tourism may decline in beach communities (ITOPF 2023), resulting in economic hardship for individuals dependent on those industries for their livelihood and the economic health of the community as well. Large spill cleanup and remediation activities may cost millions of dollars, and impacts can last for years.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Other Potential Causes of Long-Term Electrical Outages	
Public	Prolonged power outages can result in loss of life for persons dependent on life-sustaining equipment powered by electricity.
Responders	Responders may be faced with conducting welfare checks, closing roads, assisting injured members or the public, and managing the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	Nearly all State-owned or -leased facilities rely on electricity to operate and provide essential services. Energy shortages can disrupt communications, water and wastewater treatment facilities, transportation systems, and other government functions.
Property, Facilities, and Infrastructure	Power outage events are not likely to result in any losses associated with damage to property, facilities, and infrastructure.
Environment	Higher energy demand will result in more land being necessary for power facilities which could impact wildlife and open space. Solar developers require a minimum of 10 acres for a project, but at least 200 acres of land is necessary for a utility-scale project (YSG Solar 2021).
Economic Condition of the State	Power outages are likely to be short-term and not result in significant economic impacts.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Public Safety Power Shutoff (PSPS)	
Public	Prolonged power outages can result in loss of life for persons dependent on life-sustaining equipment powered by electricity.
Responders	Responders may be faced with conducting welfare checks, closing roads, assisting injured members or the public, and managing the overall incident. Due to these activities, responders may face an increased risk of personal injury.

Subject	Impacts
Continuity of operations (including continued delivery of services)	Nearly all State-owned or -leased facilities rely on electricity to operate and provide essential services. Energy shortages can disrupt communications, water and wastewater treatment facilities, transportation systems, and other government functions.
Property, Facilities, and Infrastructure	Because these power outage events are usually scheduled and affected areas are usually given advanced notice, minimal loss associated with damage to property, facilities, and infrastructure is likely to occur. Depending on the length of the interruption, some systems, including older ones, may take time to restart or be adversely affected by the power disruption.
Environment	The environment is usually not exposed to power outages unless it results in a spill that contaminates water or open land or creates a wildfire.
Economic Condition of the State	Power outage events are not likely to result in any losses associated with damage to property, facilities, and infrastructure.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Radiological Accidents	
Public	In the event of an accident, those living and working within a 10-mile radius of the nuclear power plant could be more vulnerable to health and safety impacts from the accident.
Responders	Responders within a 10-mile radius of a radiological accident may be exposed to radioactive materials. In addition, responders may be faced with assisting with evacuation, closing roads, providing medical care to members of the public, and managing the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on continuity of operations would be limited unless a facility or critical infrastructure component is within the impact area. Delivery of services may be slowed or halted in adjacent areas.
Property, Facilities, and Infrastructure	Impacts to facilities are likely to be limited unless the facility is located within the impact area.
Environment	The impact on the environment will depend on where the event is located and the extent of radiological materials released. Animals, plants, and other wildlife in the surrounding areas of the event can see devastating impacts. Radiation pollution within waterways also accumulates within fish and other aquatic organisms, and runoff from radiation within the soil provides additional contamination (Sciencing 2021).

Subject	Impacts
Economic Condition of the State	A radiological accident could cause regional disruption to transportation networks and businesses.
Public Confidence in State Governance	The State's management of response and recovery efforts will influence public trust. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Riverine, Stream, and Alluvial Flood	
Public	Persons residing in the 100-year floodplain are the most at risk of impacts from flooding. Flooding can cause injury, loss of life, destruction, and property loss. Flood waters may carry containments impacting public health, and slowly receding floodwaters may harbor disease-carrying insects.
Responders	Responders may be faced with assisting with evacuation for flood events. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on the continuity of operations would be limited unless a facility is within a flood hazard area or is directly impacted by flood waters. Delivery of services may be slowed or halted in these areas if key roadways become impassable due to flooding.
Property, Facilities, and Infrastructure	Infrastructure may experience impacts in the form of damage from flooding, debris blockages, temporary closure of transportation routes, and the potential inability of the stormwater system to handle floodwater in a severe event.
Environment	Floods impact the environment by spreading pollution, overloading water and wastewater treatment plants, carrying silt and debris, and disturbing wildlife and natural areas. Riverine flooding can cause bank erosion and landslides. Hazardous materials spills can result from flooding if storage tanks rupture and spill into waterways.
Economic Condition of the State	A major flood event would be costly for State and local governments in terms of emergency response, delivery of services, disaster cleanup, and future mitigation projects. Some of the costs could be recouped through federal grant reimbursements, but local governments would still feel the fiscal impact of a major event.
Public Confidence in State Governance	Public confidence will be dependent on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.

Subject	Impacts
Sea-Level Rise, Coastal Flooding, and Erosion	
Public	Residents in coastal areas face the greatest risk of impacts from sea-level rise, coastal flooding, and erosion. Potential impacts include destruction and loss of property. Collapses of coastal bluffs and cliffs present significant dangers to beachgoers who may be injured or killed by falling sediment and rock. However, no injury or loss of life is anticipated from sea-level rise.
Responders	Responders may be faced with assisting with evacuation for flood and erosion events. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on the continuity of operations will be limited unless a facility is within the incident area. Impacted facilities may face economic impacts related to mitigation measures, relocation costs, and potential damage.
Property, Facilities, and Infrastructure	Development at the top of the bluff or cliff may be lost or require abandonment as erosion occurs. Roads and bridges may also experience damage and washouts.
Environment	Sea-level rise and long-term erosion can result in the migration of ecosystems inland. If beaches, wetlands, and other coastal habitats cannot migrate inland as sea-levels rise – because of sediment availability, shoreline armoring, or other development that blocks natural migration – they can be lost to permanent inundation or degraded by saltwater intrusion.
Economic Condition of the State	Coastal erosion can result in significant economic loss due to the destruction of buildings, roads, infrastructure, natural resources, and wildlife habitats. The long-term impacts of sea-level rise will alter how coastal resources are utilized in the State.
Public Confidence in State Governance	Public confidence will depend on how well the State manages adaptation measures to protect against the impacts of sea-level rise. For coastal flooding and erosion, the State's response and recovery process will influence public confidence.
Severe Wind, Weather, and Storms	
Public	Lightning, hail, and high winds from severe storm events puts the public at risk of injury and loss of life.
Responders	Responders may be faced with assisting with evacuation for severe weather events. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.

Subject	Impacts
Continuity of operations (including continued delivery of services)	The impacts on continuity of operations would be limited unless a facility is directly adversely affected by lightning or hail caused by a thunderstorm. Delivery of services may be slowed or halted in affected areas as a result of momentary losses in power and communications.
Property, Facilities, and Infrastructure	Damage to State assets can include roof damage from wind, structural damage from downed trees, and power outages. State infrastructure can be impacted by debris and downed trees/power lines, causing road closures, power outages, and limiting access to emergency personnel.
Environment	Severe weather that creates long periods of rainfall can erode natural banks along waterways and degrade soil stability for terrestrial species. Tornadoes can tear apart habitats, causing fragmentation across ecosystems. Researchers believe that more diseases can spread across ecosystems because of the impacts that severe weather and climate change have on water supplies. The residual impacts of a community's methods to maintain its infrastructure through winter weather (such as road salting) may also impact the environment.
Economic Condition of the State	A major severe weather event could disrupt the State's economy if damages are severe and widespread. However, impacts are generally limited.
Public Confidence in State Governance	Public confidence would largely depend upon how effectively the State prepares for and responds to a severe thunderstorm event.
Snow Avalanche	
Public	The fact that avalanches occur in remote settings far from large population centers means they do not pose the same danger to life and property as other hazards do. The people and structures most vulnerable to avalanches tend to be skiers, snowboarders, and others engaged in recreational activities in snow-covered, mountainous areas, along with the transportation infrastructure that serves those areas.
Responders	Responders may be faced with assisting with evacuation for avalanches. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on continuity of operations would be limited unless a facility is within an impacted area. Delivery of services may be slowed or halted in these areas if key roadways become impassable.
Property, Facilities, and Infrastructure	Impacts to facilities are likely to be limited unless the facility is located within the impact area.

Subject	Impacts
Environment	Avalanches might cause erosion on sloped terrain, thereby increasing the likelihood of future landslides. In addition, debris deposited in a river or stream because of avalanches might alter its flow and contribute to flooding later. There are numerous positive impacts, including the chutes and debris created by avalanches that help provide favorable habitats for various flora and fauna. Avalanches can also form firebreaks that help limit wildfires in wooded areas. Moreover, a self-regulating feedback loop occurs between avalanches and the trees in a forest. Trees that experience avalanches become stronger and more resilient, and these more robust trees, in turn, reduce the frequency of avalanches by reinforcing the snowpack and minimizing the effects of strong winds.
Economic Condition of the State	Avalanche events are typically more localized and, therefore, more likely to impact the local economy.
Public Confidence in State Governance	Public confidence will depend on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Subsidence	
Public	Subsidence occurring over an extended period of time is unlikely to result in injury or loss of life. Sudden events can result in injury or loss of life.
Responders	Due to the long-term nature of subsidence, there are no anticipated impacts on responders. In instances of sudden events, responders will be needed to close roads, assist injured members of the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	Due to the long-term nature of subsidence, impacts to the continuity of operations are anticipated to be limited unless the facility is directly within the area of movement. Delivery of services may be slowed or halted if roadways because impassable.
Property, Facilities, and Infrastructure	Subsidence has caused impacts on critical water infrastructure, including reduced conveyance capacity in local, State, and federal conveyance facilities, reduced levee heights, and damaged well casings (Carpenter and Borchers 2014). Throughout California, subsidence has damaged buildings, aqueducts, well casings, bridges, and highways.
Environment	Subsidence can cause permanent inundation of land, increase flooding, change the topography of the land, and reduce the capacity of aqueducts to store water (Holtzer and Galloway 2005).
Economic Condition of the State	Subsidence events are typically more localized and, therefore, more likely to impact the local economy.

Subject	Impacts
Public Confidence in State Governance	Public confidence will depend on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Terrorism	
Public	Acts of terrorism can range from minor to severe, with fatalities and damage that can fall into the same categories. Biological terrorism is a direct threat to public safety.
Responders	Responders may be faced with assisting with evacuation for terrorist events. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	Facilities that are targets for terrorism events face an increased risk of disruptions of their systems and operations as a result of potential damages.
Property, Facilities, and Infrastructure	State assets could be targets for terrorist events. Other property, facilities, and infrastructure may sustain damage and become inaccessible.
Environment	The environmental damage caused by terrorism includes terrestrial conflicts, terrorist camps and bases, training activities, and carbon dioxide emissions related to energy consumption (Bildrici and Gokmenoglu 2020).
Economic Condition of the State	The initial economic impact of a terrorist attack can be measured in immediate costs, such as costs related to responding to the event and those associated with the immediate loss of productivity due to closed businesses. The fuller economic impact includes long-term costs such as terrorism mitigation activities.
Public Confidence in State Governance	Public confidence will depend on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Transportation Accidents Resulting in Explosions or Toxic Releases	
Public	The public is at risk of injury and loss of life due to transportation accidents.
Responders	Responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on the continuity of operations would be limited unless a facility or critical infrastructure component is within the damaged area during a transportation accident. Delivery of services may be slowed or halted in adjacent areas if key roadways become impassable.

Subject	Impacts
Property, Facilities, and Infrastructure	Impacts to facilities are likely to be limited unless the facility is located within the impact area.
Environment	Impacts on the environment are likely limited unless the facility is located within the impact area.
Economic Condition of the State	Impacts on the economy are likely to be limited.
Public Confidence in State Governance	Public confidence will be dependent on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Tree Mortality	
Public	The public may be at risk of public health impacts if tree mortality events are caused by insect or disease impacts.
Responders	There are no anticipated impacts on responders.
Continuity of operations (including continued delivery of services)	There are no anticipated impacts on the continuity of operations unless a wildfire results from tree mortality.
Property, Facilities, and Infrastructure	There are no anticipated impacts to property, facilities, and infrastructure unless a wildfire results from tree mortality.
Environment	An increase in the number of trees dying will increase the impacts on air and water quality, increase the risk of flooding and erosion, and destroy natural habitats. The dead trees can also fuel wildfires, which are expected to become more frequent and extreme (California Office of Environmental Health Hazard Assessment 2019).
Economic Condition of the State	Tree mortality can result in economic hardship for forestry-focused industries.
Public Confidence in State Governance	Public confidence will depend on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Tsunami and Seiche	
Public	Although tsunamis and seiches are rare events, the consequences can be high. Tsunamis and seiches can quickly jeopardize the lives of millions of coastal residents, businesses, and visitors. The public can face severe injury and loss of life resulting from a tsunami.
Responders	Responders may be faced with assisting with evacuation for tsunami events. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.

Subject	Impacts
Continuity of operations (including continued delivery of services)	Tsunamis have the potential for widespread destruction. There is a high potential for services to be completely disrupted due to damages to facilities, utilities, and transportation networks.
Property, Facilities, and Infrastructure	The outflow of water back to the sea can damage property, facilities, and infrastructure due to items being swept away, undermining roads, buildings, bulkheads, and other structures. This outflow can carry enormous amounts of highly damaging debris, resulting in further destruction. Unless moved away from shore, ships and boats may be forced against breakwaters, wharves, and other watercraft or be washed ashore and left grounded after the seawater withdraws.
Environment	Ecosystems within the inundation areas for tsunamis and seiches that can withstand periodic inundation, such as wetlands, may be relatively unharmed by minor events. However, severe events that result in larger inundation areas may result in negative environmental impacts due to sediment erosion, debris, saltwater and pollutant contamination of soil and waterbodies, and other impacts.
Economic Condition of the State	A tsunami can have widespread impacts and completely devastate the economy. Businesses may sustain physical damages, and damages to transportation networks may make businesses inaccessible to the public.
Public Confidence in State Governance	Public confidence will depend on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Urban Structural Fire	
Public	Areas in the State that are heavily populated and developed may be at more risk – members of the public face the risk of injury and loss of life.
Responders	Responders may be faced with assisting with evacuation for urban structural fires. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Responders, such as firefighters, may experience dehydration, exhaustion, and exposure to hazardous materials. Due to these activities, responders may face an increased risk of personal injury and loss of life.
Continuity of operations (including continued delivery of services)	If an urban structural fire directly impacts a facility, it can be completely destroyed. If the facility can be repaired, it may take several weeks or months to complete repairs and smoke remediation. Services are likely to experience significant disruption.
Property, Facilities, and Infrastructure	Structures impacted by urban structural fires can be significantly damaged or destroyed. Urban fires damage and destroy buildings, infrastructure, and vehicles and can impact utilities.

Subject	Impacts
Environment	Most fires occurring in the built environment contribute to air contamination from the fire plume (whose deposition is likely to include land and water contamination), contamination from water runoff containing toxic products, and other environmental discharges or releases from burned materials (NFPA 2022).
Economic Condition of the State	The loss of a large manufacturing facility or business that employs a large number of people can mean extensive economic impacts.
Public Confidence in State Governance	Public confidence will be dependent on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Volcano	
Public	Impacts on the public include injuries related to burns and smoke inhalation, and loss of property and life.
Responders	Responders may be faced with assisting with evacuation for volcanic events. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The resulting ash and lava flow from volcanic activity could completely disrupt State services due to damage to facilities, utilities, and transportation networks.
Property, Facilities, and Infrastructure	Impacts to facilities are likely to be limited unless the facility is located within the impact area.
Environment	The environment is highly exposed to the effects of a volcanic eruption, including deterioration of water quality, fewer periods of rain, crop damage, and the destruction of vegetation (Zuskin, et al. 2007).
Economic Condition of the State	Volcanic events can have major economic impacts on a community, from the loss of and damage to structures and subsequent economic losses.
Public Confidence in State Governance	Public confidence will depend on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Well Stimulation and Hydraulic Fracturing	
Public	Well stimulation and hydraulic fracturing may release toxins and chemicals into the air, putting the public at risk. Harmful containments and chemicals could also be released into groundwater.
Responders	There are no anticipated impacts to responders from well stimulation and hydraulic fracturing.

Subject	Impacts
Continuity of operations (including continued delivery of services)	It is not likely that well stimulation and hydraulic fracturing will cause complete destruction of State-owned or -leased buildings and their contents. The impacts on continuity of operations would be limited unless a facility or critical infrastructure component is within the impact area. Delivery of services may be slowed or halted in adjacent areas.
Property, Facilities, and Infrastructure	Impacts to facilities are likely to be limited unless the facility is located within the impact area.
Environment	Hazards and environmental impacts resulting from fracking and well stimulation include contamination of groundwater with chemicals, air pollution from dispersion of chemicals and gases, and contamination of sub-surface rock formations from the injected chemicals. These concerns exist anywhere fracking is used as a gas and oil extraction method (Jackson, et al. 2014).
Economic Condition of the State	Well stimulation events are typically hyper-localized and, therefore, unlikely to have impacts on the economy.
Public Confidence in State Governance	Public confidence will be dependent how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.
Wildfire	
Public	Residents in high wildfire risk zones are the most vulnerable to impacts from a wildfire event. Impacts to the public include injuries related to burns, smoke inhalation, and loss of property and life.
Responders	Responders may be faced with assisting with evacuation for wildfire events. In addition, responders will be needed to close roads, assist injured members or the public, and manage the overall incident. Due to these activities, responders may face an increased risk of personal injury.
Continuity of operations (including continued delivery of services)	The impacts on continuity of operations would be limited unless a facility or critical infrastructure component is within the impact area. Delivery of services may be slowed or halted in adjacent areas.
Property, Facilities, and Infrastructure	Impacts to facilities are likely to be limited unless the facility is located within the impact area. The estimated replacement cost value for the structures and contents of State-owned or -leased assets exposed to the wildfire hazard is $1.9 billion.

Subject	Impacts
Environment	Fire can act as a catalyst for promoting biological diversity and healthy ecosystems, reducing the buildup of organic debris, releasing nutrients into the soil, and triggering changes in vegetation community composition (California Department of Fish and Wildlife 2022). However, in some circumstances, it can also cause severe negative environmental impacts such as soil erosion, cross loss, the spread of invasive and nuisance species, disease and insect infection, habitat destruction, soil sterilization, and damaged historic and cultural resources.
Economic Condition of the State	A major wildfire event would be costly for State and local governments because of the potential for damages associated with property, infrastructure, and impacts to health and air quality.
Public Confidence in State Governance	Public confidence will be dependent on how well the State manages response and recovery processes. Timely and accurate distribution of public information and notification during these events will also impact public trust.