

**THREAT AND HAZARD  
IDENTIFICATION AND RISK  
ASSESSMENT**

**EXECUTIVE SUMMARY**

**2017 Report  
Nevada**

## THIRA Executive Summary

### THIRA Process

Every community should understand the risks it faces. By understanding its risks, a community can make smart decisions about how to manage risk, including developing needed capabilities. Risk is the potential for an unwanted outcome resulting from an incident, event, or occurrence, as determined by its likelihood and the associated consequences. By considering changes to these elements, a community can understand how to best manage and plan for its greatest risks across the full range of the threats and hazards it faces. The THIRA process helps communities identify capability targets and resource requirements necessary to address anticipated and unanticipated risks.

The THIRA follows a four-step process, as described in *Comprehensive Preparedness Guide (CPG) 201, Second Edition*:

1. **Identify the Threats and Hazards of Concern.** Based on a combination of experience, forecasting, subject matter expertise, and other available resources, identify a list of the threats and hazards of primary concern to the community.
2. **Give the Threats and Hazards Context.** Describe the threats and hazards of concern, showing how they may affect the community.
3. **Establish Capability Targets.** Assess each threat and hazard in context to develop a specific capability target for each core capability identified in the National Preparedness Goal. The capability target defines success for the capability. (Note that the Unified Reporting Tool (URT) breaks THIRA Step 3 into two sub-steps in which you develop impact and outcome statements in the first step and establish capability targets in the second step).
4. **Apply the Results.** For each core capability, estimate the resources required to achieve the capability targets through the use of community assets, while also considering preparedness activities.

**Threats/Hazards in Context**

Name	Context Description
Earthquake	<p>1. A magnitude 6.9 earthquake along the Mount Rose Fault (April-September), resulting in significant damage/disruption to infrastructure and energy/fuel delivery systems, the moderate to severe damage of 1,200 residential structures, moderate to severe damages to 300 small to medium sized businesses, and other damage out to 40 miles from the epicenter. This event would displace +/- 5,000 persons, inflict moderate to severe injury to 3,000 persons, and cause 50 deaths.</p> <p>2. A magnitude 6.0 earthquake along the Frenchman Mountain Fault occurs during the peak tourism months (April - September). This earthquake will result in widespread damage throughout the Las Vegas Urban Area, including aging unreinforced masonry buildings and high-rise resort hotels on the Las Vegas Strip. The economic loss as a result of the earthquake exceeds \$7 billion. Over 15,000 buildings experience major damage. More than 3,600 people will require shelter, over 1,100 casualties are expected, and nearly 300 fatalities are likely.</p> <p>3. A magnitude 7.8 Earthquake on the San Andreas Fault with epicenter near Salton Sea. This earthquake will result in damage out to 60 miles from the epicenter, impacting fuel, vehicular transportation, and power through Cajon Pass and the I-15 corridor to Las Vegas. While mass migration from impact areas within Southern California may occur with as many as 50,000 persons seeking temporary shelter, fuel disruption to the Las Vegas area and McCarran Airport is ongoing for 7-10 days.</p>
Flood	<p>A 100/500-year event results in catastrophic flash floods causing flooding to critical infrastructure including: 100 small/medium businesses with moderate to major damage, 15,000 residential homes with moderate to major damages. public roadways and highways damaged including the undercut of 30 miles of primary roadway, 300 culverts blocked or damaged. Discharge/Flow rates in excess of 23,500 cubic feet/second in strained public flood channels. Flooding impacts last for three months.</p>
Wildfire	<p>A lightning strike causes a 5,000-10,000 acre wildfire threatening 500 residential and small/medium commercial structures, as well as Critical Infrastructure/Key Resource (CIKR) sites in the urban interface in July. Because of this fire, 2,000 persons are displaced with 500 requiring shelter for a period of three days. Additionally, 100 (reduced from 200) persons have adverse respiratory/medical reactions due to smoke and fire activities requiring hospitalization for 24 hours. There is a displacement of animals and livestock requiring the establishment of sheltering/housing specific to this population, no more than 100, for seven days.</p>

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Pandemic – Human	An infectious disease outbreak is introduced to southern Nevada by way of direct air travel into Las Vegas and transmitted efficiently from person to person resulting in large numbers of people being infected. The pandemic wave will sweep across southern Nevada in 1-2 months (New timeframe), and observed after 1-2 months (new observation period) affecting multiple locations both in southern and northern (new location) Nevada, as well as simultaneously impacting other locations outside of state due to transient population movement (new wider population impact). 3.0 % of overall population have minor to moderate infections that impact their ability to work for one to three weeks.
Active Shooter	A coordinated active shooter incident (i.e., Mumbai/Paris-style attack) targeting multiple commercial soft targets along the Las Vegas Strip using small arms and improvised explosive devices (IEDs). 2-5 (new number) gunmen attack various locations, including three (3) luxury hotels/casinos, a hospital and nearby international airport. The attack stretches on for 6 hours. (shortened timeframe). There are 75 fatalities and 250 non-fatal (new human impacts) injuries as a result of the assault and or other actions or mechanisms of injury.
Cyber Attack	A cyber related incident resulting in the loss of system integrity to information technology systems that also severely compromises essential services. The event creates an inability for systems and their operators to understand, detect, and isolate the event, and destabilizes critical technology systems. One of the consequences is the inability to conduct financial transactions within the impacted systems.
Drought	8 years of persistent extreme to exceptional drought that results in: 20% of the county's private wells running dry; municipal water reserves are at emergency levels; and the effect of the drought results in a 20% economic downturn for the county.
Hazmat Release – Chemical	Non-terrorism transportation system release involving rail/freight line derailment near or on major highway corridor causing a chemical or hazardous material (i.e., chlorine) spill and potential plume over a major population area. This results in the displacement of 25,000 persons from 3,000 residential and 750 commercial buildings within the impacted area. Additionally, the release causes injury to 150 persons and death to 50 persons.

### THIRA Capability Targets

Core Capability	Capability Target
Planning	Protection/Response/Recovery: Insure that 100% of Nevada's jurisdictions have developed and maintained all-risk/all-hazard plans, Continuity of Operations (COOP), Emergency Operations Plan's (EOP)'s, and Recovery Plans. Mitigation: Update the State of Nevada Hazardous Mitigation Plan every 5 years, to ensure it meets the Emergency Management Accreditation Program (EMAP) requirements for approval and certification during the specified time frames, and addresses all relevant threats/hazards identified in Nevada's THIRA and other appropriate risk assessments for the state.
Public Information and Warning	Within 30 minutes and using a variety of delivery systems, provide warnings to 100% of the people of an imminent event, including information on how to take appropriate actions, and provide the affected population with information on how to obtain essential services and access resources following the event.
Operational Coordination	Establish and maintain a unified command/control ICS structure with all intrastate and interstate stakeholders to identify and coordinate incident management activities within 30 minutes of awareness of the threat/hazard across the impacted area. Within 1 hour, mobilize critical resources and establish command, control, and coordination structures through the SEOC and 16 Emergency Support Functions in the state, as well as all appropriate local EOC's in the impacted area/community, and maintain, as needed, throughout the duration of an incident.
Forensics and Attribution	Prioritize, collect, and examine 100% of evidence associated with an act of terrorism or an imminent terrorist attack across 17 counties and all critical infrastructure sectors. Identify 100% of the terrorist actors, co-conspirators, and their sponsors by fusing all science-based forensic results and all source intelligence information and products across 17 counties and all critical infrastructure sectors.
Intelligence and Information Sharing	Ensure that 100% of applicable intelligence will be shared with stakeholders within 2 hours. Within 1 hour of receiving intelligence from the fusion center, disseminate actionable intelligence and information to key stakeholders from all agencies/organizations. Within 2 hours, develop information and intelligence gathering priorities in response to a dynamic threat scenario with a potential for follow-on attacks and ensure identification and tasking of all available intelligence assets to support these priorities.
Interdiction and Disruption	Deploy 20 specialized tactical alert teams, bomb squads, or EOD units within 1 hour to prevent initial or follow-on terrorist attacks. Conduct simultaneous tactical counter-terrorism operations in up to 5 separate locations on 3 consecutive days. Identify response capabilities and establish strategic plan for cyber-attack response.
Screening, Search, and Detection	Ensure 100% of Nevada's hospitals and local public health agencies have the ability to coordinate syndromic surveillance. Employ wide-area search and detection assets in 100% of the targeted areas in concert with local, state, tribal, private sector, or other federal agencies based on known or suspected threat information.

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Access Control and Identity Verification	Ensure identities of 100% of personnel who are authorized to access systems and facilities for CIKR sites. Grant or deny physical access of an estimated 500 people to specific locations, information, and networks.
Cybersecurity	Within 2 years, using a phased approach, implement risk-informed guidelines, regulations, and standards to ensure the security, reliability, integrity, and availability of critical information, records, and communications systems and services to state networks, critical infrastructure and key resources, through collaborative cybersecurity initiatives and efforts.
Physical Protective Measures	Implement and maintain risk-informed physical protections, countermeasures, and policies, protecting all public sector critical infrastructure and key resources facilities, 17 jurisdictions, and tribal partners, operated internet systems, and those materials, products, and systems associated with critical infrastructure sectors and other key operational activities. Encourage all private sector critical infrastructure and key resources owners and operators to do likewise.
Risk Management for Protection Programs and Activities	Complete and maintain updated risk assessments for 100% of the CIKR sites within the State of Nevada.
Supply Chain Integrity and Security	Secure and make resilient all major interstate highways, nodes, methods of transportation between nodes, and materials in transit across all sectors and 17 counties within Nevada.
Community Resilience	Ensure 100% of the individuals in the affected area are educated regarding measures to be taken to safeguard their homes and businesses. Build human resource capacity by 30% through citizen engagement via citizen core groups such as community emergency response teams (CERT) or voluntary organizations active in disaster (VOAD).
Long-term Vulnerability Reduction	Develop a strategy to reduce or eliminate 50% of risks from natural, technological, and human caused hazards for people and property in 3 years.
Risk and Disaster Resilience Assessment	Support, assist, and motivate 17 counties in prioritizing their risks, needs, and resources using the most current knowledge of existing critical assets, key resource lifelines, systems, and networks and their performance post-quake. Conduct a statewide risk assessment every year that includes information about localized vulnerabilities.
Threats and Hazards Identification	Identify 5 of the worst-case, plausible threats and hazards to the region and provide timely and accurate data on these threats and hazards through a continual process of data collection and analysis. Encourage 17 jurisdictions to identify threats and hazards on an annual basis. Identify and provide context for 5 threats and hazards in collaboration with whole community partners and incorporate this into the analysis and planning process.

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Critical Transportation	Within the first 24 hours after an incident, inspect, re-establish, and maintain 3 land and air routes to move all first responders and other resources to safely sustain 100% of the affected persons in the vicinity of the incident. Within the first 48 hours of an incident, establish physical access to deliver required resources to save lives and meet the needs of 100% of the people in the affected area.
Environmental Response/Health and Safety	During the first 12 hours of an incident, conduct health and safety hazard assessments and disseminate guidance and resources, including the deployment of hazardous materials teams, to support environmental health and safety actions for 100% of response personnel and 100% of the population within the affected area.
Fatality Management Services	Within 12 hours of an incident, conduct operations to recover all fatalities. Within 24 hours of a request to support a mass fatality incident, establish initial morgue operations, prepare for the arrival of Disaster Mortuary Operational Response Teams (DMORT) support, and obtain refrigeration units and other resources to recover or collect up to 200 fatalities and provide counseling services to 100% of the bereaved.
Fire Management and Suppression	Within +2 hours of wildfire ignition, initiate the wildfire response plan for the Agency Having Jurisdiction (AHJ). Within this same time-frame, provide an accurate assessment of wildfire behavior and projected growth sufficient to provide accurate public information and warning to the affected community. Maintain or have available 15 Strike Teams of Type I engines, and 10 Strike Teams of Type II engines for deployment within +2 hours from ignition and/or notification. Upon containment of the wildfire impact area, and within a three day period after such containment, initiate damage assessment and establish short and long-term housing for the affected population up to the limits indicated by the threat context for wildfire. Maintain within the State of Nevada sufficient overhead personnel sufficient to manage two wildfires simultaneously at the size and complexity as identified in the Wildfire context within this document.
Infrastructure Systems	Within 72 hours of an event, restore 50% of peak household power outages of the total 200,000 customers without power, and 50% of critical facility outages. Within five days, restore 75% of peak household power outages and 75% of critical facility outages. Within 72 hours restore water and sewer services to 50% of the effected community, and within 5 days restore 75% of water and sewer services to the affected community. Within 96 hours, restore natural gas services to 50% of the affected community.
Logistics and Supply Chain Management	During the first 72 hours of an incident, mobilize and deliver essential public and private services and resources needed to save lives and meet the needs of all people in the impacted area.
Mass Care Services	Within 24 hours of an incident, mobilize resources and capabilities to provide life-sustaining services to the affected population, including animals, consisting of shelter for an estimated 100,000 people in need of potable water, sanitation disposal, security, mental health treatment, functional needs assistance, and veterinary services, and provide support for reunifying families.

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Mass Search and Rescue Operations	Within the first 4 hours of the incident, identify and deploy 20 Type I and 20 Type III Wilderness Search and Rescue (SAR) Teams to the affected area. Within 12 hours of an incident, conduct search and rescue operations to search 75% of damaged structures to locate and rescue persons in distress. Within 24 hours of the incident, identify and deploy three Type I Urban Search and Rescue (USAR) Task Forces to the affected area and evaluate 75% of collapsed structures, locate and rescue 20% of the affected population in confined space. During the response phase of the incident, maintain a functional and qualified Incident Management Team (IMT) for SAR operations to insure continual operational continuity and safety.
On-scene Security, Protection, and Law Enforcement	Within 12 hours, establish and maintain on-scene security and protection needs for the incident area in order to mitigate the risk of further damage to persons, property, and the environment.
Operational Communications	Within 12 hours of an incident, ensure interoperable communication networks for emergency services are functional statewide through the repair or transition to backup systems. Restore traditional analog and digital communications systems within 24 hours. Ensure the ability to share data, including photographs and live video, among 3 command posts in the region, the state fusion center, and the state operations center. Provided for remote delivery of radio and communications systems to rural incidents.
Public Health, Healthcare, and Emergency Medical Services	Within 48 hours of the receipt of medical countermeasures from the Federal Government, distribute and dispense medications to 100% of the exposed population. Provide a mass immunization capacity of 460 people per hour (1 POD lane w/ 8 vaccinators = 460 PPH) for each POD opened (i.e. 5 one lane POD's = 2300 PPH) in the affected community for 2 days. Provide medical treatment to 100% of the incident casualties within 24 hours.
Situational Assessment	Within 12 hours of an incident, gather and compile situation reports from all affected jurisdictions (cities, counties, and state agencies) to develop and maintain a common operating picture. Deliver critical information updates every 4 hours (or sooner). Deliver critical information updates every 4 hours (or sooner, depending on the incident) throughout the operational period to inform decision makers regarding lifesaving and life-sustaining activities.
Economic Recovery	Within 14 days of an incident, develop a Recovery Support Strategy (RSS) in concert with whole community partners and a specific timeline to restore community infrastructure sites.
Health and Social Services	Within 7 to 10 days, engage in the following recovery functions: case management intake, direct physical labor, volunteer management, and leadership and capacity building for government, nonprofit, and faith-based organizations. Within 1 month of the opening of the Joint Field Office (JFO), restore basic health and social services functions. Identify critical areas of need for health and social services, as well as key partners and at-risk individuals (such as children, those with disabilities and others with access and functional needs, and populations with limited English proficiency).
Housing	Within 2 weeks of the opening of the JFO, assess preliminary housing impacts and needs, identify currently available options for temporary housing, and initiate a plan for permanent housing. Within 48 hours, assess preliminary housing impacts and needs across the entire jurisdiction; identify currently available options for temporary housing for 100% of the affected population, including individuals with access and functional needs.
Natural and Cultural Resources	Within 2 months of the opening of the JFO, complete an assessment of all affected natural and cultural resources and develop a timeline for addressing these impacts.