

# Las Vegas Valley Earthquake Tabletop Exercise (TTX)

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## Situation Manual

January 28<sup>th</sup>, 2020

This Situation Manual (SitMan) provides exercise participants with all the necessary tools for their roles in the exercise. Some exercise material is intended for the exclusive use of exercise planners, facilitators, and evaluators, but players may view other materials that are necessary to their performance. All exercise participants may view the SitMan.

## Preface

Exercises are a critical component in the emergency management process to identify strengths and areas for improvement to achieve a greater level of collective preparedness.

This Situation Manual (SitMan) provides exercise participants with all the necessary tools for their roles in the exercise. All exercise participants may view the SitMan. However, some exercise material should not be provided to exercise players because it is intended for the exclusive use of exercise planners, facilitators, and evaluators. Such material should be presented under separate cover (i.e., as part of the Facilitator and Evaluator Handbook).

## Special Handling Instructions

While the outline for this exercise is available to the public, if Exercise Design Teams (EDTs) choose to customize the exercise with local information, they may decide to designate the materials as For Official Use Only (FOUO) to designate its contents as sensitive information not to be disclosed to unauthorized personnel.

The control of exercise information is based on sensitivity regarding the nature of the exercise (e.g., the exercise scenario may address politically sensitive issues and/or may portray detailed response plans and potential response shortcomings), rather than the actual exercise content.

If deemed FOUO by the EDT, all exercise participants should follow appropriate guidelines to ensure proper control of information within their areas and safeguard, handle, transmit, and store this material in accordance with current information security policies and directives.

Reproduction of the sensitive information, in whole or in part, is prohibited without prior approval from Apex Industrial Area Emergency Response Group. At a minimum, this document will be provided on a need-to-know basis only.

## EXERCISE OVERVIEW

|                                    |  |
|------------------------------------|--|
| <b>Exercise Name</b>               | Las Vegas Valley Earthquake Tabletop Exercise (TTX)  |
| <b>Exercise Dates</b>              | January 28 <sup>th</sup> , 2020  |
| <b>Scope</b>                       | This exercise is a discussion based exercise, planned for 3 hours at NV Energy Chuck Lenzie Plant. Exercise play is limited to the scenarios set forth in this Situation Manual (SitMan).  |
| <b>Mission Area(s)</b>             | Response and Recovery  |
| <b>Core Capabilities</b>           | <ul style="list-style-type: none"><li>• Information Sharing</li><li>• Operational Coordination</li><li>• Public and Private Services and Resources</li><li>• Situational Assessment</li></ul>  |
| <b>Objectives</b>                  | <ul style="list-style-type: none"><li>• Explore ability to effectively communicate between organizations;</li><li>• Identify resources and their capabilities available in the area (Government and private);</li><li>• Identify individual company strengths and weaknesses when responding to emergencies;</li><li>• Assess the ability to effectively establish and maintain a unified and coordinated operational structure that integrates critical whole community partners in planning and implementation of response and recovery actions.</li></ul> |
| <b>Threat or Hazard</b>            | Earthquake   |
| <b>Scenario</b>                    | The Tabletop Exercise discussion will be centered around a 6.6 magnitude earthquake scenario that occurs near the Frenchman Mountain Fault in the Las Vegas Valley Shear Zone. The earthquake causes significant damage throughout the immediate area northeast and southwest of the epicenter.  |
| <b>Sponsor</b>                     | Apex Industrial Area Emergency Response  |
| <b>Participating Organizations</b> | See Appendix B   |
| <b>Point of Contact</b>            | Robert Hanus: <a href="mailto:rhanus@nvenergy.com">rhanus@nvenergy.com</a> or 702-402-8203<br>Joe Sabo: <a href="mailto:joseph.sabo@lhoist.com">joseph.sabo@lhoist.com</a> or 702-321-4640   |

## GENERAL INFORMATION

### Exercise Objectives and Core Capabilities

The following exercise objectives in Table 1 describe the expected outcomes for the exercise. The objectives are linked to core capabilities, which are distinct critical elements necessary to achieve the specific mission area(s). The objectives and aligned core capabilities are guided by elected and appointed officials and selected by the Exercise Planning Team.

| Exercise Objective  | Core Capability |
|---|-----------------|
| Explore ability to effectively communicate between organizations  | Planning        |
| Identify resources and their capabilities available in the area (Government and private)  | Planning        |
| Identify individual company strengths and weaknesses when responding to emergencies   | Planning        |
| Assess the ability to effectively establish and maintain a unified and coordinated operational structure that integrates critical whole community partners in planning and implementation of response and recovery actions. | Response        |

Table 1. Exercise Objectives and Associated Core Capabilities

### Participant Roles and Responsibilities

The term *participant* encompasses many groups of people, not just those playing in the exercise. Groups of participants involved in the exercise, and their respective roles and responsibilities, are as follows:

- **Players.** Players are personnel who have an active role in discussing or performing their regular roles and responsibilities during the exercise. Players discuss or initiate actions in response to the simulated emergency.
- **Observers.** Observers do not directly participate in the exercise. However, they may support the development of player responses to the situation during the discussion by asking relevant questions or providing subject matter expertise.
- **Facilitators.** Facilitators provide situation updates and moderate discussions. They also provide additional information or resolve questions as required. Key Exercise Planning Team members also may assist with facilitation as subject matter experts (SMEs) during the exercise.
- **Evaluators.** Evaluators are assigned to observe and document certain objectives during the exercise. Their primary role is to document player discussions, including how and if those discussions conform to plans, policies, and procedures.

## **Exercise Structure**

This exercise will be a multimedia, facilitated exercise. Players will participate in the following three modules:

- Module 1: Initial Response – Scenario Background
- Module 2: Response – Apex
- Module 3: Review

Each module begins with a update that summarizes key events occurring within that time period. After the updates, participants review the situation and engage in functional group discussions of appropriate response issues. For this exercise, the functional groups are as follows:

- Private Companies
- Response Agencies

After these functional group discussions, participants will engage in a moderated plenary discussion in which a spokesperson from each group will present a synopsis of the group's actions, based on the scenario.

## **Exercise Guidelines**

- This exercise will be held in an open, low-stress, no-fault environment. Varying viewpoints, even disagreements, are expected.
- Respond to the scenario using your knowledge of current plans and capabilities (i.e., you may use only existing assets) and insights derived from your training.
- Decisions are not precedent setting and may not reflect your organization's final position on a given issue. This exercise is an opportunity to discuss and present multiple options and possible solutions.
- Issue identification is not as valuable as suggestions and recommended actions that could improve response efforts. Problem-solving efforts should be the focus.

## **Exercise Assumptions and Artificialities**

In any exercise, assumptions and artificialities may be necessary to complete play in the time allotted and/or account for logistical limitations. Exercise participants should accept that assumptions and artificialities are inherent in any exercise, and should not allow these considerations to negatively impact their participation. During this exercise, the following apply:

- The exercise is conducted in a no-fault learning environment wherein capabilities, plans, systems, and processes will be evaluated.
- The exercise scenario is plausible, and events occur as they are presented.
- All players receive information at the same time.

## **Exercise Evaluation**

Evaluation of the exercise is based on the exercise objectives and aligned capabilities, capability targets, and critical tasks, which are documented in Exercise Evaluation Guides (EEGs). Evaluators have EEGs for each of their assigned areas. Additionally, players will be asked to complete participant feedback forms. These documents, coupled with facilitator observations and notes, will be used to evaluate the exercise and compile the After-Action Report (AAR).

## **MODULE 1: INITIAL RESPONSE – SCENARIO BACKGROUND**

**January 29<sup>th</sup>, 2020: 9:00AM**

Without warning, on January 29<sup>th</sup>, 2020 at 0902 Pacific Standard Time (PST), residents in the Las Vegas Valley and the surrounding area experience a sudden shaking of the ground accompanied by cars sliding off roads and the rattling of buildings. An earthquake has just occurred along the Frenchman Mountain Fault near North Las Vegas, Nevada. The rupture shoots northeast and southwest from the epicenter along the fault, sending seismic energy waves out in all directions. As the earthquake's rupture front travels along the Las Vegas Valley Shear Zone, it sends out seismic waves that shake the ground for nearly 30 seconds. Experts confirm the earthquake is a 6.6 on the moment magnitude scale. Initial reports estimate the quake was felt within a 50 mile radius around the epicenter.

The quake causes several ruptures of Interstate 15 and Las Vegas Blvd. Several bridges and overpasses suffer damage. Many cars and trucks collide as the roads crack under and around them. The strong shaking also triggers landslides across the rails and roads along Interstate 15 and Las Vegas Blvd north and east of North Las Vegas. Falling debris blocks dozens of roads and railways, stranding motorists.

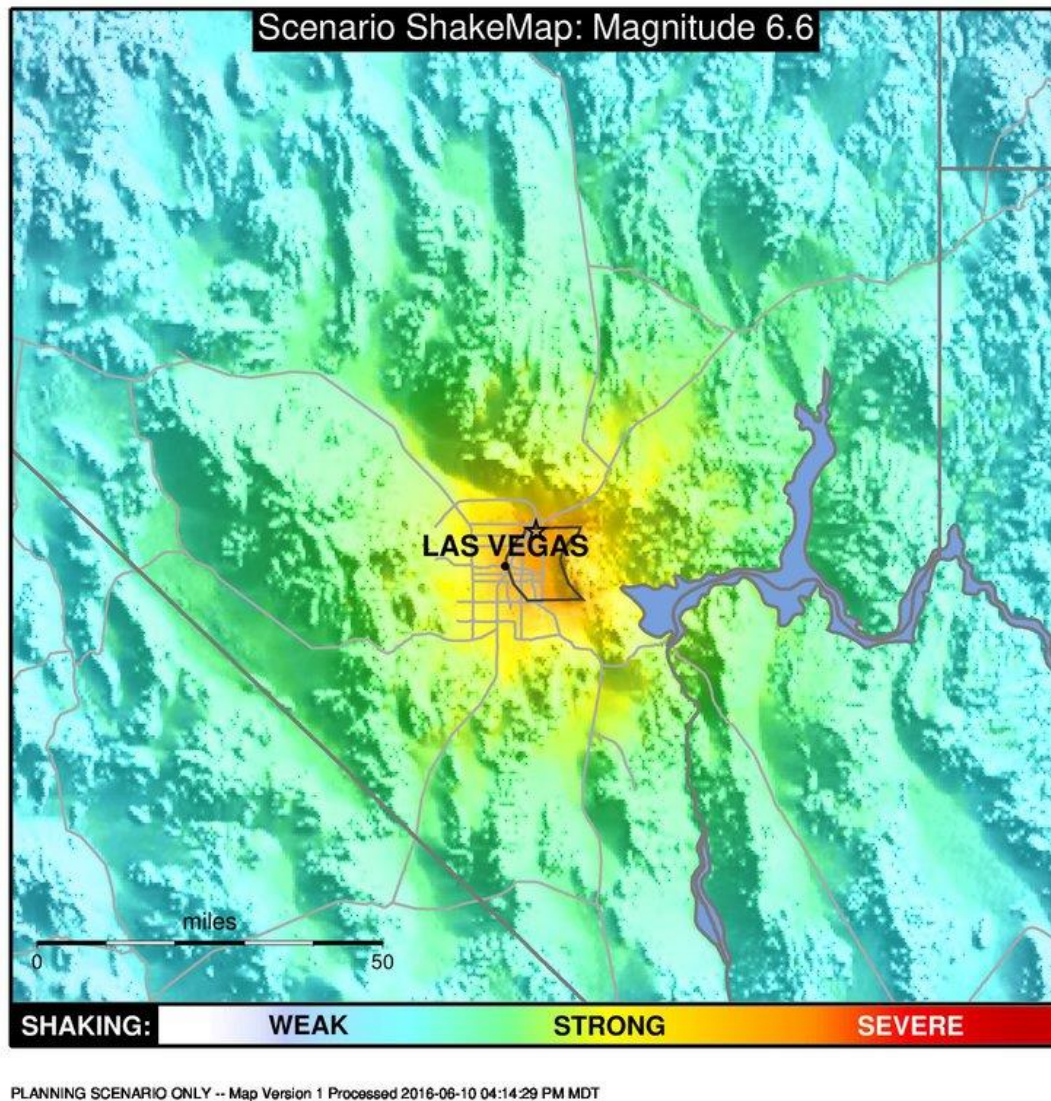
The Clark County Department of Public Works and NV Energy receive dozens of calls reporting downed power lines, cracked or blocked roadways, and power outages. Based on call volume, NV Energy estimates that up to 60% of Las Vegas Valley residents are without power; the highest concentration of reports coming from the northeastern quadrant of North Las Vegas. The CNLV Water Reclamation Facility sustains structural damage and experiences five water main breaks near the center of town, and there are reports of severed water and sewer system pipes throughout Clark County and in parts of Nye and Lincoln Counties continue to be reported.

Law enforcement and fire crews experience power outages at three police stations and two fire departments. The 9-1-1 Call Center is inundated with calls from residents reporting damage, injuries and even fatalities. Several residents report serious injuries, mostly from car accidents and crush or puncture wounds from falling debris.

Many homes in the Las Vegas Valley area suffer moderate to major damage. The prolonged, strong shaking significantly damages both the downtown residential (high-rise/apartment complexes) and business district as well as several large suburban neighborhoods outside of the downtown area. The building damage causes hundreds of injuries and leaves thousands of people without homes. Home ownership rates are low in the hardest hit area, with a higher than average population of isolated, elderly, and non-English speaking residents.

By 0910, first responders arrive and begin assessing the damage. At 0928, a magnitude 4.5 aftershock occurs 2 miles north of North Las Vegas causing additional transportation infrastructure damage and panic among residents.





## Key Issues

- Severe damage caused by earthquake;
- Impassable streets impede response and recovery efforts
- Extensive damage to public and private property
- Impacts to communication systems and a deluge of phone calls from the public;
- Stressed resources and potential reduced capabilities.

## Questions

Based on the information provided, participate in the discussion concerning the issues raised in Module 1. Identify any critical issues, decisions, requirements, or questions that should be addressed at this time.



The following questions are provided as suggested subjects that you may wish to address as the discussion progresses. These questions are not meant to constitute a definitive list of concerns to be addressed, nor is there a requirement to address every question.

### **Private Companies**

1. Does your organization have an emergency preparedness plan to address earthquakes? Discuss the plan and components. Identify incident roles and responsibilities.
2. What are your site's concerns and priorities?
3. What should the plant personnel be doing in the event of an emergency?
4. Has your staff been trained on Drop, Cover, Hold procedures?
5. What capabilities do you have to treat injured people?
6. Does the Emergency Response Plan provide information regarding evacuation, shut down procedures, assembly point, and personnel accountability?
7. How would the night/weekend shift response differ from day shift?

### **Response Agencies**

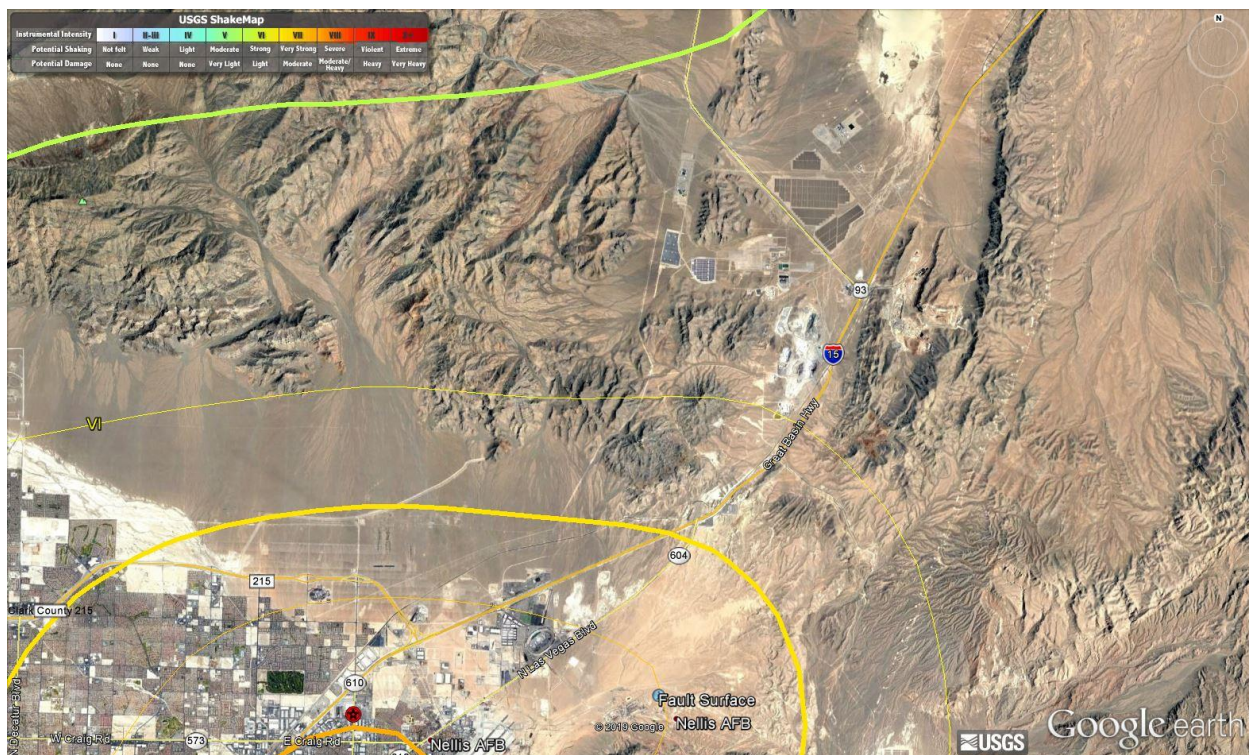
1. What are your response priorities and incident objectives at this point?
2. Do you have the staff and resources available to respond 24 hours per day for the next 120 hours? If not, where will you look to in obtaining these resources?
3. What agencies, organizations, and other community partners will you engage in the planning process immediately following the earthquake? How are you communicating with them?
4. Given the immediate shortages of resources and personnel, how will the use of resources be prioritized and managed to maximize response effectiveness? How will these decisions be made?
5. What is your public information strategy at this point? What methods or means are you using to provide credible and accurate information, and what are you doing to ensure vulnerable populations are reached? Do you have plans in place to use and monitor social media networks?

## MODULE 2: RESPONSE - APEX

January 29<sup>th</sup>, 2020: 10:00AM

Damage to the Apex area is starting to be revealed as the shaking stops. Vehicles have collided along Interstate 15 and Las Vegas Blvd making the roads inaccessible. Buildings at various companies have been damaged and cell phone communications do not work. There are reports of injuries to varying degrees throughout the Apex complex. Transmission lines coming from NV Energy are down causing loss of power to the region.

Local police, fire department, hospital, and emergency services are operating at full capacity with volunteers mobilized, but are overwhelmed and have significant difficulty in providing services. Limited do-not-drink and boil water alerts have been disseminated to the majority of hospitals, fire suppression, and some communities. Broken drinking water lines are cross-contaminated from damaged wastewater lines. There are rolling blackouts in the immediate area; partial restoration is not expected for the next few weeks. Many roads are either severely damaged or covered with debris, making movement difficult and unsafe, and frustrating for response elements. Radio, telephone, cell phone, and internet connectivity is severely limited or busy and radio systems for city departments are sustaining limited functionality



## **Key Issues**

- Reported injuries throughout Apex;
- Loss of power to the area;
- No communication available due to no cell phone towers.

## **Questions**

Based on the information provided, participate in the discussion concerning the issues raised in Module 2. Identify any critical issues, decisions, requirements, or questions that should be addressed at this time.

The following questions are provided as suggested subjects that you may wish to address as the discussion progresses. These questions are not meant to constitute a definitive list of concerns to be addressed, nor is there a requirement to address every question.

## **Private Companies**

1. What are some of the likely emergencies that would as a result of an earthquake?  
Hazardous materials containment?
2. How would different companies communicate with each other?
3. What resources and equipment does each company have to address the response efforts?
  - a. Clearing of transportation routes?
4. How will each company account for all personnel? Individual response members?
5. What training does each response team have that can help the situation?
6. How would the companies communicate with the fire department and establish who needs help the most?
7. Where will command and staging area(s) be established?
8. How will the companies manage non-essential personnel (managers, other operators, etc.)?
9. How would weather affect responses and injuries?

## **Response Agencies**

1. What resources would be dispatched to this incident? What information would be important to know to ensure the necessary resources are dispatched?
2. What information would be important to know in route to the scene? Are there radio channels or other means of communication we can use to communicate with incoming units?
3. From initial notification, how long will it take to arrive on-scene?
4. What are your major concerns/initial actions arriving on-scene?

5. Who would be the initial Incident Commander and how would they be identified? How would the command post location be shared with other participants in the Unified Command? Who would be a part of the Unified Command?
6. What do you expect the company response teams to accomplish before you arrive on-scene?
7. What resources would you ask of a company for assistance outside of facility?

## MODULE 3: REVIEW

**January 28<sup>th</sup>, 2020**

Facilitator will solicit input from each participating member

### **Strengths**

- Each participant will identify at least one “strength” witnessed during the exercise.

### **Areas for Improvement**

- Each participant will identify at least one “area for improvement”.

## APPENDIX A: EXERCISE SCHEDULE

| Time                            | Activity   |
|---------------------------------|--|
| January 28 <sup>th</sup> , 2020 |  |
| 0830                            | Registration                                     |
| 0900                            | Welcome and Opening Remarks and Introductions    |
| 0915                            | Exercise Guidelines and Overview                 |
| 0930                            | Module 1: Initial Response – Scenario Background |
| 1015                            | Break  |
| 1030                            | Module 2: Response – Apex                        |
| 1115                            | Break  |
| 1130                            | Review   |
| 1150                            | Closing Comments                                 |



## APPENDIX B: EXERCISE PARTICIPANTS

| Participating Organizations          |
|--------------------------------------|
| <b>Private Company</b>               |
| Ethos Energy                         |
| Georgia Pacific                      |
| Holly Energy                         |
| Kern River Gas                       |
| Lhoist North America – Apex          |
| Love’s Gas Station                   |
| NV Energy                            |
| Republic Services                    |
| Spec Aggregates                      |
| <b>Response Agencies</b>             |
| Clark County Fire Department         |
| Las Vegas Fire & Rescue              |
| Mercy Air                            |
| National Weather Service             |
| Nevada Highway Patrol                |
| North Las Vegas Emergency Management |
| North Las Vegas Fire Department      |
| Union Pacific Railroad               |

## APPENDIX C: ACRONYMS

| Acronym       | Definition  |
|---------------|---|
| <b>AAR/IP</b> | After Action Report/Improvement Plan              |
| <b>DHS</b>    | U.S. Department of Homeland Security              |
| <b>EAP</b>    | Emergency Action Plan                             |
| <b>EMS</b>    | Emergency Medical Service                         |
| <b>EOC</b>    | Emergency Operations Center                       |
| <b>FEMA</b>   | Federal Emergency Management Agency               |
| <b>HazMat</b> | Hazardous Materials                               |
| <b>HSEEP</b>  | Homeland Security Exercise and Evaluation Program |
| <b>IP</b>     | DHS NPPD Office of Infrastructure Protection      |
| <b>MMS</b>    | Moment Magnitude Scale                            |
| <b>MOU</b>    | Memorandum of Understanding                       |
| <b>Mw</b>     | See MMS   |
| <b>N/A</b>    | Not Applicable                                    |

## APPENDIX D: PARTICIPANT FEEDBACK FORM

### Participant Feedback Form

Thank you for participating in this exercise. Your observations, comments, and input are greatly appreciated, and provide invaluable insight that will better prepare our community against threats and hazards. Any comments provided will be treated in a sensitive manner and all personal information will remain confidential. Please keep comments concise, specific, and constructive.

### General Information

Please enter your responses in the form field or check box after the appropriate selection.

Name: \_\_\_\_\_

Agency/Organization Affiliation: \_\_\_\_\_

Position Title: \_\_\_\_\_

Years of Experience in Present Position: \_\_\_\_\_

Exercise Role: ☐ Player ☐ Facilitator ☐ Observer ☐ Evaluator

Number of Exercises Previously Participated in: ☐ 0 ☐ 1-5 ☐ 5-10 ☐ 15+

### Exercise Design

Please rate, on a scale of 1 to 5, your overall assessment of the exercise relative to the statements provided, with 1 indicating strong disagreement and 5 indicating strong agreement.

| Assessment Factor   | Strongly Disagree |   |   | Strongly Agree |   |
|---|-------------------|---|---|----------------|---|
| Pre-exercise briefings were informative and provided the necessary information for my role in the exercise.                               | 1                 | 2 | 3 | 4              | 5 |
| The exercise scenario was plausible and realistic.  | 1                 | 2 | 3 | 4              | 5 |
| Exercise participants included the right people in terms of level of seniority or experience and mix of disciplines.                      | 1                 | 2 | 3 | 4              | 5 |
| Participants were actively involved in the exercise.  | 1                 | 2 | 3 | 4              | 5 |
| Exercise participation was appropriate for someone in my field with my level of experience/training.                                      | 1                 | 2 | 3 | 4              | 5 |
| The exercise increased my understanding about, and familiarity with, the capabilities and resources of other participating organizations. | 1                 | 2 | 3 | 4              | 5 |
| The exercise provided the opportunity to address significant decisions in support of critical mission areas.                              | 1                 | 2 | 3 | 4              | 5 |
| After this exercise, I am better prepared to deal with the capabilities and hazards addressed.  | 1                 | 2 | 3 | 4              | 5 |

1. What specific training opportunities helped you (or could have helped you) prepare for this exercise? Please provide specific course names if applicable.

| Training | Completed<br>Prior to<br>Exercise?<br>(Y/N) |
|----------|---|
|          |   |
|          |   |
|          |   |
|          |   |
|          |   |

2. Which exercise materials were most useful? Please identify any additional materials or resources that would be useful for future exercises.

3. Please provide any recommendations on how this exercise or future exercises could be improved or enhanced.

## APPENDIX E: RELEVANT PICTURES

U.S. Geological Survey Quaternary Faults

