

# Illinois Emergency Operations Plan

## Annex 30 - Earthquake

Illinois Emergency Management Agency

August 2021





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### **Annex 30 – Earthquake**

Primary Agency: Illinois Emergency Management Agency (IEMA)

Support Agencies: Other State Agencies, Boards and Commissions

Support  
Organizations: None

#### **I. Annex Organization**

- A. This annex includes key functional requirements necessary for response and recovery to an earthquake and serves as a supplement to the Illinois Emergency Operations Plan (IEOP).
- B. Appendices describe primary and support agency activities for the conduct of earthquake response and recovery, as well as outlying strategic and operational priorities appendices that contain State Emergency Operations Center (SEOC) procedural checklists for liaisons as appropriate. The appendices are:
  - 1. Appendix 1, Direction and Control
  - 2. Appendix 3, Communications
  - 3. Appendix 4, Transportation
  - 4. Appendix 7, Mass Care
  - 5. Appendix 8, Public, Healthcare, EMS and Behavioral Health Services
  - 6. Appendix 9, Resource Management
- C. Attachments and tabs provide clarification or additional information to support an appendix and provide specific graphic information.

#### **II. Introduction**

- A. Purpose
  - 1. Outline strategic and operational guidance for the initial response and short-term recovery to ensure command, coordination, communication and control of state resources for responding agencies and organizations following a catastrophic earthquake.
- B. Scope



1. This annex addresses state supported operations approved by the SEOC and is scalable and modular based on the scope and magnitude of the earthquake.
2. This annex addresses response efforts directed towards unique aspects of an earthquake, and it identifies and assigns specific areas of responsibility for performing response functions.
3. This annex applies to all state agencies, boards and commissions with a role or responsibility in response and short-term recovery.

C. Policy

1. Implementation of this annex will not supersede any Authority Having jurisdiction (AHJ) administrative protocols or policies concerning immediate response and recovery operations.
2. Procedures for utilization, control and use of state approved resources will incorporate operational priorities that include but are not limited to:
  - a) Protection of life;
  - b) Public health and safety;
  - c) Property protection;
  - d) Environmental protection;
  - e) Restoration of essential utilities;
  - f) Restoration of essential program functions, and
  - g) Coordination as appropriate.
3. The SEOC will establish and disseminate strategies, priorities, and Commanders Critical Information Requirements (CCIR) to stakeholders, key decision-makers and executive officials.
4. State agency personnel will be trained to the assigned mission and be made aware of the potential risks involved.
5. Agencies and organizations conducting response and initial recovery are responsible for training personnel in requirements and processes.
6. At the direction of the governor or designee, state agencies may be tasked with providing agency personnel in support of operations.



7. All agencies, departments, boards and commissions will provide resources (equipment, material and personnel) as directed by the SEOC.
8. Local governments will likely be overwhelmed from the onset of the earthquake and requests for state support will be immediate.
9. The state may deploy resources prior to a request from an AHJ or private sector organization to more timely implement life safety and life essential operations.

#### D. Situation Overview

1. An earthquake has occurred resulting in damage to critical infrastructure and public and private property.
  - a) For the purposes of catastrophic planning the following scenarios are considered:
    - A magnitude 7.7 or greater earthquake along the New Madrid Seismic Zone (NMSZ);
    - A magnitude 7.1 or greater earthquake along the Wabash Valley Seismic Zone (WVSZ);
    - Simultaneous or cascading earthquakes of 7.7 magnitude or greater occur along the NMSZ and 7.1 magnitude or greater along the WVSZ, and
    - Aftershocks will occur along the NMSZ and WVSZ of equal or greater magnitude affecting approximately 40 counties.

#### E. Geographic Overview

1. Southern Illinois is the most active seismic area of the state. Two seismic zones that have been identified in southern and southeastern Illinois include the NMSZ and the WVSZ.
2. The NMSZ stretches from southwest Illinois through Missouri, Kentucky and Tennessee, to northeast Arkansas. The northern tip of the northeast segment is in Alexander County in Illinois.
3. The WVSZ is in southeastern Illinois and southwestern Indiana. The fault line stretches across Wabash, Edwards and White counties in Illinois.
4. An earthquake or series of earthquakes of the magnitude predicted,



would directly impact 40 counties in southern Illinois.

F. Hazard Analysis Summary

1. The NMSZ has produced some of the most devastating seismic events in U.S. history. During the winter of 1811 and 1812, a series of three earthquakes with estimated magnitudes of approximately 8.0 struck northeast Arkansas and southeast Missouri.
2. The WVSZ has the potential to produce seismic events of equal magnitude to the NMSZ, and has shown recent activity, including a 5.0 magnitude event in 2002, and a 5.4 magnitude event in 2008.
3. According to the United States Geological Survey (USGS), and the Center for Earthquake Research, the following probabilities of an earthquake of the NMSZ over a 50-year period are provided:
  - a) The probability of a magnitude 7.7 to 8.0, like the 1811-1812 events, is estimated at 7 to 10 percent.
  - b) The probability of a magnitude 6.0 or larger is estimated at 25 to 40 percent.
4. An earthquake or series of earthquakes of the magnitude predicted, in either the NMSZ or WVSZ, would have considerable repercussions state-wide.

G. Assumptions

1. Local operational capability and capacity will be severely reduced or rendered inoperable.
2. The state will suffer direct and indirect impacts including, but not limited to economic loss, reductions in operation capability and capacity and widespread, variable damage.
3. Long-term impacts will require continued and sustained state support for the restoration of critical community functions, services, vital resources, facilities, programs and infrastructure in the affected areas.
4. State assistance will be required to restore and establish life essential services and lifeline infrastructure and establish population related disaster services statewide.
5. State response will be activated in advance of any requests for the conduct of operational doctrine, life-safety missions and staging.





6. Mutual Aid Agreements and compacts will be activated.
7. Critical infrastructure in key sectors will be severely disrupted for an extended time period in and beyond the immediate areas affected by an earthquake.
8. Secondary effects (e.g. fires, dam/levee breaches, hazardous materials spills) will create hazardous environments.
9. Aftershocks will cause additional damage to infrastructure and loss of life and injury and create additional life safety risks for first responders.
10. Large numbers of injuries and fatalities and the loss of local public health healthcare, EMS and behavioral health services will exhaust local capabilities.
11. Rapid needs assessment and disaster intelligence will be critical in determining impacted areas and priorities of effort.
12. Until transportation and communication issues are addressed, statewide responding departments, agencies and mutual aid organizations will have significant reductions in capability and capacity in the affected area.
13. Dissemination of public information will be hindered.
14. Private sector, volunteer and community-based organizations will work cooperatively with community partners.
15. Private sector, volunteer and community-based organizations will spontaneously respond without direct coordination with higher, lateral or subordinate levels of government.
16. Limited federal assistance will be available across the affected area.
17. Key stakeholders, partners, executive officials and the public will contact the SEOC, Business Emergency Operations Center (BEOC) or state agencies regarding impacts, resource requests and state support.

### III. Concept of Operations

#### A. General

1. Disaster intelligence and rapid needs assessments will be used to determine situational awareness, develop a common operating picture and identify actions necessary for life-sustaining operations.



2. Agencies will deploy and mobilize staff in accordance with individual agency procedures, or as directed by the SEOC.
  3. Mobile Support Teams (MSTs) and mutual aid resources activated by the state will be coordinated and managed through the SEOC.
  4. Incident needs identified by key stakeholders, partners, executive officials and the public, received by the SEOC, will be incorporated into a SEOC Common Operating Picture (COP), Senior Leadership Briefings (SLB) and situational reports.
  5. The state will provide support for critical infrastructure in coordination with and activation of the SEOC and BEOC.
  6. The SEOC private sector LNO will coordinate with the National Business Emergency Operations Center (BEOC) to support private sector information sharing and strategic awareness.
  7. The Statewide Terrorism and Intelligence Center – Public Safety Group (PS-STIC) will provide collection, analysis and information sharing capabilities.
  8. The U.S. Department of Homeland Security Protective Security Advisory (DHS-PSA) provides support to assist in critical infrastructure impact assessment and awareness.
  9. State support is based on resource availability, capability and prioritization of effort.
  10. Resource shortfalls identified during response and recovery will be met through the activation of mutual aid agreements, service contracts and compacts.
- B. Notification, Alert and Warning (NAW)
1. IEMA will respond to USGS earthquake notifications in accordance with IEMA's USGS Earthquake Notification SOP 09-001.
  2. SEOC NAW of SEOC liaisons will be handled in accordance with IEOP Appendix A-1, Notification, Alert and Warning.
  3. Primary and support agencies are responsible for internal and support partner notification.
  4. For the purposes of the Illinois Plan for Radiological Accidents (IPRA), in the event of a Nuclear Accident Reporting System (NARS) notification



regarding conditions at a Nuclear Power Station (NPS), and notifications from other regulated facilities, IEMA will notify the appropriate staffs in accordance with documented procedures.

5. Factors that may influence notifications and corresponding processes for NPS include, but are not limited to:
  - a) Magnitude of the earthquake;
  - b) Location or origin of the earthquake;
  - c) Impact on/to individual site or facility;
  - d) Specific response actions taken by individual NPS and other regulated facilities in accordance with their internal procedures, and
  - e) Requirements established or implemented through the Nuclear Regulatory Commission (NRC).

C. Activation

1. The SEOC will provide state support through the activation of identified LNOs in accordance with the SEOC Activation Level SOP.
2. SEOC Activation Level Standard Operating Procedure (SOP) will be used to determine staffing levels necessary for damage assessment coordination.
3. The Red Cross will activate based on requests for assistance from local and state emergency management agencies or from disaster survivors.

D. Communications

1. Communications will be conducted in accordance with SOPs and managed using established procedures, processes and policy outlined in Annex 3 Communications.
2. Communications will be conducted in a manner compliant with the National Incident Management System (NIMS) utilizing clear-text and frequencies coordinated with the SEOC.
3. Methods used to overcome communications deficiencies due to system failures and interruptions will be coordinated through the SEOC with the SEOC Communications Coordinator (COMC) or designee.



4. For the purposes of earthquake specific communications considerations will be conducted in a manner consistent with Annex 30, Earthquake, Appendix 3, Communications.
- E. Resource Management and Logistics
1. Resource management and logistics will be carried out in accordance with Annex 9, Resource Management and Logistics.
  2. For the purposes of earthquake specific resource management and logistics, considerations will be conducted in a manner consistent with Annex 30, Earthquake, Appendix 9, Resource Management and Logistics.
  3. Resource Management and Logistics includes mutual aid agreements and assistance agreements; the use of special federal and state teams and resource mobilization protocols.
- F. Reporting Requirements
1. Upon activation of the SEOC, all SEOC LNOs for agencies having a role in earthquake response will compile and disseminate situational reports.
  2. SEOC information, intelligence and situation reporting will be conducted in accordance with the SEOC Situation and Rapid Needs Assessment SOG, Annex 10, Damage Assessment and Annex 28, Disaster Intelligence.
- G. Implementation Requirements
1. Notification, activation, deployment, coordination, implementation and sustainment (NADCIS) of state resources in support of response and recovery operations management will be approved and coordinated through the SEOC.
  2. Implementation of state-supported operations is predicated on SEOC approval of a request from a local government, private sector organization or state agency.
  3. The governor or designee has the authority to call the ILNG into state active duty (SAD) status. Upon SAD activation, all ILNG forces and equipment are available assets to the SEOC and state response and recovery partners.
  4. The governor or designee has the authority to request assistance from participating states through the Emergency Management Assistance Compact (EMAC).



## H. Organization

### 1. Direction and Control

- a) The SEOC is the single point of coordination for state supported response and recovery operations.
- b) The SEOC will provide support for coordination and management of strategic and operational elements through activation of state agency personnel and Mobile Support Teams(MST).
  - i) The SEOC may activate individual forward elements including, but not limited to State Unified Area Command (SUAC), State Area Command (SAC), StateTask Forces (STF) and islands of response or strike teams.
  - ii) Upon activation of forward elements, the SEOC Manager may delegate authority for coordination and management to the appropriate level of command.
  - iii) Forward elements will coordinate and manage assigned resources in accordance with established policies and procedure.
- c) State agencies and external organizations retain operational control of their resources.
- d) The SEOC Manager or designees may establish one or more Lines of Effort (LOE) to support response and recovery.
- e) The SEOC Manager or designees may coordinate the use of county or local jurisdiction resources to support assigned missions when so authorized or requested to do so.
- f) The SEOC Manager, LNOs or designees will coordinate with local, state, federal governments, NGOs and private sector organizations in developing strategic plans and response and recovery priorities.
- g) For unity of command, coordination and management of the SEOC, the SEOC Manager will transfer command to the State Coordinating Officer (SCO) at the cessation of short-term recovery.

### 2. Coordinating Elements



- a) State-deployed MSTs may be assigned to support or coordinate local or state supported operations.
  - i) In support of local or state operations, MSTs may be assigned under the direct coordination and management of a designated state agency or response and recovery element.
- b) State forward elements may be deployed by the SEOC to coordinate use of actionable intelligence and determine resource requirements in support of operations.
- c) The SEOC will establish command structures in forward areas of operation to coordinate with private sector, volunteer and community-based organizations that have spontaneously responded to ensure safety, security, and accountability of responding personnel and prioritize resource allocations.
- d) Coordination between private sector organizations and state agencies will be maintained through the SEOC and BEOC.

3. Federal Coordination

- a) IEMA will coordinate the integration of federal assets into state operations.
- b) SEOC LNOs, state agencies, boards and commissions will coordinate with federal counterparts in accordance with enabling authority.

IV. Roles and Responsibilities

A. Illinois Emergency Management Agency (IEMA)

- 1. Coordinates collection, receipt, compilation and development of situational reports on damage impacts to services, facilities, sites and programs at the federal, state and local levels.
- 2. Collects, analyzes, de-conflicts and disseminates disaster intelligence and information.
- 3. Establishes and disseminates Essential Elements of Information (EEI), Commanders Critical Information Requirements (CCIR) and Priority Information Requirements (PIR) developed by the SEOC.
- 4. Coordinates efforts with local emergency management agencies, NGOs



and private sector organizations.

5. Prioritizes resource allocations and requests for support.
6. Develops and maintains maps, visual aids and displays in coordination with:
  - a) Primary and support agencies;
  - b) Boards and commissions;
  - c) Volunteer and community-based organizations;
  - d) Private sector organizations;
  - e) Federal and external state agencies;
  - f) Local governments, and
  - g) Executive and senior state leadership.
7. Coordinates activation of MSTs and LOE resources.
8. Coordinates with federal agencies and representatives.
9. Determines the need to request federal disaster assistance.
10. Coordinates collection, receipt, compilation and development of situational reports, maps, visual aids and displays.
11. Coordinates the provision for JITT and site-specific training for personnel assigned ad hoc responsibilities, missions and tasks.

**B. General Requirements for Other State Agencies, Boards and Commissions**

1. Staff the SEOC, SUAC and LNO positions in areas designated by the SEOC Manager.
2. Coordinate collection, receipt, compilation, development and dissemination of situational reports to agency leadership, facilities, sites and programs.
3. Coordinate collection, receipt, compilation, development and dissemination of agency-specific situational reports to the SEOC.
4. Identify agency roles and responsibilities in service delivery and coordination for implementing their applicable IEOP annexes and



appendices.

5. Identify internal and external stakeholders' capability and capacity necessary to carry out roles and responsibilities.
6. Identify agency EEI and disseminate to the SEOC.
7. Provide intelligence and information on CCIR/PIR to the SEOC.
8. Identify resource requirements, priorities and allocations to make appropriate requests to the SEOC Manager.
9. Coordinate JITT and site-specific training to agency personnel assigned missions and tasks.
10. Ensure NADCIS of agency personnel and equipment in support of state approved operations.
11. Develop Phased Action Level documentation to determine the need for augmentation, including the use of externally available resources.

#### V. Authorities and References

##### A. Authorities

1. 20 ILCS 3305, IEMA Act, as amended
2. Illinois Emergency Operations Plan, as amended

##### B. References

1. Robert T. Stafford Act, as amended
2. Mid-America Earthquake (MAE) Center, New Madrid Seismic Zone Catastrophic Earthquake Response Planning, as amended
3. MAE Center, New Madrid Seismic Zone Catastrophic Earthquake Response Planning, Volume 2, as amended
4. MAE Center, Comprehensive Seismic Loss Assessment for the State of Illinois, March 2007

#### VI. Attachments

- A. Appendices as identified
- B. Tab A – C4 Maps





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- C. Tab B – Earthquake Evacuation Time Estimates
- D. Tab C – Independent Task Sequencing