

M_w=8 Multi-State Earthquake Scenario

Mitigation, Preparedness and Mock Drill Initiatives

Information on Basic Data Collection

1. Background

NDMA has initiated a *Multi-State Earthquake Disaster Scenario Project* projecting the occurrence of a *hypothetical* earthquake of *Magnitude 8* with its epicenter located at *Sunder Nagar* (Mandi District), Himachal Pradesh. As part of this hypothetical scenario project, it is intended to assess the possible damage to property and loss of lives after the said large magnitude earthquake. This hypothetical event is projected to cause intensity of earthquake shaking ranging from VII-IX in 4 adjoining States/UT of **Himachal Pradesh**, Punjab, Haryana and Chandigarh UT.

This document lists the basic information to be collected by the State of Himachal Pradesh to be able to undertake the said earthquake safety assessment of the *Critical Infrastructure and Critical Buildings* in Himachal Pradesh State, which fall in Seismic Zone IV and V. On processing this data, it may be possible to understand *direct* and *indirect consequences* of the scenario earthquake. Such an assessment of critical infrastructure is important to

- (1) Assess *earthquake resistance* of these structures,
- (2) Evaluate their *functionality* in the post-disaster scenario,
- (3) Self-assessment of technical capacity of each department/agency of the state, which is the custodian of these *critical and lifeline infrastructure*.

2. Critical Facilities

When a natural or man-made event affects a critical facility, the impacts are dramatically multiplied when compared to the effects that a similar event may have on non-critical systems. The effects of an earthquake on the Critical Infrastructure is dependent on the characteristics of the structures (location, design, materials used, and maintenance) and characteristics of the occupants (density, freedom of movement, and health during the event).

Critical facilities are vital to the community in the aftermath of an earthquake, the destruction of which will have devastating effect on Public Health, Safety or Security of the Community. This will affect the post-earthquake response capabilities of the community, *e.g.*, Hospitals and Emergency Operation Centers. Because of the large number of people occupying these buildings, the destruction of these structures can have the potential to cause bodily harm to a large number of persons, *e.g.*, Schools and Crowded Shopping Centers.

Critical infrastructure and critical buildings to be studied under this project can be identified if it meets one or more of the following criteria:

- (1) The *buildings and structures are expected to be fully functional in the post-earthquake scenario*, to provide significant post-earthquake utility, such as relief shelter. Such infrastructure and buildings include facilities and services like: major school buildings; generators; transmission lines; petrochemical installations,

telecommunication control room; railway control room; building controlling public safety and security, such as Civil Defense Installation; communication centers; Emergency Operation Center; fire stations; hospitals and other medical facilities; mass emergency shelters, and waste water management. Also, this list should include the facility or building hosting *high density occupancy structures*, such as Auditoriums, Theaters, Stadiums, Mosques/Temples, Educational facilities, Hotels and Office Buildings, which can be turned in to shelters post-earthquake.

- (2) The *infrastructure that provides utility services* to buildings and structures that are expected to be *fully functional* in the aftermath of earthquakes. Such utility services include: electricity supply; fuel supply, sewage services and water supply.
- (3) The *critical building that has high demonstrative value*, such as a government school. The collapse of such buildings in an earthquake can weaken the confidence in public in the government's ability to manage the situation.

3. Information Required

A maximum of 10 facilities (including both critical infrastructure and critical buildings) are to be identified in *each district*. The following template may be used for collecting the general information on the critical infrastructure and buildings:

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Earthquake Mitigation, Preparedness and Mock Drill Initiative of NDMA

Basic Data to be Collected by State of HP

Critical and Lifeline Buildings and Facilities

In each district of HP, a maximum of 10 *Critical and Lifeline Buildings and Facilities* are to be identified as per the template given below:

No	Building /Facility Type	Name & Address	Day time occupancy & Night time occupancy	Location		Person In-charge with Phone number and Fax
				Latitude	Longitude	
1	Hospital					
2						
3						
4						
5						
6						
7						
8						
9						
10						