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**GEOHAZARD REPORT REQUIREMENTS: 2007 and 2010**

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<b>Disciplines:</b>	Structural	<b>History:</b>	Revised 10-07-16	Revised 06-25-10	Revised 02-03-04
			Revised 12-19-13	Revised 06-17-09	Issued 09-01-99
			Revised 11-12-13	Revised 11-01-07	
			Revised 10-11-11	Revised 07-21-05	

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**PURPOSE:** This Interpretation of Regulations (IR) provides clarification of specific Code requirements relating to the requirements for the submission of a geologic hazard report to the California Geological Survey (CGS) for acceptance and, subsequently, to the Division of the State Architect (DSA) for projects within the jurisdiction of DSA.

**SCOPE:** This IR is applicable for projects submitted to DSA for review under the 2007 and 2010 editions of the California Building Code (CBC).

**BACKGROUND:** A geohazard is any geologic condition that is a potential danger to life or property. Geohazards include, but are not limited to, ground shaking, surface rupture, liquefaction, tsunami and landslides.

The California Administrative Code (CAC) Section 4-317(e) includes requirements for the performance of geotechnical (soils) studies and geohazard studies. Note that “Geotechnical Reports” (or soils investigation reports) often include soils studies only and might not include complete geohazard studies.

In addition, 2010 CBC Section 1803A and 2007 CBC Section 1802A describe requirements for engineering geologic reports, supplemental ground-response reports, and geotechnical reports. Any of these reports may contain elements of the geohazard studies, and shall all be submitted to CGS for review.

**1. GENERAL PROCEDURE:** When a geohazard report is required for a project (see criteria in Section 2 below), the report must be submitted to CGS before the project is submitted to DSA. Final DSA approval will not occur until DSA receives the final acceptance letter from CGS. It is the responsibility of the applicant to provide the CGS acceptance letter to DSA and reference the DSA application number for the project.

**1.1 Submittal to CGS:** School districts are responsible for the submittal of the geohazard report to CGS and for the cost of review. Reports should be submitted to CGS approximately two months prior to submittal of the project to DSA; contact CGS for its current review timelines. Instructions are available on CGS web site: [www.conservation.ca.gov/cgs/rghm/reviews/Pages/faq.aspx](http://www.conservation.ca.gov/cgs/rghm/reviews/Pages/faq.aspx)

**1.2 Submittal to DSA:** A copy of the geohazard report and the application to CGS indicating the CGS project number shall be submitted to DSA along with the initial DSA project application.

**2. PROJECTS REQUIRING GEOHAZARD REPORTS:** A geohazard report shall be submitted to CGS for projects as described below.

**2.1 Site Specific Ground Motion Analysis:** A geohazard report is required for any project for which site specific ground motion analysis is used to develop seismic parameters used for design.

**2.2 New Sites:** A geohazard report is required for all construction on a new site.

**2.3 New Structures on Existing Sites:** A geohazard report is required for all new buildings or structures, except as delineated in Section 3.

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**2.4 Additions:** A geohazard report is required for all additions except, as delineated in Section 3.

**Note:** When an addition involves alterations to an existing building the geohazard reporting requirements of Section 2.4 also apply.

**2.5 Alterations to Existing Buildings:** A geohazard report is required for alterations which:

**2.5.1** Involve rehabilitation of a structure per CAC Section 4-307 or 4-309(c).

**2.5.2** Voluntarily modify the lateral force resisting system (per CAC Section 4-309(d)) and include new foundations supporting seismic force resisting systems which utilize any one of the following:

- Deep foundations.
- Spread foundations designed for bearing pressures that exceed the maximum recommended foundation soil bearing pressures in an existing geotechnical report for that structure or, when a report is not available, the values set forth in 2007 CBC Table 1804A.2 and CBC Table 1806A.2.
- Foundations that are not deformationally compatible with the existing foundations (e.g. adding spread footings to a structure supported on deep foundations).

**2.5.3** Involve repair of structural earthquake damage, per CAC Section 4-309(e).

**3. PROJECTS NOT REQUIRING GEOHAZARD REPORTS:** For projects on existing sites, with scope limited to one or more of those described in Sections 3.1 through 3.2.3 below, and not designed using site specific ground motion analysis, per Section 2.1 above, a geohazard report is not required.

**3.1 For Any Existing Site, Regardless of Location:**

**3.1.1** Sitework, non-building structures, or structures not intended for human occupancy, unless such construction is essential to the operation of the facility.

- Non-building structures may include light poles, flag poles, signs, scoreboards, ball walls, fences, retaining walls, etc.
- A “structure for human occupancy” is any structure used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year - in accordance with Title 14, Division 2, Chapter 8, Subchapter 1, Article 3, Section 3601(e).

**Note:** Non-building structures “essential to the use of the facility” **do require** the submission of geohazard reports. Such structures include the following:

- Elevated water tanks necessary for fire protection.
- Earth retaining structures when failure of such structures could endanger occupied structures.
- Communications towers serving Occupancy Category IV (essential services) buildings.
- Other similar structures.

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**3.1.2** Structures not defined as a “School Building” per CAC Section 4-314 and exempt from DSA structural review as indicated in [IR A-22](#) Appendix A.

**3.1.3** Temporary relocatable buildings as defined in CAC Section 4-302(b).

**3.2 Existing Sites Outside of a Mapped Geologic Hazard Zone:** In addition to the project scopes described in Section 3.1.1 through 3.1.3, above, projects on existing sites which are outside of a “mapped geologic hazard zone” (as defined in Section 4 below) are exempt from the requirement to provide a geohazard report if they involve only:

**3.2.1** One or more single-story, wood-frame or light-steel frame structures of Type II or Type V construction, seismically separated into areas of 4,000 square feet or less in covered area. Such structures may include, but are not limited to, most relocatable buildings and plywood shear wall buildings.

**3.2.2** Isolated elevator towers serving no more than two levels.

**3.2.3** Open metal site structures (e.g. structural steel, aluminum, etc.) seismically separated into areas of 4,000 square feet or less in covered area. Such structures may include but are not limited to shade structures, bleachers, canopies, and carports.

**4. DEFINITION OF A “MAPPED GEOLOGIC HAZARD ZONE”:** A mapped geologic hazard zone includes the following:

- A “Seismic Hazard Zone” as identified by CGS.
- An “Alquist-Priolo Earthquake Fault Zone” as identified by CGS.
- A fault, landslide, liquefaction, tsunami, or other geologic hazard zone defined in the Safety Element of a Local General Plan.

**5. RE-USE OF EXISTING GEOHAZARD REPORTS:** An existing geohazard report may be used for a new project if the existing report is based on adequate studies (refer to CGS Note 48 for guidance), a reevaluation is made, and the report is found to be currently appropriate. The existing report for the site and the reevaluation must be submitted to CGS for approval for each project.

A reevaluation is not required if all three of the following conditions are met:

1. The original geohazard report included the scope of construction proposed for the project.
2. The applicable building code has not changed since the original report was issued.
3. The project is submitted to DSA within the time limit described in the original report.

**Note:** Subsequent significant geologic events may invalidate an existing Geohazard Report.

**6. SCOPE OF GEOHAZARD STUDIES:** For guidance in conducting a study and reporting evaluations and recommendations, refer to the following:

- Special Publication 117A, “Guidelines for Evaluating and Mitigating Seismic Hazards in California (2008).”  
[www.conservation.ca.gov/cgs/shzp/webdocs/Documents/sp117.pdf](http://www.conservation.ca.gov/cgs/shzp/webdocs/Documents/sp117.pdf)
- Special Publication 42 (Interim Revision 2007), “Fault-Rupture Hazard Zones in California.”  
[ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf](http://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf)

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CGS Note 48 will be used as a guide for review by CGS:

[www.conservation.ca.gov/cgs/information/publications/cgs\\_notes/note\\_48/Documents/note\\_48.pdf](http://www.conservation.ca.gov/cgs/information/publications/cgs_notes/note_48/Documents/note_48.pdf)

**7. CONTENT OF GEOHAZARD REPORTS:** Requirements regarding contents of geohazard reports are addressed by CGS:

[www.conservation.ca.gov/cgs/rghm/reviews/Pages/Default.aspx](http://www.conservation.ca.gov/cgs/rghm/reviews/Pages/Default.aspx)

**8. SITE-SPECIFIC GROUND MOTION PROCEDURES:** Site-specific ground motion procedures shall be used when required in 2010 CBC Section 1615A.1.2A (1615.10.2\*) or 2007 CBC Section 1614A.1.2. Among other triggers, this CBC section requires a ground motion hazard analysis when a building site is located in an area identified in CAC Section 4-317(e). For the purposes of requiring a ground motion hazard analysis on a particular site in accordance with this section of CAC, only Alquist-Priolo Earthquake Fault Zones or fault zones designated in the Safety Element of a Local General Plan need be considered. Other seismic hazards (liquefaction, landslide, tsunami, etc.) outside of a fault zone need not trigger the ground motion hazard analysis.

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### REFERENCES:

California Code of Regulations (CCR) Title 24  
2010 and 2007 CAC Section 4-317(e)  
2010 CBC Sections 1613A, 1613\*, and 1803A  
2007 CBC Sections 1613A, 1613\*, and 1802A

California Education Code, Section 17212.5

*\*Indicates alternative California Building Code (CBC) sections that community colleges may use per 2010 CBC Section 1.9.2.2*

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This Interpretation of Regulations (IR) is intended for use by the Division of the State Architect (DSA) staff, and as a resource for design professionals, to promote more uniform statewide criteria for plan review and construction inspection of projects within the jurisdiction of DSA which includes State of California public elementary and secondary schools (grades K-12), community colleges and state-owned or state-leased essential services buildings. This IR indicates an acceptable method for achieving compliance with applicable codes and regulations, although other methods proposed by design professionals may be considered by DSA.

This IR is reviewed on a regular basis and is subject to revision at any time. Please check the DSA Web Site for currently effective IRs. Only IRs listed in the document at [www.dgs.ca.gov/dsa/Resources/IRManual.aspx](http://www.dgs.ca.gov/dsa/Resources/IRManual.aspx) at the time of plan submittal to DSA are considered applicable.