



**BUILDING CODE MANUAL
COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUILDING AND SAFETY DIVISION
Based on the 2011 LACBC**

**#34
1803.5.11
Article 1
10-22-12
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POLICY ON SOILS REPORTS IN DESIGNATED LIQUEFACTION ZONES

ISSUE:

Section 1803.5.11 of the Building Code requires “a soils investigation to assess the potential consequences of any liquefaction and soil strength loss”, among other items.

Liquefaction occurs when loosely compacted granular soils that are saturated with water are subjected to seismic forces, effectively increasing the pore pressure and decreasing lateral and vertical bearing capacity. Note however, that local historic ground water table elevations have decreased between 10 and 50 feet since State of California liquefaction hazard maps were created and that liquefaction is not considered a threat when the water table is deeper than 50 feet from the ground surface.

Furthermore, it is the opinion of the Building and Safety Division that the California Geological Survey, the entity responsible for creating liquefaction seismic hazard maps, is an expert on statewide geotechnical issues, and; because the California Public Resources Code specifically addresses the geotechnical condition of liquefaction and in addition, specifically exempts single family dwellings from geotechnical investigations in these hazard areas (up to two stories when not part of a development of four or more dwellings).

Also, professional civil, structural, and geotechnical engineers as well as engineering geologists agree that the major concern for liquefaction and its affect on one- and two- family residential structures is differential settlement. Even in the unlikely event that liquefaction occurs, the threat to life safety is considered very small. While it is not purported that damage will be insignificant, it is believed that danger to loss of life is minimal. As such, the County of Los Angeles has opted to rely on a County developed map that delineates areas that are potentially subject to liquefaction during future seismic events. This map, which identifies Liquefiable (L) or Potentially Liquefiable (PL) areas, will only be applicable to Non-Projects as defined in Public Resources Code Sections 2621.6 and 2693. (See attached.) Where a Non-Project is located within a (L) or (PL) area, Geotechnical and Materials Engineering Division (GMED) review is required unless a soils investigation indicates that the total seismically-induced settlement will be less than or equal to 3 ½ inches.

POLICY:

The following construction is not subject to the requirement for a soils investigation within a designated liquefaction zone. Additionally, the exempt construction does not need to be referred to GMED for liquefaction review:

1. Additions to existing one- and two-family structures where the area of the addition is not greater than 50% of the existing gross area of the structure, up to a maximum of 1000 square feet. (Note that a basement is not considered a story.)

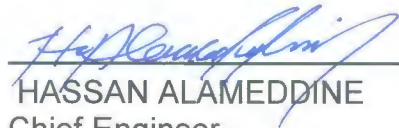
2. Structures of Group U occupancy accessory to Group R-3 occupancies such as private garages, carports, fences, and swimming pools. (For retaining walls, see BCM 1807.2 Article 1)
3. Agricultural buildings (not for public use), barns, greenhouses (not for public use), livestock shelters, sheds, and stables not exceeding 1000 square feet in area and one-story in height.
4. Commercial tenant improvements. (Note that any commercial addition shall require an soil investigation report.)
5. Grain silos, tanks, communication towers, and signs in which such structures are not intended for human occupancy.
6. Buildings and structures designed in accordance with the Residential Code and RCM R404.4 Article 1.

Supersedes BCM 1802.2.7 Article 1 dated 07-14-08.

WRITTEN BY: JONATHAN LAM
Civil Engineer

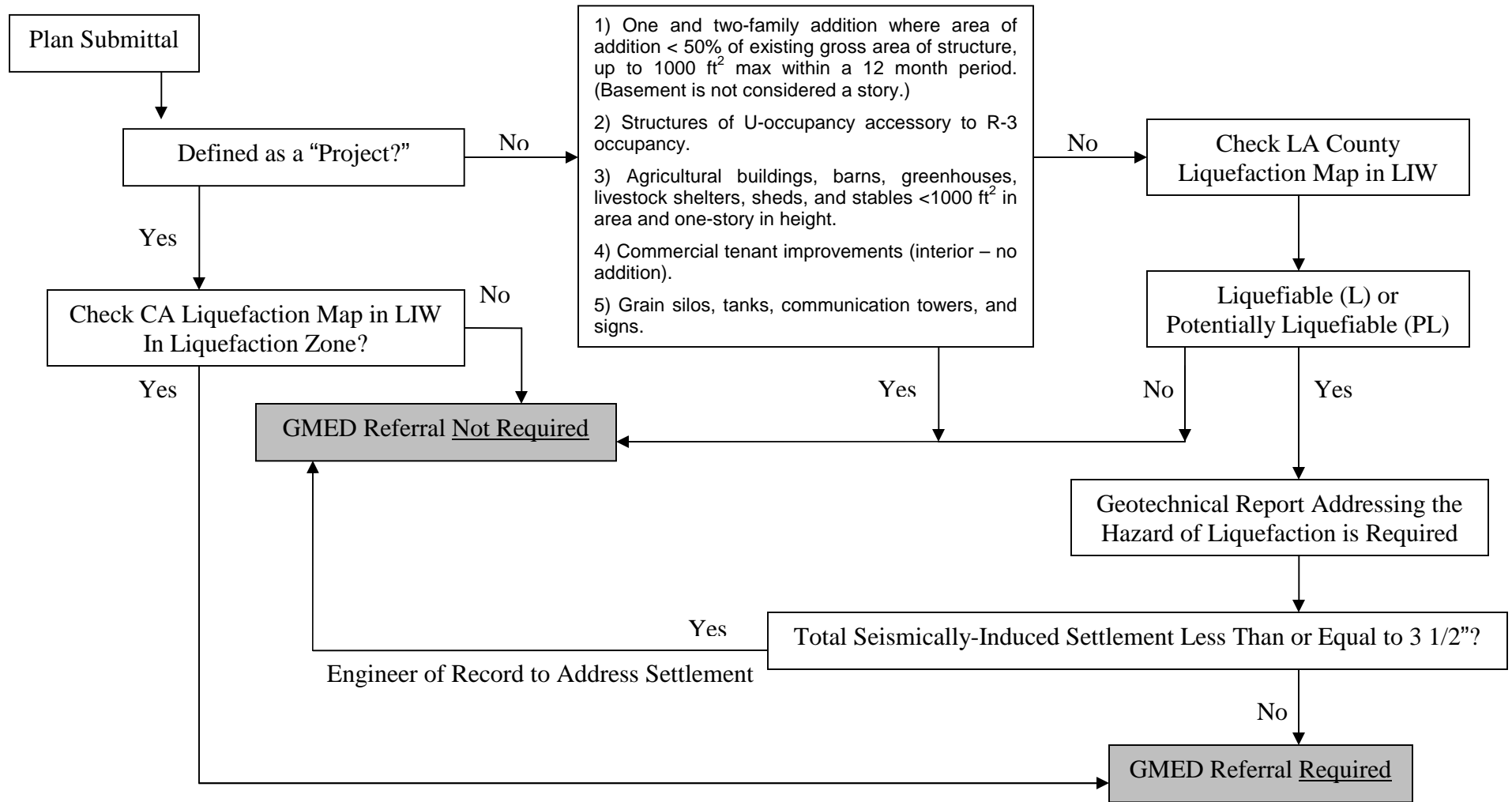
REVIEWED BY: JUAN MADRIGAL
Senior Civil Engineer

APPROVED BY:



HASSAN ALAMEDDINE
Chief Engineer

**Building and Safety Division Referral Policy to GMED
for Seismic Hazard Zone (SHZ)**



NOTE: What is NOT a Project?

- 1) A single-family or duplex wood-frame or steel-frame dwelling not exceeding two stories when that dwelling is not part of a development of four or more dwellings.
- 2) Alternations or additions to any structure within a SHZ that do not exceed either 50 percent of the value of the structure or 50 percent of the existing floor area of the structure.
- 3) The most restrictive requirement of either item 1 or 2 shall govern.
- 4) See GS145.0 for additional information.