

RECOMMENDED VOLUNTARY PACKAGE

SECTION XXX

GROUP R-1, R-2, R-2.1, AND R-4 OCCUPANCIES PROTECTED BY THE FACILITIES OF THE CENTRAL VALLEY FLOOD PROTECTION PLAN

Note: The effective date of these standards shall be March 1, 2012 or ninety (90) days after the corresponding maps are completed and readily available to the general public, whichever is the later date.

XXX.1 Scope.

The provisions of this section shall apply to the construction, addition, alteration, change in use or repair, including substantial improvement and restoration of substantial damage as defined in Section 1612, of Group R-1, R-2, R-2.1 and R-4 occupancies in areas protected by the facilities of the Central Valley Flood Protection Plan where flood levels are anticipated to exceed three feet for the 200-year flood event. Except as specifically required by this section, buildings and structures shall meet applicable provisions of this code. Buildings and structures that are also located in flood hazard areas defined in Section 1612.3 shall comply with the more restrictive provisions of Section 1612 and this section.

XXX.2 Construction documents. If the land on which the proposed work is to be constructed is located in an area protected by the facilities of the Central Valley Flood Protection Plan, the construction documents shall include the WSEL200 and the elevation(s) of the floor(s), and, as applicable, the elevation(s) and slopes of roofs, of the building or structure.

XXX.3 Definitions.

The following words and terms shall, for the purposes of this section, have the meanings shown.

AREAS PROTECTED BY THE FACILITIES OF THE CENTRAL VALLEY FLOOD PROTECTION PLAN WHERE FLOOD LEVELS ARE ANTICIPATED TO EXCEED THREE FEET FOR THE 200-YEAR FLOOD EVENT. Geographical areas identified by the state as “Areas Protected by the Facilities of the Central Valley Flood Protection Plan where Flood Levels are Anticipated to Exceed Three Feet for the 200-Year Flood Event” in accordance with the Health and Safety Code Section 50465. Published data from the California Department of Water Resources can be obtained online at the following website:

<http://www.water.ca.gov/BuildingCodes>.

DWR Draft California Building Standards Code Update, Groups R-1, R-2, R-2.1 and R-4 Occupancies.

Preliminary. Subject to Revision. 10/2010 Review comments to be emailed to BldgCodeTeam@water.ca.gov

Note. The facilities of the Central Valley Flood Protection Plan are identified in the following counties: Butte, Colusa, Fresno, Glenn, Lake, Madera, Merced, Modoc, Plumas, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, Tehama, Yolo, and Yuba. Determination of additional facilities is ongoing.

CENTRAL VALLEY. Any lands in the bed or along or near the banks of the Sacramento River and the San Joaquin River, and any of their tributaries or connected therewith, or upon any land adjacent thereto, or within any of the overflow basins thereof, or upon any land susceptible to overflow there from. The following counties and the incorporated municipalities within these counties, in whole or in part, are in the Central Valley: Alpine, Amador, Butte, Calaveras, Colusa, El Dorado, Fresno, Glenn, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Joaquin, Shasta, Sierra, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tuolumne, Yolo, and Yuba. A map that delineates the Central Valley can be obtained online at the following website: www.water.ca.gov/BuildingCodes.

WSEL200. The water surface elevation (WSEL) of the 200-year flood event that is identified by the state when it identifies areas that receive protection from the facilities of the Central Valley Flood Protection Plan.

EVACUATION LOCATION. A location no less than one (1) foot above the WSEL200 where occupants are expected to congregate pending evacuation and from which occupants may be rescued during conditions of flooding. Bathrooms, storage rooms, closets, and similar spaces shall not be used as evacuation locations.

FACILITIES OF THE CENTRAL VALLEY FLOOD PROTECTION PLAN. The facilities referenced herein include the facilities of State Plan of Flood Control and other flood management facilities in the Central Valley evaluated under the Central Valley Flood Protection Plan, which will be completed in 2012 and updated every 5 years thereafter. The facilities of State Plan of Flood Control include the state and federal flood control works (levees, weirs, channels, and other features) of the Sacramento River Flood Control Project described in Water Code Section 8350, and flood control projects in the Sacramento River and San Joaquin River watersheds authorized pursuant to Article 2 (commencing with Water Code section 12648) of Chapter 2 of Part 6 of Division 6 for which the Central Valley Flood Protection Board or the Department of Water Resources has provided the assurances of nonfederal cooperation to the United States, and those facilities identified in Water Code Section 8361.

ROUTE TO THE EVACUATION LOCATION. The path through and along which occupants move from the habitable areas of a building or structure that are below the WSEL200 to the evacuation location.

XXX.4 Structural stability. Buildings and structures or portions of buildings and structures containing Group R-1, R-2, R-2.1, and R-4 occupancies shall be designed, constructed, connected and anchored to resist flotation, collapse or permanent lateral movement resulting from the hydrostatic loads anticipated during conditions of flooding up to and including the WSEL200.

XXX.4.1 Determination of loads. Hydrostatic loads, based on the depth of water determined by the WSEL200 shall be determined in accordance with Chapter 5 of ASCE 7. Reduction of hydrostatic loads may be accomplished by allowing for the automatic entry and exit of floodwaters to minimize unbalanced loads. Such means shall be designed by a registered design professional and include, but are not limited to, openings, valves, and panels designed to yield under load.

XXX.5 General Requirements.

XXX.5.1 Evacuation location. An evacuation location and an accessible route to the evacuation location shall be provided in accordance with this section and Section XXX.6, Section XXX.7, Section XXX.8 or Section XXX.9, or combinations thereof, unless an alternate means of protection is approved. Evacuation locations shall comply with provisions of Chapters 11A and 11B as applicable. The occupancy classification of the evacuation location shall be the same as portions of the building being evacuated.

XXX.5.1.1 Minimum size requirements. Evacuation locations shall provide a minimum gross floor area of 7 square feet per occupant, based on the occupant load of the portions of the building that are below WSEL200. For every 50 occupants an additional 35 square feet shall be provided. The area provided shall be adequate to accommodate the occupant load from the area below the WSEL200, in addition to the calculated occupant load of the space designated as the evacuation location.

Assembly rooms, when used as evacuation locations, shall be sized to include the calculated number of evacuees plus fifteen (15) square feet per person for the space within the assembly room designated as the evacuation location.

Where corridors, hallways, or other exit facilities are designated as evacuation locations, the area of the evacuation location shall be based on the occupant load from below the WSEL200.

XXX.5.2 Route to evacuation location. A route to the evacuation location shall be provided. The route to an evacuation location shall meet the accessibility requirements in Chapters 11A and 11B applicable to the occupancy. A route shall be allowed through any number of intervening rooms or spaces. Doors along the route shall comply with applicable provisions of Section 1008, and be openable without the use of a key, lock, special knowledge or effort. The evacuation route shall not be subject to the provisions of Section 1005.

XXX.5.3 Alarms on doors to rooftop, deck, balcony, and porch evacuation locations. If rooftops, decks, balconies, and porches are designed as evacuation locations, doors to such roofs, decks, balconies, and porches may have exit alarms that make audible, continuous alarm sounds when the door is opened. Exit alarms when provided shall be connected to the primary electrical wiring of the building with battery backup.

XXX.5.4 Signage.

XXX.5.4.1 General location signage. A sign depicting “FEL” for “Flood Evacuation Location” and diagram illustrating a building extending above floodwaters shall be placed on the exterior of each building in a conspicuous location above the WSEL200 for emergency personnel notification.

XXX.5.4.2 Location signage in Group R-1 and R-2 occupancies. A diagram depicting the evacuation location and the route leading thereto shall be posted on or immediately adjacent to every required egress door from each Group R-1 hotel or motel sleeping room and Group R-2 dormitory sleeping unit. This diagram shall be posted within every common area of apartment complexes.

XXX.5.4.3 Location signage in Group R-4 occupancy. In Group R-4 occupancy, signage complying with Section 1117B.5.1 shall be installed in the main entries/lobbies and adjacent to stairs and elevator doors on all floors at or below the WSEL200 indicating the location of the evacuation location and the route(s) leading thereto.

XXX.5.5 Voluntary flood emergency supply storage area. If a flood emergency supply storage area, such as a closet or box, is provided in an evacuation location, a sign that reads “Flood Emergency Supply Storage Area” complying with Section 1117B.5 shall be provided on the inside of the closet or alcove to identify the storage area.

XXX.5.6 Elevator equipment. Elevator equipment for elevators serving evacuation locations shall be elevated no less than one (1) foot above the WSEL200. A float switch or other device shall be provided to prevent the elevator car from descending into

floodwaters and, when floodwaters are sensed, the elevator controls shall prevent service to floors where flood water is detected. The float switch or similar device(s) may be located beneath the WSEL200.

XXX.6 Evacuation location within a building. If the evacuation location is a space within a building, the evacuation location shall be provided with a means for occupants to be rescued from the evacuation location specified in Section XXX.6.1, or Section XXX.6.2, or Section XXX.6.3.

XXX.6.1 Achieving the required elevation. If necessary to elevate a space within a building to be no less than one (1) foot above the WSEL200, a building may be designed with a raised or extended foundation, slab-on-grade upon structural fill, the floor-to-ceiling height of one or more stories may be increased, or an interstitial structural space may be increased.

XXX.6.1.1 Lowest floor raised with structural fill. Where structural fill is utilized to raise the lowest floor above the WSEL200, all grading shall be in accordance with ASCE 24, Section 2.4 and Section 2.5. The structure shall have the lowest floor (including basements) elevated to WSEL200 plus 1 foot or above. The base flood elevation (BFE) would be replaced with the .5% percent chance of flooding and used to determine that requirements for elevation 1 foot above the WSEL200 have been achieved.

XXX.6.1.2 Lowest floor raised on extended foundation using structural fill. Where Slabs-on-Grade are used to raise the lowest floor above the WSEL200, the use of Slabs-on-Grade shall be in accordance with ASCE 24, Section 2.5.1. The structure shall have the lowest floor (including basements) elevated to WSEL200 plus 1 foot or above. The reference to Design Flood Elevation (DFE) contained within ASCE 24, Section 2.5.1, would be replaced with the WSEL200 plus 1 foot for this Code Section.

XXX.6.2 Windows, minimum size and dimensions. Two or more windows shall be provided that meet the minimum size, minimum dimensions, and operational constraints of Section 1026. In addition to the windows required, for evacuation locations with an occupant load of 20 or more the evacuation location shall include additional windows meeting the requirements of Section 1026 on a ratio of one additional window per 30 occupants or fraction thereof, in excess of 20 occupants, for the evacuation location.

XXX.6.3 Exterior doors. Exterior doors may be used for rescue from the evacuation location. Such doors shall comply with Section 1008 and applicable sections of Chapters 11A and 11B.

XXX.7 Decks and balconies that are evacuation locations. Decks and balconies that are no less than one (1) foot above the WSEL200 shall be permitted to be evacuation locations.

XXX.8 Rooftop evacuation locations. Rooftop evacuation locations shall be permitted to include rooftop platforms and rooftop areas provided that they are no less than one (1) foot above the WSEL200.

XXX.8.1 Rooftop platforms required. A rooftop platform shall be provided if the portion of the roof to be used as the evacuation location has a roof slope greater than $\frac{1}{4}$ unit vertical in 12 units horizontal (2 percent slope).

XXX.8.2 Roof live loads. Roof areas that are rooftop evacuation locations and roofs that support rooftop platforms that are evacuation locations shall be designed for a roof live load same as the occupancy served per Table 1607.2.

XXX.8.3 Evacuation routes to rooftop evacuation locations. In Group R occupancies, a stairway shall be provided to the roof level at which the evacuation location is located.

XXX.8.4 Guards. Guards shall be provided for rooftop evacuation locations per Section 1013.

XXX.8.5 Utility/Equipment buffer zone. Rooftop evacuation locations shall be designed and located to avoid rooftop areas containing mechanical equipment, photovoltaic system components, and other rooftop equipment. Where rooftop equipment is within or abuts the evacuation location, a guard shall be placed surrounding the rooftop equipment. The guard shall be placed a minimum of twenty-four (24) inches beyond the perimeter edges of the equipment including all electric and gas line roof penetrations. Where multiple pieces of rooftop equipment are located in close proximity, a guard may be provided twenty-four (24) inches beyond the perimeter edges of the equipment group.

Electrical service lines shall not pass over evacuation locations. Roof-mounted electric, gas, and other service lines shall not pass through the evacuation location.

XXX.9 Multiple buildings on a site. Where a site contains multiple buildings, a common evacuation location may be utilized provided the distance from the most remote building on the site is acceptable to the building official. Prior to acceptance of a common evacuation location the building official shall require the owner to provide a study prepared by a licensed engineer experienced with flood protection to substantiate the adequacy of the proposed common evacuation location. Such report shall consider the distance from the flood source, anticipated

flood water velocity, potential flood depth at the project site, and proposed travel distance to the common evacuation location.

XXX.10 Alternate means of protection.

XXX.10.1 Request for approval of alternate means of protection.

Requests for approval to use an alternative means of protection shall be made in writing to the building official by the owner or the owner's authorized representative. The request shall be accompanied by a full statement of the conditions and sufficient evidence that the proposed alternate means of protection provides reasonable protection to occupants.

XXX.10.2 Action on requests.

The building official shall require the owner to obtain a written statement from the applicable emergency management authority regarding plans and processes related to notification of anticipated conditions of flooding, warnings, evacuations, and other pertinent conditions relative to the proximity of nearby levees. The building official shall also require the owner to obtain a written statement and findings from the entity that has jurisdiction over the management, maintenance, monitoring, and control of flood protection works in the vicinity of the location of the owner's property, such statement shall comment on the viability of the proposed alternate means of protection. The building official may request written statements from the Central Valley Flood Protection Board, the California Department of Water Resources, and the California Emergency Management Agency.

Note: Contact information for the California Department of Water Resources and the Department's Directory of Flood Officials, which includes levee and reclamation district boundary maps, is available on-line at the following web site: www.water.ca.gov/BuildingCodes. The Department of Water Resources Building Code Project Engineer can be contacted at 916-574-1451. The Central Valley Flood Control Board Chief Engineer can be contacted at 916-574-0609. The California Emergency Management Agency Inland Region Program Manager can be contacted at 916-845-8488.

Approval of a request for use of an alternative means of protection made pursuant to these provisions shall be limited to the particular case covered by the request and shall not be construed as establishing any precedent for any future request except in substantially equivalent situations.

XXX.10.3 Appeals.

When a request for an alternate means of protection has been denied by the building official, the applicant may file a written appeal with the board of appeals. In considering such appeal, the board of appeals may require additional information, and request additional written statements substantiating the adequacy of the proposed alternate from, the Central Valley Flood Protection Board, the California Department of Water Resources, and the California Emergency Management Agency. If such additional written statements are provided, the board of appeals shall consider those statements.

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