## Limit the Size of Enclosures below Elevated Buildings – local code amendments (Part 2 building and Part 2.5 residential)

Submit draft ordinances amending the flood provisions of the building code (in <track changes>) for review well in advance of first reading to DWR\_NFIP@water.ca.gov or FEMA-NFIP-R9@fema.dhs.gov. Please put community name in subject line.

**Before you start:** Review the General Instructions for Amending the California Building Standards Code (CCR Title 24) to Adopt Higher Standards for Buildings and Development Located in Flood Hazard Areas.

**NFIP Community Rating System Credits.** Adoption and enforcement of this higher standard may qualify for CRS points (credits). Communities should review the [*CRS Coordinators Manual*](https://www.fema.gov/media-library/assets/documents/8768)and consult with their CRS Resource Specialists. FEMA/ISO determines which provisions qualify for points.

**Description[[1]](#footnote-1):** Limiting the size of enclosures below elevated buildings helps minimize flood damage. Enclosures below otherwise properly elevated buildings are allowed under the NFIP and CCR Title 24, provided the enclosures meet certain requirements and are used only for parking of vehicles, storage, and building access. Neither the NFIP nor the California codes limit the size of enclosures.

Walls of enclosed areas must meet specific requirements depending on the flood zone:

* In flood zones that start with the letter “A”, walls are required to have flood openings.
* In Zone V/VE and Coastal A Zones (CAZ), walls are required to break away under certain flood loads and must also have flood openings.

Enclosures do not need to be large to serve the allowed uses. The benefits of limiting the size of enclosures include smaller obstructions to the free flow of floodwater, owners are less likely to modify smaller enclosures, and less debris in floodwater when breakaway walls fail as designed. In Zone V/VE, NFIP flood insurance policies are more expensive when buildings have enclosures larger than 300 square feet. Many communities that limit the size of enclosures select a smaller size, such as 295 square feet. Also, most communities do not apply the size limit to crawlspaces where the foundation wall height is less than a specified number of feet (typically less than 4 or 5 feet).

**How Part 2 (buildings) addresses the size of enclosures beneath elevated buildings:** Part 2 (buildings), by reference to ASCE 24, includes the basic NFIP-consistent requirements for enclosed areas and walls below elevated buildings, with no limitation on the size of enclosures. Requirements for enclosures under buildings in flood zones that start with “A” are in ASCE 24 Section 2.6 and requirements for Zone V/VE and CAZ are in ASCE 24 Section 4.6. When a FIRM shows a Limit of Moderate Wave Action (LiMWA) or a community otherwise designates a CAZ, the building code treats CAZ like Zone V/VE, with an exception permitting backfilled stem wall foundations, provided the foundations are designed for wave loads, debris impact, erosion and local scour.

**How Part 2.5 (dwellings) addresses the size of enclosures beneath elevated dwellings:** Part 2.5 (dwellings) includes the basic NFIP-consistent requirements for enclosed areas and walls below elevated dwellings, with no limitation on the size of enclosures. Requirements for all flood zones are in R322.1, requirements for flood zones that start with “A” are in R322.2, and requirements for Zone V/VE and CAZ are in R322.3. When a FIRM shows a Limit of Moderate Wave Action (LiMWA) or a community otherwise designates a CAZ, the residential code treats CAZ like Zone V/VE, with an exception permitting backfilled stem wall foundations, provided the foundations are designed for wave loads, debris impact, erosion and local scour.

**INSTRUCTIONS**

**Step 1. Use this amendment to limit the size of enclosures under elevated buildings/dwellings.**

* You may select the size limit. In the sample code change language shown below, insert the size where you see **{insert number}**. Because NFIP flood insurance is more expensive in Zone V/VE when buildings have enclosures that are 300 sq. ft. or larger in size, many communities elect to use a size limit of 295 sq. ft. (or less) to decrease the likelihood of enclosures being slightly larger than the 300 sq. ft. trigger. NOTE that when surveyors complete FEMA Elevation Certificates, the measurement of the area of enclosures/garages is taken on the outside.
* You may decide to apply a size limit to all buildings (Part 2 and Part 2.5) or only to one- and two-family dwellings (Part 2.5).
* In flood zones that start with “A”, this amendment also limits the size of crawlspaces, except crawlspaces that are less than a certain height (you may select the height; 4 or 5 is common). Applying the limitation only to crawlspaces of a certain height is intended to dissuade future owners from excavating “taller” crawlspaces to add usable area, which would create basements that are not permitted. Remove the phrase “except for crawlspace foundations that have a wall height less than {insert number} feet.
* In Zone V/VE and CAZ, this additional language limits the size of all enclosures – even enclosures surrounded by insect screening or open lattice because those enclosures could be modified in the future to have solid walls.
* To apply in only Zone V/VE and CAZ, modify only R322.3.5. Check with Technical Support for guidance on modifying the amendment to 1612.2.

**Step 2.** **Amend Part 2 (all buildings except 1- and 2-family dwellings and townhouses less than three stories).** Add a section to the ordinance that adopts local amendments to Part 2. To make the changes discernable, maintain strikethrough and underlining.

|  |
| --- |
| *CCR Title 24, Part 2 is hereby amended by adding a new section 1612.2.1 as follows:***1612.2.1 Modification of ASCE 24: Additional requirements for enclosed areas.** In addition to the requirements of ASCE 24, enclosed areas below the lowest floor shall be not more than **{insert number}** square feet in area, except for crawlspace foundations that have a wall height less than **{insert number}** feet. |

**Step 3.** **Amend Part 2.5 (1- and 2-family dwellings and townhouses less than three stories).** Add a section to the ordinance that adopts local amendments to Part 2.5. To make the changes discernable, maintain strikethrough and underlining.

|  |
| --- |
| *CCR Title 24, Part 2.5, Section R322.2.2 is hereby amended as follows:***R322.2.2 Enclosed area below design flood elevation.** Enclosed areas, including crawl spaces, that are below the design flood elevation shall:1. Be used solely for parking of vehicles, building access or storage.
2. Be provided with flood openings that meet the following criteria and are installed in accordance with Section R322.2.2.1:

2.1. The total net area of nonengineered openings shall be not less than 1 square inch (645 mm2) for each square foot (0.093 m2) of enclosed area where the enclosed area is measured on the exterior of the enclosure walls, or the openings shall be designed as engineered openings and the construction documents shall include a statement by a registered design professional that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified in Section 2.7.2.2 of ASCE 24. 2.2. Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall. 2.3 The presence of louvers, blades, screens and faceplates or other covers and devices shall allow the automatic flow of floodwater into and out of the enclosed areas and shall be accounted for in the determination of the net open area. 1. Be not more than **{insert number}** square feet in area, except for crawlspace foundations that have a wall height less than **{insert number}** feet.
 |
| *CCR Title 24, Part 2.5, Section R322.3.5 is hereby amended as follows:***R322.3.5 Enclosed areas below design flood elevation.** Enclosed areas below the design flood elevation shall be not more than **{insert number}** square feet in area unless enclosed by insect screening or lattice, and shall be used solely for parking of vehicles, building access or storage. |

1. Reference: [*Reducing Flood Losses Through the International Codes: Coordinating Building Codes and Floodplain Management Regulations*](http://www.fema.gov/media-library/assets/documents/96634)(5th Edition, 2019), International Code Council and FEMA. [↑](#footnote-ref-1)