

IP SECTIONS RELATED TO ENVIRONMENTAL HAZARDS (Including 22.64.060 and definitions)

22.64.060 Environmental Hazards

A. Application requirements.

1. Environmental Hazards Evaluation.

a. Initial Site Assessment. The reviewing authority shall conduct an initial site assessment screening of all Coastal Permit applications to determine whether the site is or will be subject to geologic or other hazards over a timeframe of a minimum of ~~100~~ 50 years. Geological or other hazards are defined to include Alquist-Priolo earthquake hazards zones; ~~areas subject to tsunami runup~~, landslides, liquefaction, ~~episodic and long-term~~ shoreline retreat, ~~(including beach or bluff erosion)~~, ~~high seas, ocean waves, tidal scour, flooding~~; steep slopes averaging greater than 35 percent; unstable slopes regardless of steepness; and flood hazard areas, including those areas potentially inundated by future sea level rise. The screening shall include as applicable a review of available reports, resource maps, aerial photographs, site inspection, and the County's adopted hazards maps. ~~The County's hazard mapping program can be used as a resource for identification of hazard areas; however, absence of mapping cannot alone be considered absence of hazard and local site conditions must be examined at the time of permit application using the best available science. Best available science with respect to sea level rise means peer reviewed and well documented climate science using empirical and evidence based data that establishes a range of locally relevant future sea level rise projections. At the time of this LCP certification (2015), the best available science on sea level rise in California is the 2012 National Research Council (NRC) Report, Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (NRC, 2012). However, any other document that meets the above definition may be used for planning purposes in Marin's coastal zone.~~

b. Environmental Hazards Report. Where the initial site assessment reveals that the proposed development is ~~"Blufftop Development (as defined in 2.b. below), "Shoreline Development" (as defined in 2.e below), or within 100 feet of in~~ an area potentially subject to geologic, flood, blufftop erosion, shoreline erosion or other hazards over the ~~100~~ 50 year assessment time frame, the project shall include an Environmental Hazards Report prepared by a qualified registered civil or structural engineer or licensed geologist or engineering geologist. The Report shall describe the extent of potential environmental hazards on the site over the minimum ~~100~~ 50 year timeframe, and recommend best available construction, siting and other techniques to avoid and minimize possible environmental hazards. Where applicable, the Report shall also address the following specific issues:

FEMA Flood Zones: On properties within mapped FEMA flood hazard areas (designated as Zone A, AO, A1-30, AE, A99, AH, VO, V1-V30, VE and V) the report shall identify the extent to which:

1. Development will comply with construction standards contained in Chapter 23.09 (Floodplain Management) including the requirement to add up to a maximum of three feet of additional freeboard (to accommodate identified sea level rise as depicted on "Potential Sea Level Rise Maps" prepared and adopted by the County of Marin) to the Base Flood Elevation (BFE) when establishing the minimum elevation required for proposed construction; and
2. Development will not create a hazard or diminish the stability of the area.

3. For additional requirements for shoreline development (properties within VO, V1-V30, VE, and V zones), see Section 22.64.060.A.2.b below.

Sea Level Rise: On properties outside mapped FEMA flood zones but within areas potentially inundated by accelerated sea level rise as shown on adopted “Potential Sea Level Rise Maps”, the report shall describe the extent to which:

1. Development will be constructed such that the lowest finished floor of development exceeds the highest natural elevation of the ground surface next to the proposed walls of the structure prior to construction (i.e. “highest adjacent grade”) by an amount equal to or greater than the projected sea level rise as depicted on “Potential Sea Level Rise Maps”.
2. Development will not create a hazard or diminish the stability of the area.

Geologic Hazards: On properties in potential geologic hazards areas (which include Alquist-Priolo earthquake hazard zones, and areas subject to landslides, liquefaction, steep slopes averaging greater than 35% and unstable slopes regardless of steepness), the report shall describe the extent to which:

1. Development will comply with the seismic safety standards of the Alquist-Priolo Act (Calif. Public Resources Code Section 2621, et seq.) and all applicable seismic provisions and criteria contained in the most recent version of State and County codes;
2. Development will incorporate construction and siting techniques to mitigate the applicable geologic hazard; and
3. Development will not create a hazard or diminish the stability of the area.
4. For additional requirements for blufftop development, see Section 22.64.060.A.2.a below.

~~Reports addressing tsunami runup, beach or bluff erosion, wave impacts and flood hazards shall include evaluation of potential changes to the hazard due to sea level rise that might occur over the life of the development and the 100 year assessment time frame. Existing shoreline protective devices shall not be factored into the required analysis. The Report shall be required to demonstrate that, subject to the Report’s recommended measures, all of the following findings can be made: (1) that the development will be sited and designed to assure stability and structural integrity for the development’s lifetime and a minimum of 100 years, (2) that the development will be set back a sufficient distance from identified hazard areas so as to not create a hazard or diminish the stability of the area, and (3) that the development will not require the construction of shoreline protective devices during its lifetime, including at the time of the initial development proposal. All development located within hazardous areas, including all “Blufftop Development” and “Shoreline Development”, shall also comply with the requirements of Section 22.64.060.B.8. In addition to the Environmental Hazards Report requirement of this subsection A(1), “Blufftop Development” and “Shoreline Development” must also meet the requirements of subsections A(2) and A(3), below, including requiring supplementary analyses within the Environmental Hazards Report. (Land Use Plan Policy C-EH-2)~~

2. Additional Coastal Hazards Analysis for Blufftop and Shoreline Development.

~~a. Additional Application Requirements. All Coastal Permit applications for alterations to existing structures (including additions, exterior and/or interior renovations, repair and maintenance, and demolition) shall clearly identify: (1) all major structural components that are being altered; and (2) the cost of the alteration project and the market value of the existing structure being altered before construction. Major structural components are~~

~~defined and identified in the definition of “Redevelopment, Coastal (coastal)” in Article VIII. The application must also identify any previous changes to such major structural components since February 1973, including identifying all associated Coastal Permits.~~

~~a.b.~~ Blufftop Development. In addition to the requirements for the Environmental Hazards Report identified in subsection A(1) above, Coastal Permit applications for development, ~~including coastal redevelopment and additions to existing structures~~ proposed: 1) on a blufftop; or 2) on a site located in stability zone 2, 3, or 4 as indicated on the Slope Stability of the Bolinas Peninsula Study Area map which accompanies Wagner’s 1977 report, “Geology for Planning, Western Marin County” (hereby incorporated by reference as part of this Development Code), shall be required to supplement the Environmental Hazards Report with an analysis that evaluates the effect of geologic and other hazards at the site to ensure the proposed development’s stability and structural integrity, and to ensure that the blufftop development is safe from bluff retreat, without the need for shoreline protective devices for the development’s lifetime and a minimum of 100 years. The supplementary analysis shall include an evaluation of the long-term average annual bluff erosion rate, and shall include a quantitative slope stability analysis demonstrating a minimum factor of safety against sliding of 1.5 (static) or 1.2 (pseudostatic, $k = 0.15$ or determined through analysis by the geotechnical engineer). The erosion rate and slope stability shall be determined using the best available science, including being based upon an examination of the historic and projected rates of bluff retreat associated with wave, wind and/or surface runoff erosion, continued and future sea level rise and, to the maximum extent feasible, to take into account the effect of strong seismic shaking. ~~Existing shoreline protective devices shall not be factored into the required analyses.~~ The erosion rate and slope stability information shall be used to determine the appropriate blufftop setback as specified in Section 22.64.060.B.2 below. The supplementary analysis shall also list the required Coastal Permit conditions necessary to ensure that the structure is relocated and/or removed (and the site restored) whenever the development is deemed hazardous and unsafe for human occupancy, as specified in subsection (d), below. (Policy C-EH-5)

~~b.e.~~ Shoreline Development. In addition to the requirements for the Environmental Hazards Report identified in subsection A(1) above, Coastal Permit applications for shoreline development ~~(defined as development located in a VO, V1-V30, VE, or V zone as mapped by the Federal Emergency Management Agency) (defined as development located at or near the ocean sand interface, and/or at very low lying elevations along the intersection of the ocean or sea with land, that may be inundated by environmental hazards in the 100 year evaluation time frame), including new development on vacant/undeveloped lots, additions to existing structures, and coastal redevelopment~~ shall be required to supplement the Environmental Hazards Report with an analysis that demonstrates that the proposed development will be safe from shoreline erosion for ~~set back a sufficient distance from the shoreline to ensure stability and structural integrity for the development’s lifetime and~~ a minimum of ~~100~~ 50 years without the need for shoreline protective devices, ~~and such analysis shall not factor in the presence of any existing shoreline protective devices. For coastal redevelopment, if there is insufficient space on a property to feasibly meet the setback requirements, then such development may meet the minimum 100-year stability and structural integrity requirement through setting back as far as feasible in tandem with the use of caisson/pier foundations and elevation (including if elevation of the structure is necessary to meet Federal Emergency Management Agency (FEMA) flood requirements) but no other type of shoreline protective device is allowed.~~ The supplementary analysis shall also evaluate the effect of the project over time ~~(including in response to sea level rise)~~ on coastal resources (including protection of public access, shoreline dynamics, natural landforms, and public views). ~~The analysis shall consider not only the primary structure, but also the effects of related development, such as required ingress/egress to structures and the provision of services (e.g., water, wastewater, etc.). The supplementary~~

~~analysis shall also list the required Coastal Permit conditions necessary to ensure that the structure is relocated and/or removed (and the site restored) whenever the development is deemed hazardous and unsafe for human occupancy, as specified in subsection (d), below. The provisions of this subsection allowing the use of caisson/pier foundations and elevation for shoreline redevelopment in certain circumstances shall apply until April 30, 2017 or until this subsection is amended, whichever occurs first. If a complete LCP amendment to amend this subsection is not submitted as of April 30, 2017 (including where subsequent withdrawal of such LCP amendment will deem it to have not been submitted), then shoreline redevelopment will no longer be allowed to meet minimum 100-year stability and structural integrity requirements through the use of caisson/pier foundations and elevation. The April 30, 2017 deadline may be extended for good cause by the Executive Director of the Coastal Commission.~~

c.d. Removal and Restoration. Development located on bluffs and/or shoreline development as defined in Section 22.64.060.A.2.b near the shoreline shall be sited, designed, and built in a manner that facilitates removal and/or relocation of the development (including its foundation, and all other related development (e.g., utilities and driveways)) before a shoreline protective device is needed. In addition to the requirements for the Environmental Hazards Report identified in subsection A(1) above, Coastal Permit applications for development located on bluffs and/or near the shoreline shall identify all measures to be taken to facilitate such future removal and/or relocation. All Coastal Permits shall be conditioned to require the approved development to be relocated and/or removed outside of the area subject to coastal hazards if an appropriate government agency determines that any portion of the approved development is not to be occupied or used due to any coastal hazards, and such hazard concerns cannot be abated by ordinary repair and/or maintenance. The Coastal Permit conditions shall require that, prior to removal/relocation, the Applicant shall prepare a Removal and Restoration Plan for review and approval by the Reviewing Authority. If the Reviewing Authority determines that an amendment to the Coastal Permit or a separate Coastal Permit is legally required, the Applicant shall immediately submit the required application, including all necessary supporting information to ensure it is complete. The Removal and Restoration Plan shall clearly describe the manner in which such development is to be relocated and/or removed and the affected area restored so as to best protect coastal resources, and shall be implemented immediately upon Reviewing Authority approval, or approval of the Coastal Permit or amendment application, if necessary.

3. **Drainage plan for blufftop development.** Coastal Permit applications for development proposed on a blufftop parcel shall include a drainage plan prepared by a civil engineer, which indicates how rainwater and irrigation runoff will be directed away from the top of the bluff or handled in a manner which prevents damage to the bluff by surface and percolating water. Blufftop landscaping shall be required to use drought tolerant native species with minimal irrigation.
4. **Engineering report for shoreline protective devices.** Coastal Permit applications for the construction or reconstruction of any shoreline protective device, including revetments, breakwaters, groins, seawalls, bluff retention devices, deep piers/caissons (deep piers/caissons are not considered to be a shoreline protective device when they are designed and used for architectural foundations and not for erosion protection or to prevent beach retreat), or other artificial structures for coastal erosion control and hazards protection shall include a report from a professional civil engineer or certified engineering geologist experienced with coastal processes and structures verifying that the device is necessary and explaining how the device will perform its intended function and the extent to which it will meet the criteria and standards contained in Section 22.64.060.B.7 below. The report shall include information on the existing structure/public beach that is being

threatened by erosion; likely time period when the structure/public beach will be in danger from erosion; and an analysis of alternatives to a shoreline protective device that are capable of protecting existing threatened structures/beaches from erosion including: no action, involvement in regional beach nourishment, a different type of shore protection, options for bioengineering and groundwater controls, and modification to, resizing or relocation of the threatened structure. In addition, the report shall include the following information:

- (a) For the shoreline in question: long term and seasonal erosion trends, the effects of future sea level rise on future erosion rates, and the potential effects of infrequent storm events, such as a 100-year storm;
- (b) The amount of beach that will be covered by the shoreline protective device;
- (c) The amount of beach that will be lost through passive erosion over the life of the shoreline protective device;
- (d) The amount of sand generating materials that will be contained and not allowed into the shoreline system over the life of the shoreline protective device;
- (e) Total lineal feet of shoreline protective devices within the littoral zone where the device is proposed;
- (f) The cumulative impact of added shoreline protective devices to the littoral cell within which the proposed device will be located;
- (g) Measures to reduce or minimize visual impacts for the shoreline protective device;
- (h) Measures to modify or adapt the shoreline protective device in the event it is not adequate to provide protection in the future due to changes in sea level or storm conditions;
- (i) Impacts to beach access, recreation, beach habitat, and shoreline ecosystems from the shoreline protective device; and
- (j) Provision for future maintenance of the shoreline protective device, for future removal of the shoreline protective device if and when it reaches the end of its economic or functional life, and for changes in the shoreline protective device if needed to respond to alterations in the development for which the device was installed.

5. New development and fire safety. Coastal Permit applications shall demonstrate that the new development meets all applicable fire safety standards, including accounting for all necessary defensible space within the developable area of a site.

B. Environmental Hazard standards. Development shall be consistent with the Environmental Hazard Policies of the LUP, including *but not limited to:*

- 1. Blufftop setbacks.** Proposed structures, including accessory structures, shall be set back a sufficient distance from coastal blufftop edges to ensure that they will not be threatened by bluff retreat within their expected lifetime (the evaluation timeframe shall be a minimum of ~~100~~ 50 years) and will not require shoreline protection per Land Use Plan Policy C-EH-5.

2. **Determination of blufftop setbacks.** The geologic setback, as measured from the bluff edge, shall be sufficient to maintain a minimum factor of safety against sliding of at least 1.5 for the expected life of the development, or a minimum of ~~100~~ 50 years. Thus the distance from the bluff edge where a minimum factor of safety of 1.5 is achieved today shall be added to the expected bluff retreat over the next ~~100~~ 50 years.
3. **Shoreline access facilities on blufftop parcels.** Shoreline access facilities, such as stairways and ramps, may only be permitted per Land Use Plan Policy C-EH-7 and C-EH-16.
- ~~4. **Bolinas Bluff Erosion Zone setback exceptions and waivers.** Within established Bluff Erosion Zones on the Bolinas Mesa, no new construction shall be permitted on vacant lots. Residential additions no greater than 10 percent of the existing floor area or 120 square feet (whichever is greater) may be permitted on a one-time basis so long as such additions conform with all applicable LCP policies.~~
- ~~5. **Shoreline Development.** New shoreline development (including new development on vacant/undeveloped lots, additions to existing structures, and coastal redevelopment) shall be consistent with Land Use Policy C-EH-5, including being set back a sufficient distance from the shoreline to ensure stability and structural integrity for the development's lifetime and a minimum of 100 years without the need for shoreline protective devices.~~
6. **Drainage on Blufftop Parcels.** Surface and subsurface drainage associated with development of any kind shall not contribute to the erosion of the bluff face or the stability of the bluff itself consistent with Land Use Policy C-EH-6.
7. **Criteria and design standards for shoreline protective devices.** Shoreline protective devices in the Coastal Zone are discouraged due to their visual impacts, obstruction of public access, interference with natural shoreline processes and water circulation, and effects on marine habitats and water quality. The construction or reconstruction of shoreline protective devices shall only be allowed subject to the criteria contained in Land Use Plan Policies C-EH-13, C-EH-14, and C-EH-18. Emergency Coastal Permit applications for shoreline protective devices may be considered in compliance with Section 22.70.130 (Emergency Coastal Permits) consistent with the Land Use Plan Policy C-EH-21.
6. **Accessory structures in hazardous areas.** Accessory structures on blufftop/shoreline parcels shall be designed and constructed in conformance with Land Use Plan Policy C-EH-15.
- ~~7. **Seismic safety standards.** Proposed structuresDevelopment shall meet the seismic safety standards of the Alquist Priolo Act (Land Use Plan Policy C-EH-4).~~
8. **Applicant's assumption of risk.** The owner of property proposed for development in hazardous areas shall be required to record a Liability Waiver and Acknowledgement exempting the County from liability for any personal or property damage caused by geologic or other hazards per Land Use Plan Policy C-EH-~~32~~. In addition, for blufftop and shoreline development, the owner shall be required to record a deed restriction acknowledging that future shoreline protective devices to protect structures authorized by such Coastal Permit are prohibited per Land Use Plan Policy C-EH-~~32~~ and waiving any right that may exist to construct such devices.
9. **Prohibition on Creation of new parcels abutting coastal waters.** Creation of new parcels on lands abutting the shoreline shall be prohibited unless the new parcel can be

developed consistent with all applicable LCP provisions, including that development on the created parcel will not require a shoreline protective device during its lifetime.

10. Major Vegetation. Coastal Permit applications for the removal of major vegetation must meet criterion (a) below, and at least one of criteria (b) through (k) for removal. Major vegetation removal around existing development for fire safety purposes shall comply with Land Use Plan Policy C-EH-25.

- (a) The major vegetation removal shall: 1) not adversely affect any environmentally sensitive habitat areas; 2) not adversely impact coastal waters; 3) protect significant public views, including views both to and along the ocean and scenic coastal areas as seen from public viewing areas; and 4) not conflict with conditions of approval of a prior coastal permit.
- (b) The general health of the major vegetation is so poor due to disease, damage, or age that efforts to ensure its long-term health and survival are unlikely to be successful, or removal of the major vegetation is necessary to ensure the health and survival of surrounding vegetation native to the locale;
- (c) The major vegetation is infected by a pathogen or attacked by insects that threaten surrounding major vegetation as determined by an arborist report or other qualified professional;
- (d) The major vegetation is a potential public health and safety hazard due to risk of falling and its structural instability cannot be remedied;
- (e) The major vegetation is a public nuisance by causing damage to improvements, such as building foundations, retaining walls, roadways/driveways, patios, sidewalks and decks, or interfering with the operation, repair or maintenance of public utilities;
- (f) The major vegetation has been identified by a Fire Inspector as a fire hazard that requires removal;
- (g) The major vegetation was planted for a commercial enterprise, such as a Christmas tree farm or orchard;
- (h) The major vegetation is located on land which is zoned for agriculture (C-ARP or C-APZ) and is being used for commercial agricultural purposes;
- (i) The major vegetation removal is proposed by a public agency to provide for the routine management and maintenance of public land or to construct a fuel break;
- (j) The major vegetation is non-native and is not defined as a “protected and heritage tree” in Article VIII (Definitions).

11. Seadrift. The Environmental Hazard standards listed above are not intended to override or otherwise preclude compliance with any entitlements that may exist under the Seadrift Settlement Agreement and Coastal Commission Coastal Permit A-1-MAR-87-235 as amended (through and including Coastal Permit Amendment A-1-MAR-87-235-A).

DEFINITIONS – Article VIII

Blufftop (coastal). The upper surface of a bluff extending inland from the bluff edge a distance of 150 feet.

~~Redevelopment (coastal).~~ Development that is located outside of blufftop or shoreline areas that meet criteria A or B below:

~~A. Development that consists of alterations including (1) additions to an existing structure, (2) exterior and/or interior renovations, and/or (3) demolition of an existing bluff home or other principal structure, or portions thereof, which results in:~~

~~(1) Alteration of 50% or more of major structural components including exterior walls, floor and roof structure, and foundation, or a 50% increase in floor area. Alterations are not additive between individual major structural components; however, changes to individual major structural components are cumulative over time from the date of certification of the LUP.~~

~~(2) Demolition, renovation or replacement of less than 50% of a major structural component where the proposed alteration would result in cumulative alterations exceeding 50% or more of a major structural component, taking into consideration previous alterations approved on or after the date of certification of the LUP; or an alteration that constitutes less than 50% increase in floor area where the proposed alteration would result in a cumulative addition of greater than 50% of the floor area, taking into consideration previous additions approved on or after the date of certification of the LUP.~~

~~B. Development that consists of any alteration of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction, as per National Flood Insurance Program (NFIP) requirements administered by the Federal Emergency Management Agency (FEMA).~~

~~For the purposes of this definition:~~

~~An exterior wall is considered to be altered 50% or more when any of the following occur either above or below grade:~~

~~(a) Exterior cladding and/or framing systems are altered in a manner that requires removal and/or replacement of 50% or more of the elements of those cladding and framing systems, normally considered as linear length of wall.~~

~~(b) Reinforcement is needed for any remaining portions of the wall to provide structural support in excess of 50% of existing support elements (e.g. addition of 50% or more of beams, shear walls, or studs whether alone or alongside the existing/retained elements).~~

~~A floor or roof structure is considered to be altered 50% or more when any of the following occur:~~

~~(a) The roof or floor framing is altered in a manner that requires removal and/or replacement of structural elements (e.g. trusses, joists, rafters) supporting 50% or more of the square footage of the roof or floor.~~

~~(b) The roof or floor structural framing system requires additional reinforcement to any remaining portions of the roof or floor system to provide structural support (e.g. addition of 50% or more of beams, joists, and/or rafters, etc., whether alone or alongside existing/retained system elements).~~

~~A foundation is considered to be altered 50% or more when any work is done on any of the following:~~

(a) 50% or more of the horizontal surface area of a slab foundation.

(b) 50% or more of the floor area of a structure supported by a pier/post and/or caisson/grade beam foundation.

(c) 50% or more of a perimeter foundation.

Major structural component alterations generally do not include changes to roof coverings; replacement of glass or doors in existing window or door openings; replacement of window or door framing when the size and location of the window/door remains unchanged; repair of roofs or foundations without any change to structural supporting elements; changes to exterior siding; repair, maintenance, and replacement of chimneys; and interior changes to non structural interior walls and sheetrock, insulation, fixtures, and mechanical, electrical and plumbing elements.

Redevelopment, Coastal (coastal). Development that is located on blufftops or at or near the ocean-sand interface and/or at very low lying elevations along the shoreline that meet criteria A or B below:

A. Development that consists of alterations including (1) additions to an existing structure, (2) exterior and/or interior renovations, and/or (3) demolition of an existing bluff home or other principal structure, or portions thereof, which results in:

(1) Alteration of 50% or more of major structural components including exterior walls, floor and roof structure, and foundation, or a 50% increase in floor area. Alterations are not additive between individual major structural components; however, changes to individual major structural components are cumulative over time from the date of certification of the LUP.

(2) Demolition, renovation or replacement of less than 50% of a major structural component where the proposed alteration would result in cumulative alterations exceeding 50% or more of a major structural component, taking into consideration previous alterations approved on or after the date of certification of the LUP; or an alteration that constitutes less than 50% increase in floor area where the proposed alteration would result in a cumulative addition of greater than 50% of the floor area, taking into consideration previous additions approved on or after the date of certification of the LUP.

B. Development that consists of any alteration of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction, as per National Flood Insurance Program (NFIP) requirements administered by the Federal Emergency Management Agency (FEMA).

For the purposes of this definition:

An exterior wall is considered to be altered 50% or more when any of the following occur either above or below grade:

(a) Exterior cladding and/or framing systems are altered in a manner that requires removal and/or replacement of 50% or more of the elements of those cladding and framing systems, normally considered as linear length of wall.

(b) Reinforcement is needed for any remaining portions of the wall to provide structural support in excess of 50% of existing support elements (e.g. addition of 50% or more of beams, shear walls, or studs whether alone or alongside the existing/retained elements).

A floor or roof structure is considered to be altered 50% or more when any of the following occur:

(a) The roof or floor framing is altered in a manner that requires removal and/or replacement of structural elements (e.g. trusses, joists, rafters) supporting 50% or more of the square footage of the roof or floor.

(b) The roof or floor structural framing system requires additional reinforcement to any remaining portions of the roof or floor system to provide structural support (e.g. addition of 50% or more of beams, joists, and/or rafters, etc., whether alone or alongside existing/retained system elements).

A foundation is considered to be altered 50% or more when any work is done on any of the following:

(a) 50% or more of the horizontal surface area of a slab foundation.

(b) 50% or more of the floor area of a structure supported by a pier/post and/or caisson/grade beam foundation.

(c) 50% or more of a perimeter foundation.

Major structural component alterations generally do not include changes to roof coverings; replacement of glass or doors in existing window or door openings; replacement of window or door framing when the size and location of the window/door remains unchanged; repair of roofs or foundations without any change to structural supporting elements; changes to exterior siding; repair, maintenance, and replacement of chimneys; and interior changes to non structural interior walls and sheetrock, insulation, fixtures, and mechanical, electrical and plumbing elements.