

## APPENDIX E:

## GLOSSARY

Acceleration	The rate of change of velocity with respect to time. Acceleration due to gravity at the earth's surface is 9.8 meters per second squared. That means that every second that something falls toward the surface of earth its velocity increases by 9.8 meters per second.
Active fault	According to Alquist-Priolo Earthquake Fault Zoning Act (APEFZA)'s requirements, an active fault is one that shows evidence of, or is suspected of having experienced surface displacement within the last 11,000 years. APEFZA classification is designed for land use management of surface rupture hazards. A more general definition (National Academy of Science, 1988), states "a fault that on the basis of historical, seismological, or geological evidence has the finite probability of producing an earthquake" (see potentially active fault).
Adjacent grade	Elevation of the natural or graded ground surface, or structural fill, abutting the walls of a building. See <i>highest adjacent grade</i> and <i>lowest adjacent grade</i> .
Aftershocks	Minor earthquakes following a greater one and originating at or near the same place.
Aggradation	The building up of earth's surface by deposition of sediment.
Alluvial	Pertaining to, or composed of alluvium, or deposited by a stream or running water.
Alluvium	Surficial sediments of poorly consolidated gravels, sand, silts, and clays deposited by flowing water.
Amplitude	The height of a wave between its crest (high point) and its mid-point.
Anchor	To secure a structure to its footings or foundation wall in such a way that a continuous load transfer path is created and so that it will not be displaced by flood, wind, or seismic forces.
Apparatus	Fire apparatus includes firefighting vehicles of various types.
Appurtenant structure	Under the <i>National Flood Insurance Program</i> , a structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental.
Aquifer	A body of rock or sediment that contains sufficient saturated permeable material to allow the flow of groundwater and to yield economically significant quantities of groundwater to wells and springs.
Argillic	Alteration in which certain minerals of a rock or sediments are converted to clay.
Armor	To protect slopes from <i>erosion</i> and <i>scour</i> by <i>flood</i> waters. Techniques of armoring include the use of riprap, gabions, or concrete.
Artesian	An adjective referring to ground water confined under hydrostatic pressure. The water level in wells drilled into an <i>artesian</i> aquifer (also called a confined aquifer) will stand at some height above the top of the aquifer. If the water reaches the ground surface the well is a "flowing" <i>artesian</i> well.
Aspect	The direction a slope faces.

Asset	Any man-made or natural feature that has value, including, but not limited to people, buildings, infrastructure like bridges, roads, and sewer and water systems; lifelines like electricity and communication resources; or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks.
Attenuation	The reduction in amplitude of a wave with time or distance traveled.
Automatic aid agreement	An agreement between two or more agencies whereby such agencies are automatically dispatched simultaneously to predetermined types of emergencies in predetermined areas.
A zone	Under the <i>National Flood Insurance Program</i> , area subject to inundation by the 100-year flood where wave action does not occur or where waves are less than 3 feet high, designated Zone A, AE, AI-A30, A0, AH, or AR on a <i>Flood Insurance Rate Map (FIRM)</i> .
Base flood	Flood that has a 1 percent probability of being equaled or exceeded in any given year. Also known as the 100-year flood.
Base Flood Elevation (BFE)	Elevation of the base flood in relation to a specified datum, such as the National Geodetic Vertical Datum of 1929. The Base Flood Elevation is used as the standard for the National Flood Insurance Program.
Basement	Under the <i>National Flood Insurance Program</i> , any area of a building having its floor subgrade on all sides. (Note: What is typically referred to as a “walkout basement,” which has a floor that is at or above grade on at least one side, is not considered a basement under the <i>National Flood Insurance Program</i> .)
Beach nourishment	Replacement of beach sand removed by ocean waters.
Beaufort scale	A scale devised in 1805 by Admiral Francis Beaufort of the British Navy to classify wind speed based on the wind’s effect on the seas and vegetation. The scale goes from 0 (calm) to 12 (hurricane).
Bedding	The arrangement of a sedimentary rock in beds or layers of varying thickness and character.
Bedrock	The solid rock that underlies loose material, such as soil, sand, clay, or gravel.
Bench	A grading term that refers to a relatively level step excavated into earth material on which fill is to be placed.
Berm	Horizontal portion of the backshore beach formed by sediments deposited by waves.
Bioregion	A major, regional ecological community characterized by distinctive life forms and distinctive plant and animal species.
Blind thrust fault	A thrust fault is a low-angle reverse fault (top block pushed over bottom block). A “blind” thrust fault refers to one that does not reach the surface.
Breakaway wall	Under the <i>National Flood Insurance Program</i> , a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system. Breakaway walls are required by the <i>National Flood Insurance Program</i> regulations for any enclosures constructed below the <i>Base Flood Elevation</i> beneath elevated buildings in <i>Coastal High Hazard Areas</i> (also referred to as <i>V zones</i> ). In addition, breakaway walls are recommended in areas where flood waters flow at high velocities or contain ice or other debris.
Brush	A collective term that refers to stands of vegetation dominated by shrubby, woody plants, or low-growing trees.

Brushfire	A fire burning in vegetation that is predominantly shrubs, brush and scrub growth.
Building	A structure that is walled and roofed, principally above ground and permanently affixed to a site. The term includes a manufactured home on a permanent foundation on which the wheels and axles carry no weight.
Building code	Regulations adopted by local governments that establish standards for construction, modification, and repair of buildings and other structures.
Built-up roof covering	Two or more layers of felt cemented together and surfaced with a cap sheet, mineral aggregate, smooth coating, or similar surfacing material.
Bulkhead	Wall or other structure, often of wood, steel, stone, or concrete, designed to retain or prevent sliding or <i>erosion</i> of the land. Occasionally, bulkheads are used to protect against wave action.
Cast-in-place concrete	Concrete that is poured and formed at the construction site.
Cladding	Exterior surface of the building envelope that is directly loaded by the wind.
Clay	A rock or mineral fragment having a diameter less than 1/256 mm (4 microns, or 0.00016 in.). Commonly applied to any soft, adhesive, fine-grained deposit.
Claystone	An indurated clay having the texture and composition of shale, but lacking its fine lamination. A massive mudstone in which clay predominates over silt.
Climate	The average condition of weather over time in a given region.
Coastal A zone	The portion of the <i>Special Flood Hazard Area</i> landward of a <i>V zone</i> or landward of an open coast without mapped <i>V zones</i> (e.g., shorelines of the Great Lakes), in which the principal sources of flooding are astronomical tides, <i>storm surge</i> , <i>seiches</i> , or <i>tsunamis</i> , not riverine sources. The <i>flood forces</i> in coastal A zones are highly correlated with coastal winds or coastal seismic activity. Coastal A zones may therefore be subject to wave effects, velocity flows, <i>erosion</i> , <i>scour</i> , or combinations of these forces. See <i>A zone</i> and <i>Non-coastal A zone</i> . (Note: the <i>National Flood Insurance Program</i> regulations do not differentiate between coastal A zones and <i>non-coastal A zones</i> .)
Coastal barrier	Depositional geologic feature such as a bay barrier, tombolo, barrier spit, or barrier island that consists of unconsolidated sedimentary materials; is subject to wave, tidal, and wind energies; and protects landward aquatic habitats from direct wave attack.
Coastal Barrier Resources Act of 1982 (CBRA)	Act (Pub. L. 97-348) that established the Coastal Barrier Resources System (CBRS). The act prohibits the provision of new flood insurance coverage on or after October 1, 1983, for any <i>new construction</i> or <i>substantial improvements</i> of structures located on any designated undeveloped coastal barrier within the CBRS. The CBRS was expanded by the Coastal Barrier Improvement Act of 1991. The date on which an area is added to the CBRS is the date of CBRS designation for that area.
Coastal flood hazard area	Area, usually along an open coast, bay, or inlet, that is subject to inundation by storm surge and, in some instances, wave action caused by storms or seismic forces.
Coastal high hazard area	Under the <i>National Flood Insurance Program</i> , an area of special flood hazard extending from offshore to the inland limit of a <i>primary frontal dune</i> along an open coast and any other area subject to high-velocity wave action from storms or seismic sources. On a <i>Flood Insurance Rate Map</i> , the Coastal High Hazard Area is designated Zone V, VE, or VI-V30. These zones designate areas subject to inundation by the <i>base flood</i> where <i>wave heights</i> or <i>wave runup depths</i> are greater than or equal to 3.0 feet.

Code official	Officer or other designated authority charged with the administration and enforcement of the code, or a duly authorized representative, such as a building, zoning, planning, or <i>floodplain management</i> official.
Column foundation	Foundation consisting of vertical support members with a height-to-least-lateral-dimension ratio greater than three. Columns are set in holes and backfilled with compacted material. They are usually made of concrete or masonry and often must be braced. Columns are sometimes known as posts, particularly if the column is made of wood.
Community at Risk	Wildland interface community in the vicinity of Federal lands that is at high risk from wildfire.
Community Rating System (CRS)	An NFIP (National Flood Insurance Program) program that provides incentives for NFIP communities to complete activities that reduce flood hazard risk. When the community completes specified activities, the insurance premiums of policyholders in these communities are reduced.
Complex fire	Two or more individual incidents located in the same general area and assigned to a single incident commander or unified command.
Computer-Aided Design And Drafting (CADD)	A computerized system enabling quick and accurate electronic 2-D and 3-D drawings, topographic mapping, site plans, and profile/cross-section drawings.
Concrete Masonry Unit (CMU)	Building unit or block larger than 12 inches by 4 inches by 4 inches made of cement and suitable aggregates.
Conglomerate	A coarse-grained sedimentary rock composed of rounded to subangular fragments larger than 2 mm in diameter set in a fine-grained matrix of sand or silt, and commonly cemented by calcium carbonate, iron oxide, silica or hardened clay. The consolidated equivalent of gravel.
Connector	Mechanical device for securing two or more pieces, parts, or members together, including anchors, wall ties, and fasteners.
Consolidation	Any process whereby loosely aggregated, soft earth materials become firm and cohesive rock. Also the gradual reduction in volume and increase in density of a soil mass in response to increased load or effective compressive stress, such as the squeezing of fluids from pore spaces.
Contour	A line of equal ground elevation on a topographic (contour) map.
Contraction joint	Groove that is formed, sawed, or tooled in a concrete structure to create a weakened plane and regulate the location of cracking resulting from the dimensional change of different parts of the structure. See <i>Isolation joint</i> .
Corrosion-resistant metal	Any nonferrous metal or any metal having an unbroken surfacing of nonferrous metal, or steel with not less than 10 percent chromium or with not less than 0.20 percent copper.
Coseismic rupture	Ground rupture occurring during an earthquake but not necessarily on the causative fault.
Critical facility	Facilities that are critical to the health and welfare of the population and that are especially important following hazard events. Critical facilities include, but are not limited to, shelters, police and fire stations, and hospitals.
Dead load	Weight of all materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, <i>cladding</i> , and other similarly incorporated architectural and structural items and fixed service equipment. See <i>Loads</i> .

Debris	(Seismic) The scattered remains of something broken or destroyed; ruins; rubble; fragments. (Flooding, Coastal) Solid objects or masses carried by or floating on the surface of moving water.
Debris burning	Any fire originally set for the purpose of clearing land or for burning rubbish, garbage, range, stubble or meadow burning.
Debris impact loads	Loads imposed on a structure by the impact of floodborne debris. These loads are often sudden and large. Though difficult to predict, debris impact loads must be considered when structures are designed and constructed. See <i>Loads</i> .
Debris flow	A saturated, rapidly moving saturated earth flow with 50 percent rock fragments coarser than 2 mm in size which can occur on natural and graded slopes.
Debris line	Line left on a structure or on the ground by the deposition of debris. A debris line often indicates the height or inland extent reached by <i>flood</i> waters.
Deck	Exterior floor supported on at least two opposing sides by an adjacent structure and/or posts, piers, or other independent supports.
Defensible space	An area, either natural or manmade, where material capable of causing a fire to spread has been treated, cleared, reduced, or changed in order to provide a barrier between an advancing wildland fire and the loss to life, property, or resources. In practice, defensible space is defined as an area with a minimum of 100 feet around a structure that is cleared of flammable brush or vegetation. Distance from the structure and the degree of fuels treatment vary with vegetation type, slope, density, and other factors.
Deflected canyons	A relatively spontaneous diversion in the trend of a stream or canyon caused by any number of processes, including folding and faulting.
Deformation	A general term for the process of folding, faulting, shearing, compression, or extension of rocks.
Design flood	The greater of either (1) the <i>base flood</i> or (2) the <i>flood</i> associated with the <i>flood hazard area</i> depicted on a community's flood hazard map, or otherwise legally designated.
Design Flood Elevation (DFE)	Elevation of the <i>design flood</i> , or the flood protection elevation required by a community, including wave effects, relative to the <i>National Geodetic Vertical Datum</i> , <i>North American Vertical Datum</i> , or other datum.
Design flood protection depth	Vertical distance between the eroded ground elevation and the <i>Design Flood Elevation</i> .
Design stillwater flood depth	Vertical distance between the eroded ground elevation and the <i>design stillwater flood elevation</i> .
Design stillwater flood elevation	Stillwater elevation associated with the <i>design flood</i> , excluding wave effects, relative to the <i>National Geodetic Vertical Datum</i> , <i>North American Vertical Datum</i> , or other datum.
Development	Under the <i>National Flood Insurance Program</i> , any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operations or storage of equipment or materials
Differential settlement	Non-uniform settlement; the uneven lowering of different parts of an engineered structure, often resulting in damage to the structure. Sometimes included with liquefaction as ground failure phenomenon.

Digitize	To convert electronically points, lines, and area boundaries shown on maps into x, y coordinates (e.g., latitude and longitude, universal transverse mercator (UTM), or table coordinates) for use in computer applications.
Dike	A tabular shaped, igneous intrusion that cuts across bedding of the surrounding rock. An embankment to confine or control water, often built along the banks of a river to prevent overflow of lowlands. A levee.
Dispatch	The implementation of a command decision to move a resource or resources from one place to another.
Displacement	The length, measured in kilometers, of the total movement that has occurred along a fault over as long as the geologic record reveals.
Displacement time	The average time (in days) which the building's occupants typically must operate from a temporary location while repairs are made to the original building due to damages resulting from a hazard event.
DMA 2000	Disaster Mitigation Act of 2000. Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by Public Law 106-390, October 30, 2000. DMA 2000 is intended to establish a continuing means of assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and damage which result from disasters by (1) revising and broadening the scope of existing disaster relief programs; (2) encouraging the development of comprehensive disaster preparedness and assistance plans, programs, capabilities, and organizations by the States and by local governments; (3) achieving greater coordination and responsiveness of disaster preparedness and relief programs; (4) encouraging individuals, States, and local governments to protect themselves by obtaining insurance coverage to supplement or replace governmental assistance; (5) encouraging hazard mitigation measures to reduce losses from disasters, including development of land use and construction regulations; and (6) providing Federal assistance programs for both public and private losses sustained in disasters.
Dune	See <i>Frontal dune</i> and <i>Primary frontal dune</i> .
Dune toe	Junction of the gentle slope seaward of the dune and the dune face, which is marked by a slope of 1 on 10 or steeper.
Duration	How long a hazard event lasts.
Dynamic analysis	A complex earthquake-resistant engineering design technique (UBC - used for critical facilities) capable of modeling the entire frequency spectra, or composition, of ground motion. The method is used to evaluate the stability of a site or structure by considering the motion from any source or mass, such as that dynamic motion produced by machinery or a seismic event.
Earth flow	Imperceptibly slow-moving surficial material in which 80 percent or more of the fragments are smaller than 2 mm, including a range of rock and mineral fragments.
Earthquake	Vibratory motion propagating within the Earth or along its surface caused by the abrupt release of strain from elastically deformed rock by displacement along a fault.
Earth's crust	The outermost layer or shell of the Earth.
Effective Flood Insurance Rate Map (FIRM)	See <i>Flood Insurance Rate Map</i> .

El Niño	Phenomenon that originates, every few years, typically in December or early January, in the southern Pacific Ocean, off of the western coast of South America, characterized by warmer than usual water. This warmer water is statistically linked with increased rainfall in both the southeastern and southwestern United States, droughts in Australia, western Africa and Indonesia, reduced number of earthquakes in the Atlantic Ocean, and increased number of hurricanes in the Eastern Pacific.
Enclosure	That portion of an elevated building below the <i>Design Flood Elevation (DFE)</i> that is partially or fully surrounded by solid (including breakaway) walls.
Encroachment	Any physical object placed in a floodplain that hinders the passage of water or otherwise affects the flood flows. To develop at the edge of a forest or otherwise undeveloped lands.
Engineering geologist	A geologist who is certified by the State as qualified to apply geologic data, principles, and interpretation to naturally occurring earth materials so that geologic factors affecting planning, design, construction, and maintenance of civil engineering works are properly recognized and used. An engineering geologist is particularly needed to conduct investigations, often with geotechnical engineers, of sites with potential ground failure hazards.
Epicenter	The point at the Earth's surface directly above where an earthquake originated.
Episodic erosion	Erosion induced by a single storm event. Episodic erosion considers the vertical component of two factors: general beach profile lowering and localized conical scour around foundation supports. Episodic erosion is relevant to foundation embedment depth and potential undermining. See <i>Erosion</i> .
Erodible soil	Soil subject to wearing away and movement due to the effects of wind, water, or other geological processes during a flood or storm or over a period of years.
Erosion	Under the <i>National Flood Insurance Program</i> , the process of the gradual wearing away of landmasses. In general, erosion involves the detachment and movement of soil and rock fragments, during a flood or storm or over a period of years, through the action of wind, water, or other geologic processes.
Erosion analysis	Analysis of the short- and long-term <i>erosion</i> potential of soil or strata, including the effects of wind action, <i>flooding</i> or <i>storm surge</i> , moving water, wave action, and the interaction of water and structural components.
Erosion hazard area	Area anticipated to be lost to shoreline retreat over a given period of time. The projected inland extent of the area is measured by multiplying the average annual long-term recession rate by the number of years desired.
Essential facility	Elements that are important to ensure a full recovery of a community or state following a hazard event. These would include: government functions, major employers, banks, schools, and certain commercial establishments, such as grocery stores, hardware stores, and gas stations.
Evacuation	Movement of people from an area, typically their homes, to another area considered to be safe, typically in response to a natural or man-made disaster that makes an area unsafe for people.
Expansive soil	A soil that contains clay minerals that take in water and expand. If a soil contains sufficient amount of these clay minerals, the volume of the soil can change significantly with changes in moisture, with resultant structural damage to structures founded on these materials.

Extent	The size of an area affected by a hazard or hazard event.
Extratropical cyclone	Cyclonic storm events like Nor'easters and severe winter low-pressure systems. Both West and East coasts can experience these non-tropical storms that produce gale-force winds and precipitation in the form of heavy rain or snow. These cyclonic storms, commonly called Nor'easters on the East Coast because of the direction of the storm winds, can last for several days and can be very large – 1,000-mile wide storms are not uncommon.
Fault	A fracture in the continuity of a rock formation caused by a shifting or dislodging of the earth's crust, in which adjacent surfaces are differentially displaced parallel to the plane of fracture.
Fault segment	A continuous portion of a fault zone that is likely to rupture along its entire length during an earthquake.
Fault slip rate	The average long-term movement of a fault (measured in cm/year or mm/year) as determined from geologic evidence.
Federal Emergency Management Agency (FEMA)	Independent agency created in 1978 to provide a single point of accountability for all Federal activities related to disaster mitigation and emergency preparedness, response and recovery.
Federal Insurance Administration (FIA)	The component of the <i>Federal Emergency Management Agency</i> directly responsible for administering the flood insurance aspects of the <i>National Flood Insurance Program</i> .
Federal Responsibility Area (FRA)	Area within which a Federal governmental agency has the financial responsibility of preventing and suppressing fires.
Fetch	Distance over which wind acts on the water surface to generate waves.
Fill	Material such as soil, gravel, or crushed stone placed in an area to increase ground elevations or change soil properties.
Fire behavior	The manner in which a fire reacts to the influences of fuel, weather and topography.
Fire flow	The flow rate of a water supply expressed in gallons per minute (gpm), measured at 20 pounds per square inch (psi) residual pressure, that is available for fire fighting..
Fire Potential Index (FPI)	Developed by USGS and USFS to assess and map fire hazard potential over broad areas. Based on such geographic information, national policy makers and on-the-ground fire managers established priorities for prevention activities in the defined area to reduce the risk of managed and wildfire ignition and spread. Prediction of fire hazard shortens the time between fire ignition and initial attack by enabling fire managers to pre-allocate and stage suppression forces to high fire risk areas.
Fire regime	The long-term fire pattern characteristic of a region or ecosystem described using a combination of seasonality, fire return interval, size, spatial complexity, intensity, severity, and fire type.
Fire resistant	A characteristic of a plant species that allows individuals to resist damage or mortality during a fire. Also used to describe construction materials that resist damage to fire.
Fire weather	The weather conditions that influence fire behavior, including air temperature, atmospheric moisture, atmospheric instability, clouds and precipitation.
First responders	A group designated by the community as those who may be first to arrive at the scene of a fire, accident, or chemical release.

Five (500)-year flood	Flood that has as 0.2-percent probability of being equaled or exceeded in any given year.
Flash flood	A flood event occurring with little or no warning where water levels rise at an extremely fast rate.
Flood	<p>A rising body of water, as in a stream or lake, which overtops its natural and artificial confines and covers land not normally under water. Under the <i>National Flood Insurance Program</i>, either (a) a general and temporary condition or partial or complete inundation of normally dry land areas from:</p> <ul style="list-style-type: none"> <li>(1) the overflow of inland or tidal waters,</li> <li>(2) the unusual and rapid accumulation or runoff of surface waters from any source, or</li> <li>(3) mudslides (i.e., mudflows) which are proximately caused by flooding as defined in (2) and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when the earth is carried by a current of water and deposited along the path of the current,</li> </ul> <p>or (b) the collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in (1), above.</p>
Flood-damage-resistant material	Any construction material capable of withstanding direct and prolonged contact (i.e., at least 72 hours) with floodwaters without suffering significant damage (i.e., damage that requires more than cleanup or low-cost cosmetic repair, such as painting).
Flood depth	Height of the flood-water surface above the ground surface.
Flood elevation	Height of the water surface above an established elevation datum such as the <i>National Geodetic Vertical Datum</i> , <i>North American Vertical Datum</i> , or <i>mean sea level</i> .
Flood hazard area	The greater of the following: (1) the area of special flood hazard, as defined under the <i>National Flood Insurance Program</i> , or (2) the area designated as a flood hazard area on a community’s legally adopted flood hazard map, or otherwise legally designated.
Flood insurance	Insurance coverage provided under the National Flood Insurance Program.
Flood Insurance Rate Map (FIRM)	Under the <i>National Flood Insurance Program</i> , an official map of a community, on which the <i>Federal Emergency Management Agency</i> has delineated both the special hazard areas and the risk premium zones applicable to the community. (Note: The latest FIRM issued for a community is referred to as the <i>effective FIRM</i> for that community.)
Flood Insurance Study (FIS)	Under the <i>National Flood Insurance Program</i> , an examination, evaluation, and determination of <i>flood hazards</i> and, if appropriate, corresponding <i>water surface elevations</i> , or an examination, evaluation, and determination of <i>mudslide</i> (i.e., <i>mudflow</i> ) and/or <i>flood-related erosion hazards</i> in a community or communities. (Note: The <i>National Flood Insurance Program</i> regulations refer to Flood Insurance Studies as “flood elevation studies.”)
Floodplain	Any land area, including watercourse, susceptible to partial or complete inundation by water from any source.

Floodplain management	Operation of an overall program of corrective and preventive measures for reducing <i>flood</i> damage, including but not limited to emergency preparedness plans, flood control works, and <i>floodplain management regulations</i> .
Floodplain management regulations	Under the <i>National Flood Insurance Program</i> , zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as floodplain ordinance, grading ordinance, and erosion control ordinance), and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of <i>flood</i> damage prevention and reduction.
Flood-related erosion area or flood-related erosion prone area	A land area adjoining the shore of a lake or other body of water, which due to the composition of the shoreline or bank and high water levels or wind-driven currents, is likely to suffer <i>flood-related erosion</i> damage.
Floodway	The channel of a river or other watercourse, and the adjacent land areas that must be kept free of encroachment in order to discharge the base flood without cumulatively increasing the water surface elevation more than a certain height.
Flow failure	A type of liquefaction-induced failure that generally occurs in slopes greater than 3 degrees, and that is characterized by the displacement, often over tens to hundreds of feet, of blocks of soil riding on top of the liquefied substrate.
Footing	Enlarged base of a foundation wall, pier, post, or column designed to spread the load of the structure so that it does not exceed the soil bearing capacity.
Footprint	Land area occupied by a structure.
Freeboard	Under the <i>National Flood Insurance Program</i> , a factor of safety, usually expressed in feet above a <i>flood</i> level, for the purposes of <i>floodplain management</i> . Freeboard tends to compensate for the many unknown factors that could contribute to flood heights greater than the heights calculated for a selected size flood and floodway conditions, such as the hydrological effect of urbanization of the watershed.
Frequency	A measure of how often events of a particular magnitude are expected to occur. Frequency describes how often a hazard of a specific magnitude, duration, and/or extent typically occurs, on average. Statistically, a hazard with a 100-year recurrence interval is expected to occur once every 100 years on average, and would have a 1 percent chance – its probability – of happening in any given year. The reliability of this information varies depending on the kind of hazard being considered.
Frontal dune	Ridge or mound of unconsolidated sandy soil, extending continuously alongshore landward of the sand beach and defined by relatively steep slopes abutting markedly flatter and lower regions on each side.
Fuel	The source of heat that sustains the combustion process. In wildland fires, fuel is the combustible plant biomass, including grass, leaves, ground litter, shrubs, plants and trees..
Fuel load	The amount of fuel that is potentially available for combustion.
Functional downtime	The average time (in days) during which a function (business or service) is unable to provide its services due to a hazard event.
Gabion	Rock-filled cage made of wire or metal that is placed on slopes or embankments to protect them from <i>erosion</i> caused by flowing or fast-moving water.
Geographic area impacted	The physical area in which the effects of the hazard are experienced.

Geographic Information Systems (GIS)	A computer software application that relates physical features on the Earth to a database to be used for mapping and analysis.
Geomorphology	The science that treats the general configuration of the Earth's surface. The study of the classification, description, nature, origin and development of landforms, and the history of geologic changes as recorded by these surface features.
Geotechnical engineer	A licensed civil engineer who is also certified by the State as qualified for the investigation and engineering evaluation of earth materials and their interaction with earth retention systems, structural foundations, and other civil engineering works.
Grade beam	Section of a concrete slab that is thicker than the slab and acts as a footing to provide stability, often under load-bearing or critical structural walls. Grade beams are occasionally installed to provide lateral support for vertical foundation members where they enter the ground.
Grading	Any excavating or filling or combination thereof. Generally refers to the modification of the natural landscape into pads suitable as foundations for structures.
Granite	Broadly applied, any completely crystalline, quartz-bearing, plutonic rock.
Ground failure	Permanent ground displacement produced by fault rupture, differential settlement, liquefaction, or slope failure.
Ground lurching	A form of earthquake-induced ground failure where soft, saturated soils move in a wave-like manner in response to intense seismic ground shaking, forming ridges or cracks at the surface.
Ground motion	The vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter, but soft soils can further amplify ground motions
Ground oscillations	A type of liquefaction-induced failure where liquefaction occurs at depth, in an area where the ground surface is too level to permit the lateral displacement of the overlying soil blocks. The blocks instead separate from one another and oscillate above the liquefied layer. This may result in the opening and closing of fissures or cracks, and the formation of sand boils or volcanoes.
Ground rupture	Displacement of the earth's surface as a result of fault movement associated with an earthquake.
Hazard	A source of potential danger or adverse condition. Hazards in this series will include naturally occurring events such as floods, earthquakes, tornadoes, tsunami, coastal storms, landslides, and wildfires that strike populated areas. A natural event is a hazard when it has the potential to harm people or property.
Hazard event	A specific occurrence of a particular type of hazard.
Hazard identification	The process of identifying hazards that threaten an area.
Hazard mitigation	Sustained actions taken to reduce or eliminate long-term risk from hazards and their effects.
Hazard profile	A description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent. In most cases, a community can most easily use these descriptors when they are recorded and displayed as maps.

Hazards reduction	Any treatment of a hazard that reduces the threat.
HazUS (Hazards U.S.)	A GIS-based nationally standardized earthquake loss estimation tool developed by FEMA.
Highest adjacent grade	Elevation of the highest natural or regarded ground surface, or structural fill, that abuts the walls of a building.
High-velocity wave action	Condition in which <i>wave heights</i> or <i>wave runup depths</i> are greater than or equal to 3.0 feet.
Holocene	An epoch of the Quaternary period spanning from the end of the Pleistocene to the present time (the past about 11,000 years).
Hurricane	An intense tropical cyclone, formed in the atmosphere over warm ocean areas, in which wind speeds reach 74-miles-per-hour or more and blow in a large spiral around a relatively calm center or "eye." Hurricanes develop over the north Atlantic Ocean, northeast Pacific Ocean, or the south Pacific Ocean east of 160°E longitude. Hurricane circulation is counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
Hurricane clip or strap	Structural connector, usually metal, used to tie roof, wall, floor, and foundation members together so that they can resist wind forces.
Hydrocompaction	Settlement of loose, granular soils that occurs when the loose, dry structure of the sand grains held together by a clay binder or other cementing agent collapses upon the introduction of water.
Hydrodynamic loads	Loads imposed on an object, such as a building, by water flowing against and around it. Among these loads are positive frontal pressure against the structure, drag effect along the sides, and negative pressure on the downstream side.
Hydrology	The science of dealing with the waters of the earth. A flood discharge is developed by a hydrologic study.
Hydrostatic loads	Loads imposed on a surface, such as a wall or floor slab, by a standing mass of water. The water pressure increases with the square of the water depth.
Hypocenter	The earthquake focus, that is, the place at depth, along the fault plane, where an earthquake rupture started.
Igneous	Type of rock or mineral that formed from molten or partially molten magma.
Ignition point	The location of the ignition.
Ignition source	The origin or source of a fire.
Infiltration	The process by which water seeps into the soil, as influenced by soil texture, soil structure, and vegetation cover.
Infrastructure	Refers to the public services of a community that have a direct impact on the quality of life. Infrastructure includes communication technology such as phone lines or Internet access, vital services such as public water supplies and sewer treatment facilities, and includes an area's transportation system such as airports, heliports; highways, bridges, tunnels, roadbeds, overpasses, railways, bridges, rail yards, depots; and waterways, canals, locks, seaports, ferries, harbors, drydocks, piers and regional dams.
Intensity	A measure of the effects of a hazard event at a particular place.
Invasive plants	Plants that aggressively expand their ranges over the landscape, typically at the expense of native plants that are displaced or destroyed by the newcomers. Invasive species are typically considered a major threat to biological diversity.

ISO	Insurance Services Office. Private organization that formulates fire safety ratings based on fire threat and responsible agency's ability to respond to the threat. ISO ratings from one (excellent) to ten (no fire protection). Many insurance companies use ISO ratings to set insurance premiums. ISO may establish multiple ratings within a community, such as a rating of 5 in the hydranted areas and one of 8 in the non-hydranted areas.
Isolation joint	Separation between adjoining parts of a concrete structure, usually a vertical plane, at a designated location such as to interfere least with the performance of the structure, yet such as to allow relative movement in three directions and avoid formation of cracks elsewhere in the concrete and through which all or part of the bonded reinforcement is interrupted. See <i>Contraction joint</i> .
Jet stream	A relatively narrow stream of fast-moving air in the middle and upper troposphere. Surface cyclones develop and move along the jet stream.
Jetting (of piles)	Use of a high-pressure stream of water to embed a pile in sandy soil. See <i>pile foundation</i> .
Jetty	Wall built out into the water to restrain currents or protect a structure.
Joist	Any of the parallel structural members of a floor system that support, and are usually immediately beneath, the floor.
ka	Thousands of years before present.
Lacustrine flood hazard area	Area subject to inundation by <i>flooding</i> from lakes.
Landslide	A general term covering a wide variety of mass-movement landforms and processes involving the downslope transport, under gravitational influence, of soil and rock material en masse.
Lateral force	The force of the horizontal, side-to-side motion on the Earth's surface as measured on a particular mass; either a building or structure.
Lateral spreads	Lateral movements in a fractured mass of rock or soil which result from liquefaction or plastic flow or subjacent materials.
Left-lateral fault	A strike-slip fault across which a viewer would see the block on the opposite side of the fault move to the left.
Level of service standard (LOS Standard)	Quantifiable measures against which services being delivered by a service provider can be compared. Standards based upon recognized and accepted professional and county standards, while reflecting the local situation within which services are being delivered. Levels-of-service standards for fire protection may include response times, personnel per given population, and emergency water supply. LOS standards can be used to evaluate the way in which fire protection services are being delivered, for use in countywide fire planning efforts.
Lifeline system	Linear conduits or corridors for the delivery of services or movement of people and information (e.g., pipelines, telephones, freeways, railroads).
Lineament	Straight or gently curved, lengthy features of earth's surface, frequently expressed topographically as depressions or lines of depressions, scarps, benches, or change in vegetation.
Liquefaction	Changing of soils (unconsolidated alluvium) from a solid state to weaker state unable to support structures; where the material behaves similar to a liquid as a consequence of earthquake shaking. The transformation of cohesionless soils from a solid or liquid state as a result of increased pore pressure and reduced effective stress.

Litter	Recently fallen plant material that is only partially decomposed, forming a surface layer on some soils.
Littoral	Of or pertaining to the shore, especially of the sea; coastal.
Littoral drift	Movement of sand by littoral (longshore) currents in a direction parallel to the beach along the shore.
Live loads	<i>Loads</i> produced by the use and occupancy of the building or other structure. Live loads do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load, or dead load. See <i>Loads</i> .
Load-bearing wall	Wall that supports any vertical load in addition to its own weight. See <i>Non-load-bearing wall</i> .
Loads	Forces or other actions that result from the weight of all building materials, occupants and their possessions, environmental effects, differential movement, and restrained dimensional changes. Permanent loads are those in which variations over time are rare or of small magnitude. All other loads are variable loads.
Lowest adjacent grade (LAG)	Elevation of the lowest natural or re-graded ground surface, or structural fill, that abuts the walls of a building. See <i>Highest adjacent grade</i> .
Lowest floor	Under the NFIP, the lowest floor of the lowest enclosed area (including basement) of a structure.
Lowest horizontal structural member	In an elevated building, the lowest beam, <i>joist</i> , or other horizontal member that supports the building. <i>Grade beams</i> installed to support vertical foundation members where they enter the ground are not considered lowest horizontal structural members.
Ma	Millions of years before present.
Magnitude	A measure of the strength of a hazard event. The magnitude (also referred to as severity) of a given hazard event is usually determined using technical measures specific to the hazard.
Main shock	The biggest earthquake of a sequence of earthquakes that occur fairly close in time and space. Smaller shocks before the main shock are called <b>foreshocks</b> ; smaller shocks that occur after the main shock are called <b>aftershocks</b> .
Major earthquake	Capable of widespread, heavy damage up to 50+ miles from epicenter; generally near Magnitude range 6.5 to 7.0 or greater, but can be less, depending on rupture mechanism, depth of earthquake, location relative to urban centers, etc
Manufactured home	Under the <i>National Flood Insurance Program</i> , a <i>structure</i> , transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured home” does not include a “recreational vehicle.”
Marsh	Wetland dominated by herbaceous or non-woody plants often developing in shallow ponds or depressions, river margins, tidal areas, and estuaries.
Masonry	Built-up construction of combination of building units or materials of clay, shale, concrete, glass, gypsum, stone, or other
Maximum Magnitude Earthquake (Mmax)	The highest magnitude earthquake a fault is capable of producing based on physical limitations, such as the length of the fault or fault segment.

Maximum Probable Earthquake (MPE)	The design size of the earthquake expected to occur within a time frame of interest, for example within 30 years or 100 years, depending on the purpose, lifetime or importance of the facility. Magnitude/frequency relationships are based on historic seismicity, fault slip rates, or mathematical models. The more critical the facility, the longer the time period considered.
Metamorphic rock	A rock whose original mineralogy, texture, or composition has been changed due to the effects of pressure, temperature, or the gain or loss of chemical components.
Mean sea level (MSL)	Average height of the sea for all stages of the tide, usually determined from hourly height observations over a 19-year period on an open coast or in adjacent waters having free access to the sea. See <i>National Geodetic Vertical Datum</i> .
Metal roof panel	Interlocking metal sheet having a minimum installed weather exposure of 3 square feet per sheet.
Metal roof shingle	Interlocking metal sheet having an installed weather exposure less than 3 square feet per sheet.
Mitigation	Any action taken to reduce or permanently eliminate the long-term risk to life and property from natural hazards.
Mitigation directorate	Component of <i>Federal Emergency Management Agency</i> directly responsible for administering the flood hazard identification and <i>floodplain management</i> aspects of the <i>National Flood Insurance Program</i> .
Mitigation plan	A systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards typically present in the state and includes a description of actions to minimize future vulnerability to hazards.
Moderate earthquake	Capable of causing considerable to severe damage, generally in the range of Magnitude 5.0 to 6.0 (Modified Mercalli Intensity <VI), but highly dependent on rupture mechanism, depth of earthquake, and location relative to urban center, etc.
National Flood Insurance Program (NFIP)	Federal program created by Congress in 1968 that makes <i>flood</i> insurance available in communities that enact and enforce satisfactory <i>floodplain management regulations</i> .
National Geodetic Vertical Datum of 1929 (NGVD)	Datum established in 1929 and used as a basis for measuring flood, ground, and structural elevations, previously referred to as Sea Level Datum or <i>Mean Sea Level</i> . The <i>Base Flood Elevations</i> shown on most of the <i>Flood Insurance Rate Maps</i> issued by the <i>Federal Emergency Management Agency</i> are referenced to NGVD or, more recently, to the <i>North American Vertical Datum</i> .
National Weather Service (NWS)	Prepares and issues flood, severe weather, and coastal storm warnings and can provide technical assistance to Federal and state entities in preparing weather and flood warning plans.
Naturally decay-resistant wood	Wood whose composition provides it with some measure of resistance to decay and attack by insects, without preservative treatment (e.g., heartwood of cedar, black locust, black walnut, and redwood).
Near-field earthquake	Used to describe a local earthquake within approximately a few fault zone widths of the causative fault which is characterized by high frequency waveforms that are destructive to above-ground utilities and short period structures (less than about two or three stories).

New construction	For the purpose of determining flood insurance rates under the <i>National Flood Insurance Program</i> , structures for which the start of construction commenced on or after the effective date of the initial <i>Flood Insurance Rate Map</i> or after December 31, 1974, whichever is later, including any subsequent improvements to such structures. (See <i>Post-FIRM structure</i> .) For <i>floodplain management</i> purposes, new construction means structures for which the start of construction commenced on or after the effective date of a <i>floodplain management regulation</i> adopted by a community and includes any subsequent improvements to such structures.
Non-coastal A zone	The portion of the <i>Special Flood Hazard Area</i> in which the principal source of flooding is runoff from rainfall, snowmelt, or a combination of both. In non-coastal A zones, flood waters may move slowly or rapidly, but waves are usually not a significant threat to buildings. See <i>A zone</i> and <i>coastal A zone</i> . (Note: the <i>National Flood Insurance Program</i> regulations do not differentiate between non-coastal A zones and <i>coastal A zones</i> .)
Non-load-bearing wall	Wall that does not support vertical loads other than its own weight. See <i>Load-bearing wall</i> .
Nor'easter	An extra-tropical cyclone producing gale-force winds and precipitation in the form of heavy snow or rain.
North American Vertical Datum (NAVD)	Datum used as a basis for measuring flood, ground, and structural elevations. NAVD is used in many recent <i>Flood Insurance Studies</i> rather than the <i>National Geodetic Vertical Datum</i> .
Oblique – reverse fault	A fault that combines some strike-slip motion with some dip-slip motion in which the upper block, above the fault plane, moves up over the lower block.
Offset ridge	A ridge that is discontinuous on account of faulting.
Offset stream	A stream displaced laterally or vertically by faulting
(One) 100-year flood	See <i>Base flood</i> .
Oriented strand board (OSB)	Mat-formed wood structural panel product composed of thin rectangular wood strands or wafers arranged in oriented layers and bonded with waterproof adhesive.
Outflow	Follows water inundation creating strong currents that rip at structures and pound them with debris, and erode beaches and coastal structures.
Paleoseismic	Pertaining to an earthquake or earth vibration that happened decades, centuries, or millennia ago.
Peak Ground Acceleration (PGA)	The greatest amplitude of acceleration measured for a single frequency on an earthquake accelerogram. The maximum horizontal ground motion generated by an earthquake. The measure of this motion is the acceleration of gravity (equal to 32 feet per second squared, or 980 centimeter per second squared), and generally expressed as a percentage of gravity.
Peak flood	The highest discharge or stage value of a flood.
Pedogenic	Pertaining to soil formation.
Perched ground water	Unconfined ground water separated from an underlying main body of ground water by an unsaturated zone.
Planimetric	Describes maps that indicate only man-made features like buildings.
Planning	The act or process of making or carrying out plans; the establishment of goals, policies and procedures for a social or economic unit.
Plutonic	Pertaining to igneous rocks formed at great depth.

Plywood	Wood structural panel composed of plies of wood veneer arranged in cross-aligned layers. The plies are bonded with an adhesive that cures on application of heat and pressure.
Pore pressure	The stress transmitted by the fluid that fills the voids between particles of a soil or rock mass.
Post foundation	Foundation consisting of vertical support members set in holes and backfilled with compacted material. Posts are usually made of wood and usually must be braced. Posts are also known as columns, but columns are usually made of concrete or masonry.
Post-FIRM structure	For purposes of determining insurance rates under the <i>National Flood Insurance Program</i> , structures for which the <i>start of construction</i> commenced on or after the effective date of an initial <i>Flood Insurance Rate Map</i> or after December 31, 1974, whichever is later, including any subsequent improvements to such structures. This term should not be confused with the term <i>new construction</i> as it is used in <i>floodplain management</i> .
Potentially active fault	A fault showing evidence of movement within the last 1.6 million years (750,000 years according to the U.S. Geological Survey) but before about 11,000 years ago, and that is capable of generating damaging earthquakes.
Precast concrete	Structural concrete element cast elsewhere than its final position in the structure. See <i>Cast-in-place concrete</i> .
Pressure-treated wood	Wood impregnated under pressure with compounds that reduce the susceptibility of the wood to flame spread or to deterioration caused by fungi, insects, or marine borers.
Primary frontal dune	Under the <i>National Flood Insurance Program</i> , a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.
Probability	A statistical measure of the likelihood that a hazard event will occur.
Project	A development application involving zone changes, variances, conditional use permits, tentative parcel maps, tentative tract maps, and plan amendments.
Quaternary	The second period of the Cenozoic era, consisting of the Pleistocene and Holocene epochs; covers the last approximately two million years.
Recurrence interval	The time between earthquakes of a given magnitude, or within a given magnitude range, on a specific fault or within a specific area.
Reinforced concrete	Structural concrete reinforced with steel bars.
Repetitive loss property	A property that is currently insured for which two or more National Flood Insurance Program losses (occurring more than ten days apart) of at least \$1000 each have been paid within any 10-year period since 1978.
Replacement value	The cost of rebuilding a structure. This is usually expressed in terms of cost per square foot, and reflects the present-day cost of labor and materials to construct a building of a particular size, type and quality.
Resonance	Amplification of ground motion frequencies within bands matching the natural frequency of a structure and often causing partial or complete structural collapse; effects may demonstrate minor damage to single-story residential structures while adjacent 3- or 4-story buildings may collapse because of corresponding frequencies, or vice versa.

Response spectra	The range of potentially damaging frequencies of a given earthquake applied to a specific site and for a particular building or structure.
Retrofit	Any change made to an existing structure to reduce or eliminate damage to that structure from flooding, erosion, high winds, earthquakes, or other hazards
Revetment	Facing of stone, cement, sandbags, or other materials placed on an earthen wall or embankment to protect it from erosion or scour caused by flood waters or wave action.
Richter scale	A numerical scale of earthquake magnitude devised by seismologist C.F. Richter in 1935. Seismologists no longer use this magnitude scale because of limitations in how it measures large earthquakes, and prefer instead to use moment magnitude as a measure of the energy released during an earthquake.
Right-lateral fault	A strike-slip fault across which a viewer would see the block on the opposite side of the fault move to the right.
Riprap	Broken stone, cut stone blocks, or rubble that is placed on slopes to protect them from erosion or scour caused by flood waters or wave action.
Risk	The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate or low likelihood of sustaining damage above a particular threshold due to a specific type of hazard event. It also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.
Riverine	Of or produced by a river.
Roof deck	Flat or sloped roof surface not including its supporting members or vertical supports.
Sand boil	An accumulation of sand resembling a miniature volcano or low volcanic mound produced by the expulsion of liquefied sand to the sediment surface. Also called sand blows, and sand volcanoes.
Sand dunes	Under the <i>National Flood Insurance Program</i> , natural or artificial ridges or mounds of sand landward of the beach.
Sandstone	A medium-grained, clastic sedimentary rock composed of abundant rounded or angular fragments of sand size set in a fine-grained matrix and more or less firmly united by a cementing material.
Saturated	Said of the condition in which the interstices of a material are filled with a liquid, usually water.
Scale	A proportion used in determining a dimensional relationship; the ratio of the distance between two points on a map and the actual distance between the two points on the earth's surface.
Scarp	A steep slope. A line of cliffs produced by faulting or by erosion. The term is an abbreviated form of escarpment.
Scour	Removal of soil or fill material by the flow of floodwaters. The term is frequently used to describe storm-induced, localized conical erosion around pilings and other foundation supports where the obstruction of flow increases turbulence.
Seawall	Solid barricade built at the water's edge to protect the shore and to prevent inland flooding.

Sediment	Solid fragmental material that originates from weathering of rocks and is transported or deposited by air, water, ice, or that accumulates by other natural agents, such as chemical precipitation from solution, and that forms in layers on the Earth's surface in a loose, unconsolidated form.
Seiche	A free or standing-wave oscillation of the surface of water in an enclosed or semi-enclosed basin (such as a lake, bay, or harbor), that is initiated chiefly by local changes in atmospheric pressure, aided by winds, tidal currents, and earthquakes, and that continues, pendulum-fashion, for a time after cessation of the originating force.
Seismicity	Describes the likelihood of an area being subject to earthquakes.
Seismogenic	Capable of producing earthquake activity.
Seismograph	An instrument that detects, magnifies, and records vibrations of the Earth, especially earthquakes. The resulting record is a seismogram.
Shearwall	<i>Load-bearing wall</i> or <i>non-load-bearing wall</i> that transfers in-plane lateral forces from lateral loads acting on a structure to its foundation.
Shoreline retreat	Progressive movement of the shoreline in a landward direction caused by the composite effect of all storms considered over decades and centuries (expressed as an annual average <i>erosion</i> rate). Shoreline retreat considers the horizontal component of <i>erosion</i> and is relevant to long-term land use decisions and the siting of buildings.
Shutter ridge	That portion of an offset ridge that blocks or “shutters” the adjacent canyon.
Silt	A rock fragment or detrital particle smaller than a very fine sand grain and larger than coarse clay, having a diameter in the range of 1/256 to 1/16 mm (4-62 microns, or 0.00016-0.0025 in.). An indurated silt having the texture and composition of shale but lacking its fine lamination is called a siltstone.
Single-ply membrane	Roofing membrane that is field-applied with one layer of membrane material (either homogeneous or composite) rather than multiple layers.
Sixty (60)-year setback	A state or local requirement that prohibits new construction and certain improvements and repairs to existing coastal buildings located in an area expected to be lost to <i>shoreline retreat</i> over a 60-year period. The inland extent of the area is equal to 60 times the average annual long-term recession rate at a site, measured from a reference feature.
Slope ratio	Refers to the angle or gradient of a slope as the ratio of horizontal units to vertical units. For example, in a 2:1 slope, for every two horizontal units, there is a vertical rise of one unit (equal to a slope angle, from the horizontal, of 26.6 degrees).
Slump	A landslide characterized by a shearing and rotary movement of a generally independent mass of rock or earth along a curved slip surface.
Soil horizon	A layer of soil that is distinguishable from adjacent layers by characteristic physical properties such as structure, color, or texture.
Special Flood Hazard Area (SFHA)	Under the <i>National Flood Insurance Program</i> , an area having special <i>flood</i> , <i>mudslide</i> (i.e., <i>mudflow</i> ) and/or flood-related erosion hazards, and shown on a Flood Hazard Boundary Map or <i>Flood Insurance Rate Map</i> as Zone A, AO, AI-A30, AE, A99, AH, V, VI-V30, VE, M or E.

Stafford Act	The Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-107 was signed into law November 23, 1988 and amended the Disaster Relief Act of 1974, PL 93-288. The Stafford Act is the statutory authority for most Federal disaster response activities, especially as they pertain to FEMA and its programs.
Start of construction	Under the <i>National Flood Insurance Program</i> , date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a <i>substantial improvement</i> , the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.
State Coordinating Agency	Under the <i>National Flood Insurance Program</i> , the agency of the state government, or other office designated by the Governor of the state or by state statute to assist in the implementation of the <i>National Flood Insurance Program</i> in that state.
State Hazard Mitigation Officer (SHMO)	The representative of state government who is the primary point of contact with FEMA, other state and Federal agencies, and local units of government in the planning and implementation of pre- and postdisaster mitigation activities.
Stillwater elevation	Projected elevation that flood waters would assume, referenced to the <i>National Geodetic Vertical Datum</i> , <i>North American Vertical Datum</i> , or other datum, in the absence of waves resulting from wind or seismic effects.
Storage capacity	Dam storage measured in acre-feet or decameters, including dead storage.
Storm surge	Rise in the water surface above normal water level on the open coast due to the action of wind stress and atmospheric pressure on the water surface.
Storm tide	Combined effect of <i>storm surge</i> , existing astronomical tide conditions, and breaking <i>wave setup</i> .
Strike-slip fault	A fault with a vertical to sub-vertical fault surface that displays evidence of horizontal and opposite displacement.
Structural concrete	All concrete used for structural purposes, including <i>plain concrete</i> and <i>reinforced concrete</i> .
Structural engineer	A licensed civil engineer certified by the State as qualified to design and supervise the construction of engineered structures.
Structural fill	Fill compacted to a specified density to provide structural support or protection to a <i>structure</i> . See <i>Fill</i> .

Structure	Something constructed, such as a building, or part of one. For <i>floodplain management</i> purposes under the <i>National Flood Insurance Program</i> , a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. For insurance coverage purposes under the NFIP, structure means a walled and roofed building, other than a gas or liquid storage tank, that is principally above ground and affixed to a permanent site, as well as a <i>manufactured home</i> on a permanent foundation. For the latter purpose, the term includes a building while in the course of construction, alteration, or repair, but does not include building materials or supplies intended for use in such construction, alteration, or repair, unless such materials or supplies are within an enclosed building on the premises.
Subsidence	The sudden sinking or gradual downward settling of the Earth's surface with little or no horizontal motion.
Substantial damage	Damage of any origin sustained by a structure in a Special Flood Hazard Area whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage.
Substantial improvement	Under the <i>National Flood Insurance Program</i> , any reconstruction, rehabilitation, addition, or other improvement of a <i>structure</i> , the cost of which equals or exceeds 50 percent of the market value of the structure before the <i>start of construction</i> of the improvement. This term includes structures, which have incurred <i>substantial damage</i> , regardless of the actual repair work performed. The term does not, however, include either (1) any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or (2) any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as a "historic structure."
Super typhoon	A typhoon with maximum sustained winds of 150 mph or more.
Surface faulting	The differential movement of two sides of a fracture – in other words, the location where the ground breaks apart. The length, width, and displacement of the ground characterize surface faults.
Surge	See <i>Storm surge</i> .
Swale	In hillside terrace, a shallow drainage channel, typically with a rounded depression or "hollow" at the head.
Tectonic plate	Torsionally rigid, thin segments of the earth's lithosphere that may be assumed to move horizontally and adjoin other plates. It is the friction between plate boundaries that cause seismic activity.
Thirty (30)-year erosion setback	A state or local requirement that prohibits new construction and certain improvements and repairs to existing coastal buildings located in an area expected to be lost to <i>shoreline retreat</i> over a 30-year period. The inland extent of the area is equal to 30 times the average annual long-term recession rate at a site, measured from a reference feature.
Thrust fault	A fault, with a relatively shallow dip, in which the upper block, above the fault plane, moves up over the lower block.
Topographic	Characterizes maps that show natural features and indicate the physical shape of the land using contour lines. These maps may also include manmade features.

Tornado	A violently rotating column of air extending from a thunderstorm to the ground.
Transform system	A system in which faults of plate-boundary dimensions transform into another plate-boundary structure when it ends.
Transpression	In crustal deformation, an intermediate stage between compression and strike-slip motion; it occurs in zones with oblique compression.
Tropical cyclone	A generic term for a cyclonic, low-pressure system over tropical or subtropical waters.
Tropical depression	A tropical cyclone with maximum sustained winds of less than 39 mph.
Tropical disturbance	Tropical cyclone that maintains its identity for at least 24 hours and is marked by moving thunderstorms and with slight or no rotary circulation at the water surface. Winds are not strong. It is a common phenomenon in the tropics and is the first discernable stage in the development of a <i>hurricane</i> .
Tropical storm	A tropical cyclone with maximum sustained winds greater than 39 mph and less than 74 mph.
Tsunami	Great sea wave produced by a submarine earthquake, landslide, or volcanic eruption.
Typhoon	A special category of tropical cyclone peculiar to the western North Pacific Basin, frequently affecting areas in the vicinity of Guam and the North Mariana Islands. Typhoons whose maximum sustained winds attain or exceed 150 mph are called super typhoons.
Unconfined aquifer	Aquifer in which the upper surface of the saturated zone is free to rise and fall.
Unconsolidated sediments	A deposit that is loosely arranged or unstratified, or whose particles are not cemented together, occurring either at the surface or at depth.
Underlayment	One or more layers of felt, sheathing paper, non-bituminous saturated felt, or other approved material over which a steep-sloped roof covering is applied.
Undermining	Process whereby the vertical component of erosion or scour exceeds the depth of the base of a building foundation or the level below which the bearing strength of at the foundation is compromised.
Unreinforced Masonry (URM) Structure	Structures in which there is no steel reinforcement within the masonry walls. The definition of an unreinforced masonry building can vary among jurisdictions. Some cities classify unreinforced infill walls within a reinforced frame as a URM while others classify unreinforced exterior veneers on to a wood frame as URMs.
Uplift	Hydrostatic pressure caused by water under a building. It can be strong enough lift a building off its foundation, especially when the building is not properly anchored to its foundation.
Upper bound earthquake	Defined as a 10% chance of exceedance in 100 years, with a statistical return period of 949 years.
V zone	See <i>Coastal High Hazard Area</i> .
Variance	Under the <i>National Flood Insurance Program</i> , grant of relief by a community from the terms of a <i>floodplain management regulation</i> .

Violation	Under the <i>National Flood Insurance Program</i> , the failure of a structure or other development to be fully compliant with the community’s <i>floodplain management regulations</i> . A <i>structure</i> or other <i>development</i> without the elevation certificate, other certifications, or other evidence of compliance required in Sections 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) of the NFIP regulations is presumed to be in violation until such time as that documentation is provided.
Vulnerability	Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an asset’s construction, contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power – if an electric substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Often, indirect effects can be much more widespread and damaging than direct ones.
Vulnerability assessment	The extent of injury and damage that may result from a hazard event of a given intensity in a given area. The vulnerability assessment should address impacts of hazard events on the existing and future built environment.
Watershed	A topographically defined region draining into a particular water course.
Water surface elevation	Under the <i>National Flood Insurance Program</i> , the height, in relation to the <i>National Geodetic Vertical Datum</i> of 1929 (or other datum, where specified), of <i>floods</i> of various magnitudes and frequencies in the <i>floodplains</i> of coastal or riverine areas.
Water table	The upper surface of groundwater saturation of pores and fractures in rock or surficial earth materials.
Wave	Ridge, deformation, or undulation of the water surface.
Wave crest elevation	Elevation of the crest of a wave.
Wave height	Vertical distance between the wave crest and wave trough.
Wave runup	Rush of wave water up a slope or structure.
Wave runup depth	Vertical distance between the maximum wave runup elevation and the eroded ground elevation.
Wave runup elevation	Elevation, referenced to the <i>National Geodetic Vertical Datum</i> or other datum, reached by <i>wave runup</i> .
Wave setup	Increase in the stillwater surface near the shoreline, due to the presence of breaking waves.
Wildfire	An uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.
X zone	Under the <i>National Flood Insurance Program</i> , areas where the <i>flood</i> hazard is less than that in the <i>Special Flood Hazard Area</i> . Shaded X zones shown on recent <i>Flood Insurance Rate Maps</i> (B zones on older maps) designate areas subject to inundation by the <i>500-year flood</i> . Un-shaded X zones (C zones on older <i>Flood Insurance Rate Maps</i> ) designate areas where the annual probability of flooding is less than 0.2 percent.
Zone	A geographical area shown on a Flood Insurance Rate Map (FIRM) that reflects the severity or type of flooding in the area.