

Flood Glossary

100-Year (or Base) Flood:

A flood event that statistically has a 1 out of 100 (or one percent) chance of being equaled or exceeded on a specific watercourse in any given year.

Alluvial Fan:

A geomorphologic feature characterized by a cone or fan-shaped deposit of boulders, gravel and fine sediments that have been eroded from mountain slopes, transported by flood flows and then deposited in the valley floors and which is subject to flash flooding, high velocity flows, debris flows, erosion, sediment movement and deposition and channel migration.

As Built Plans:

A community may require submission of "as-built" plans to certify that a project was built in accordance with the permit. A registered professional architect or engineer certifies the actual construction.

Base Flood Elevation:

A base flood elevation (BFE) is the height of the base flood, usually in feet, in relation to the National Geodetic Vertical Datum of 1929, the North American Vertical Datum of 1988, or other datum referenced in the Flood Insurance Study report, or the depth of the base flood, usually in feet, above the ground surface.

Braided Stream:

A stream whose flow is divided at normal stage by small islands.

Capacity:

The volume of water stored by a dam at the emergency spillway elevation, usually expressed in acre-feet. It differs from storage, which is the volume of water stored at any specific elevation.

Catch Basin:

A chamber or well, usually built at the curb line of a street, for the admission of surface water to a storm sewer or sub-drain

CFS:

The measuring unit of cubic feet per second (cfs), which is used to quantify the amount of flow in a wash. A cubic foot is equivalent to 7.5 gallons of water. Thus, 1 cfs is 7.5 gallons of water passing by you every second.

Channel:

An open conveyance of surface stormwater having a bottom and sides in a linear configuration. Channels can be natural or man-made. Channels have levees or dikes along their sides to build up their depth. Constructed channels can be plain earth, landscaped, or lined with concrete, stone, or any other hard surface to resist erosion and scour.

Community Rating System:

A program administered by the Federal Emergency Management Agency (FEMA) that recognizes and rewards communities working to reduce flood damages through a variety of approved floodplain management and flood awareness activities. Through the program, a community can reduce the flood insurance premiums that floodprone property owners pay.

Conveyance Zone:

the areas in the floodplain that are reserved for the main passage of the entire 100-year flood flow when the 100-year floodplain is artificially narrowed until a maximum six-inch increase in flood water depth is created. This zone is delineated to allow development to occur up to the narrowed floodplain and still provide passage of 100-year storm flows.

Culvert:

A hydraulically short conduit which conveys surface water runoff through a roadway embankment or through some other type of flow obstruction.

Delineation:

Defining the physical boundaries of a stream, floodplain, jurisdictional wash, etc.

Design Discharge:

The nth-year storm for which it is expected that the structure or facility is designed to accommodate.

Detention Basin:

A basin or reservoir where water is stored for regulating a flood. It has outlets for releasing the flows during the floods

Discharge:

The amount of water that passes a specific point on a watercourse over a given period of time. Rates of discharge are usually measured in cubic feet per second (cfs).

Drainage Basin:

A geographical area which contributes surface water runoff to a particular point. The terms "drainage basin," "tributary area," and "watershed" can be used interchangeably.

Elevation Certificate:

The Elevation Certificate is an important administrative tool of the National Flood Insurance Program (NFIP). It is to be used to provide elevation information necessary to ensure compliance with community floodplain management ordinances, to determine the proper insurance premium rate, and to support a request for a Letter of Map Amendment or Revision (LOMA or LOMR-F). Download the Elevation Certificate Instructions or Form from FEMA.

Embankment:

A man-made earth structure constructed for the purpose of impounding water.

Emergency Spillway:

An outflow from a detention/retention facility that provides for the safe overflow of floodwaters for large storms that exceed the design capacity of the outlet or in the event of a malfunction. The emergency spillway prevents the water from overtopping the facility.

Encroachment:

The result of placing a building, fence, berm or other structure in a floodplain in a manner that obstructs or increases the depth (or velocity) of flow on a watercourse.

Evapotranspiration:

Evapotranspiration is the sum of water lost to the air via transpiration by plants and evaporation from water surfaces.

Federally-Mapped Floodplain:

A floodprone area that has been mapped and accepted by FEMA as the result of a flood insurance study (FIS) for a watercourse and surrounding areas. Mapped floodplains are used for flood insurance needs and for other regulatory purposes.

FEMA (Federal Emergency Management Agency):

An independent federal agency established to respond to major emergencies that state and local agencies don't have the resources to handle. FEMA seeks to reduce the loss of life and protect property against all types of hazards through a comprehensive, risk-based emergency management program. [FEMA web site.](#)

Fill Material:

any material used for the primary purpose of replacing an aquatic area with dry land or for changing the bottom elevation of a waterbody. This includes both natural materials (silt, sand, gravel, rock, and wood) and manufactured materials (concrete, plastic, steel, treated wood).

Flood Control:

Various activities and regulations that help reduce or prevent damages caused by flooding. Typical flood control activities include: structural flood control works (such as bank stabilization, levees, and drainage channels), acquisition of floodprone land, flood insurance programs and studies, river and basin management plans, public education programs, and flood warning and emergency preparedness activities.

Flood Flow Frequency:

A statistically derived table of discharge vs. return period for a particular point on a stream or within a flood storage facility.

Flood Insurance Rate Map (FIRM):

Issued by FEMA, these maps show special hazard areas, including the 100-year floodplain. They also show flood insurance risk zones and other flood-related information applicable to a community.

Flood Insurance Study (FIS):

Hydrologic and Hydraulic studies that identify a flood hazard area, flood insurance risk zones and other flood data such as flood depths and velocities.

Flood Proofing:

Any combination of changes to a structure or property using berms, flood walls, closures or sealants, which reduces or eliminates flood damage to buildings or property.

Floodplain:

The area adjoining a watercourse that may be covered by floodwater during a flood.

Floodplain Management:

A program that uses corrective and preventative measures to reduce flood and erosion damage and preserve natural habitat and wildlife resources in floodprone areas. Some of these measures include: adopting and administering Floodplain Regulations, resolving drainage complaints, protecting riparian habitat

communities, and assuring effective maintenance and operation of flood control works.

Floodplain Regulations:

Adopted policies, codes, ordinances, and regulations pertaining to the use and development of lands that lie within a regulatory floodplain.

Floodplain Development Permit:

An official document which authorizes specific activities within a regulatory floodplain or erosion hazard area.

Floodway:

The channel of a watercourse and portion of the adjacent floodplain that is needed to convey the base or 100-year flood event without increasing flood levels by more than one foot of floodwater.

Floodway Fringe:

The areas of a delineated floodplain adjacent to the Floodway where encroachment may be permitted.

Grade Control Structure:

A structure used across a stream channel placed bank to bank to control bed elevation, velocity, pressure, etc.

Groundwater:

Water within the earth that supplies wells and springs; water in the zone of saturation where all openings in rocks and soil are filled, the upper surface of which forms the water table.

High Hazard Zone:

The area of the floodplain where water depth and velocity pose a threat to life and safety. This area is delineated for areas in the floodplain where water velocity multiplied by water depth equals or exceeds the number four or where flood waters are predicted to be over four feet deep.

Hydraulic Structures:

The facilities used to impound, accommodate, convey, or control the flow of water, such as dams, intakes, culverts, channels, and bridges.

Hydraulics:

A field of study dealing with the flow pattern and rate of water movement based on the principles of fluid mechanics.

Hydrograph:

A graph of flow over time.

Hydrology:

A field of study concerned with the distribution and circulation of surface water, as well as water dynamics below the ground and in the atmosphere.

Hyetograph:

A graph of rainfall over time.

Impoundment:

Floodwater stored in a basin or behind a dam. It can be described in terms of a water depth (ft) or a volume (acre-ft).

Intensity:

When applied to rainfall, intensity is the depth of rain in a specified time. Examples are 1 inch per hour or ½ inch in 20 minutes.

Lateral Stream Migration:

Change in position of a channel by lateral erosion of one bank and simultaneous deposition on the opposite bank.

Levee:

A man-made structure, usually an earthen embankment often reinforced with soil cement, that is designed to contain or divert the flow of water.

LOMA (Letter of Map Amendment):

An official amendment of a current Flood Insurance Rate Map (FIRM) accepted by FEMA for a property or a structure. The LOMA verifies that the structure or portions of the property have been removed from a designated-floodplain area.

LOMR (Letter of Map Revision):

An official revision of a current Flood Insurance Rate Map (FIRM) accepted by FEMA, which reflects changes in mapped areas for flood zones, floodplain areas, floodways and flood elevations.

Low Flow Channel:

A channel within a larger channel which typically carries low and/or normal flows

National Flood Insurance Program (NFIP):

A federal program that allows property owners to purchase insurance protection against losses due to flooding. In order to participate in this program, local communities must agree to implement and enforce measures that reduce future flood risks in special flood hazard areas.

Outlet Structure:

A hydraulic structure placed at the outlet of a channel, spillway, pipe, etc., for the purpose of dissipating energy and providing a transition to the channel or pipe downstream.

Peak Flow:

The maximum rate of flow through a watercourse for a given storm

Percolation:

The movement of water through the subsurface soil layers, usually continuing downward to the groundwater or water table reservoirs.

Precipitation:

All forms of water that fall to the earth's surface - including rain, snow, sleet and hail.

Regulatory Floodplain:

A portion of the geologic floodplain that may be inundated by the base flood where the peak discharge is 100 cubic feet per second (cfs) or greater. Regulatory floodplains also include areas which are subject to sheet flooding, or areas on existing recorded subdivision plats mapped as being floodprone.

Retention Basin:

A basin or reservoir where water is stored for regulating a flood. Unlike a detention basin, it does not have outlets for releasing the flows, the water must be disposed by draining into the soil, evaporation, or pumping systems.

Recurrence Interval/Return Period:

The average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. It is a statistical measurement typically based on historic data denoting the average recurrence over an extended period of time. Technically, it is the inverse of the probability that the event will be exceeded in any one year.

Riparian Habitat:

Plant communities that occur in association with any spring, cienega, lake, watercourse, river, stream, creek, wash, arroyo, or other body of water. Riparian habitats can be supported by either surface or subsurface water sources.

Riparian Zone:

A stream and all the vegetation on its banks.

Runoff:

The portion of precipitation on land that ultimately reaches streams, especially water from rain or melted snow that flows over ground surface.

Sediment:

Soil particles, sand, and minerals washed from the land into aquatic systems as a result of natural and human activities.

Sheet Flow:

Very shallow overland discharge.

Spill:

A predicted flow of water that escapes the stream channel and flows in a different direction.

Spillway:

An outlet pipe or channel serving to discharge water from a dam, ditch, gutter, or basin.

Storage:

The volume of water stored in a basin or behind a dam – usually expressed in acre-feet. It differs from capacity, which is the volume of water stored at the emergency spillway elevation.

Storm Drainage System:

A drainage system for collecting runoff of stormwater on highways and removing it to appropriate outlets. The system includes inlets, catch basins, storm sewers, drains, reservoirs, pump stations, and detention basins.

Stormwater:

Precipitation from rain or snow that accumulates in a natural or man-made watercourse or conveyance system.

Surface Water:

Water that flows in streams and rivers and in natural lakes, in wetlands, and in reservoirs constructed by humans.

Tailwater:

The water surface elevation in the channel downstream of a hydraulic structure

Thalweg:

The line of maximum depth in a stream. The thalweg is the part that has the maximum velocity and causes cutbanks and channel migration.

Trashrack:

A metal bar or grate located at the outlet structure of a detention or retention basin which is designed to prevent blockage of the structure by debris.

Tributary:

A stream that contributes its water to another stream or body of water.

Water table:

Level below the earth's surface at which the ground becomes saturated with water. The surface of an unconfined aquifer which fluctuates due to seasonal precipitation.

Watershed:

An area from which water drains into a lake, stream or other body of water. A watershed is also often referred to as a basin, with the basin boundary defined by a high ridge or divide, and with a lake or river located at a lower point.

Zone A (unnumbered):

Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones. Mandatory flood insurance requirements apply.

Zone AE and A1-30:

Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. In most instances, base flood elevations derived from detailed analyses are shown at selected intervals within these zones. Mandatory flood insurance requirements apply.

Zone AH:

Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones. Mandatory flood insurance requirements apply.

Zone AO:

River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones. Mandatory flood insurance requirements apply.

Zone B, C and X:

Areas outside the 1-percent annual chance floodplain, areas of 1% annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1% annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1% annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in these zones.

Zone D:

Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.