

GEOL 308 Floods: A Glossary

Basin/Catchment - The surface area of land that collects and drains water into a river or other waterway. Catchments, sometimes called basins or watersheds, can include both rural and urban areas.

Channel - The physical course of a river, creek, stream or drainage line in which water flows (see also *waterway*).

Detention basin - A small, man-made reservoir connected to a waterway that provides a temporary storage for floodwaters, potentially reducing or delaying the likelihood or magnitude of downstream flooding.

Flash flood - Flooding that is sudden and unexpected and of short duration; flash floods are often caused by heavy rainfall, but can also result from other events within a catchment e.g. drain blockages or bursts. Flash floods are defined by the speed of flooding, not the source of water.

Floodplain - Land adjacent to a waterway, subject to occasional flooding (up to and including the *probable maximum flood*). Floodplains can be narrow, steep, wide and/or flat, and can extend several kilometers from the waterway.

Flood forecast - Estimation of river height, streamflow, time of occurrence, and duration of a flood, especially of *peak flow rate*, at a specified point on a waterway, usually resulting from rainfall.

Flood inundation extent (or flood areal extent) - The area under floodwaters.

Hydrograph – A plot showing river discharge vs. time.

Inundation - The covering of land, property and associated infrastructure and possessions by floodwaters.

Levee - Raised embankments or earthworks along the floodplain that reduce the frequency of inundation of areas adjacent to the waterway. They are designed to withstand certain river heights, and will be overtopped if floodwaters exceed this level.

Peak flow rate / peak water flow - The maximum flow of water in a waterway - typically measured in cubic meters of water per second (the USGS uses cubic feet per second, CFS). This is a measure of the size (or magnitude) of a flood.

Peak water level / flood peak - The highest level that water in a waterway reaches during a flood. This is a measure of the size (or magnitude) of a flood.

Probable Maximum Flood (PMF) - An estimate of the largest possible flood that could occur at a particular location, under the most severe meteorological and hydrological conditions as they are currently understood.

Risk - Risk is a combination of likelihood (or chance) of an event occurring, and the consequences of that occurrence (the overlap of hazard with population/assets). Consequences are in turn determined by the level of exposure to the occurrence and the vulnerability of people, property, and infrastructure to the occurrence.

River Discharge - The volume of water flowing in a waterway, as measured at a particular location, usually expressed in terms of cubic meters of water per second (or CFS).

River height / water level (river "stage") - The level of water in a waterway as measured by a stream/river gauging station for a particular location along a waterway, expressed in meters (or feet) above an alternative arbitrary 'zero' level.

Runoff - The water flow that occurs when either (1) soil is infiltrated to full capacity; or (2) rainfall occurs at a rate greater than the rate at which it can infiltrate the soil. The resultant 'excess' water from rain and other sources flows over the land.

Stream / river gaging station - Measures the height of the water in a river at a particular location. It may be manual or automated.

Waterway - Any physically defined water flow path such as a river, gully, creek, tributary, estuary or stream, that captures runoff and conveys it towards an outlet or terminus (e.g. the ocean or a dam), (see also *channel*).

Modified from: <http://www.chiefscientist.qld.gov.au/publications/understanding-floods/glossary.aspx>