

Glossary of Terms used in the Stormwater Industry

Term	Code	Definition
Fabric	Esc	A 2-dimensional textile produced by interweaving yarns, fibres or filaments.
Facultative anaerobes	Eco	Microorganisms that are able to grow either in the presence or the absence of oxygen.
Fan	Lfm	A level to very gently inclined, fan-shape landform associated with rapidly migrating stream channels. The landform is formed by deposition of alluvial material through overbank stream flow and overland sheet flow.
Fat clay	Sol	A clay that contains a higher proportion of clay than any other particles (as opposed to a lean clay).
Fate	Eco	Disposition of a material in various environmental compartments (eg. soil or sediment, water, air, biota) as a result of transport, transformation and degradation.
Fetch	Coa	A measure of the length of contact between wind and water resulting in the generation of waves.
Field capacity	Sol	The greatest amount of water that a soil can hold in its pore spaces after excess water has drained away.
Field gully	Sto	An inlet to a sub-surface drainage system located within an open area where the water falls vertically into the connecting chamber.
Field inlet	Sto	An inlet to a sub-surface drainage system located within an open area where the water falls vertically into the connecting chamber. Also known as a DROP INLET (USA).
Fill (noun)	Eng	1. Any material used to raise the surface of an area to a desired level prior to or during earthmoving operations. Usually made up of soil and/or rock material, but may also be solid waste.
	Eng	2. The material used to fill an area.
	Eng	3. The depth from the finished earth surface to the natural surface.
Fill (verb)	Eng	To deposit excavated material.
Filling	Eng	The action of placing material (excavated or imported) to raise the surface of the land above its previous elevation.
Filter (noun)	Eng	A granular or geotextile barrier placed between two layers of granular or earthen material to prevent or limit cross contamination between the two layers.
	Sto	A material designed to intercept and remove fine particulate material from water as it passes through the filter. Some filters can also adsorb dissolved pollutants. Stormwater filters include grass filter strips, sand filters, bioretention systems and synthetic filter cells/cartridges incorporated into commercial pollutant traps.

Filter (verb)	Sto	The action of removing contaminants from stormwater by passing it through a material barrier.
Filter basin	Sto	A stormwater retention basin with a base that consists primarily of a granular (sand) filter bed. Water that filters through is collected and discharged by a sub-surface drainage system.
Filter bed	Sto	The filtration system of a filter basin, any granular filter surface that relies on the gravity flow of water through the filter, or an area of grass or vegetated used for the filtration of contaminated water.
Filter blanket	Eng	A granular or geotextile barrier placed between two layers of granular or earthen material to prevent or limit cross contamination between the two layers.
Filter cloth	Eng	A synthetic material that allows water and some soil particles to pass through it. The size of soil particles held back depends on the mesh size of the material. It is typically used as a protective lining for earth structures, batters of channels or to separate different soil texture layers.
Filter dam	Esc	A barrier, embankment or other similar structure built of pervious materials, such as stones or gabions, that is constructed in drainage lines to filter out and retain sediment carried in passing flows.
Filter material	Eng	Any granular material selected to allow liquid (typically water) to pass through it but which retains particles. Also known as FILTER MEDIA.
Filter media	Eng	Any granular material selected to allow liquid (typically water) to pass through it but which retains particles. Also known as FILTER MATERIAL.
Filter medium	Eng	Any barrier substance or material that liquid (typically water) can pass through but which retains particles.
Filter pond	Esc	A pit into which sediment-laden water is pumped so that the water can drain out, leaving the sediment. Usually built of pervious materials, such as filter cloth, aggregate, sediment fence fabric, or a combination of these. Typically used as a sediment control measure during de-watering operations.
Filter strip	Esc	A long narrow area—relative to the width of flow—of remnant or planted vegetation used to retard sheet flow thus allowing the settlement and/or filtration of sediment from the water. Typically refers to areas where grasses are the predominant vegetation.
	Sto	A long narrow area of remnant or planted vegetation used to retard sheet flow runoff thus filtering pollutants from the water and allowing some water to infiltrate the ground. Filter strips are narrower than buffer zones or filter beds and are primarily used to remove sediment, grit, coarse particulate matter and hydrocarbons from stormwater runoff.

Filtration	Sto	<p>The process of mechanically removing particles from a liquid as it passes through a filter or filter medium. Filtration includes the process of adsorption of particles from a liquid passing through a filter.</p> <p>Filtration is distinguished from 'infiltration' through the use of an artificial filter medium as opposed filtration through natural ground.</p>
Filtration practices	Sto	A stormwater management system that passes runoff through a medium to remove pollutants, specifically particulate pollutants. The medium can be sand, peat, or compost.
Finite-difference model	Min	A digital computer model based upon a rectangular grid that sets the boundaries of the model and the nodes where the model will be solved.
Finite-element model	Min	A digital computer model in which an aquifer is divided into a mesh formed of a number of polygonal cells.
First flush	Sto	<p>The initial high concentration of accumulated pollutants (compared to later levels) washed from a catchment during the early stages of a storm event.</p> <p>First flush results from the initial washing of readily available pollutants that have accumulated on the surface of the catchment, especially impervious surfaces such as roads, parking areas and impervious drains.</p>
First order reactors	Sci	Reactions where the rate of disappearance (or production) of a particular component (e.g. BOD or N) is directly proportional to the available concentration of that component.
First order stream	Wwy	A non-branching segment (arm or branch) of a watercourse.
Fish ladder	Wwy	A constructed fishway that requires fish to 'jump' from pool to pool, or cell to cell, in order to climb the structure.
Fish migration	Wwy	The progressive seasonal movement of fish and other aquatic organisms up or down a watercourse as part of their life cycle. It is one form of fish passage.
Fish passage	Wwy	The movement of fish and other aquatic organisms up and down a watercourse.
Fishway	Wwy	A structure designed to enable fish to move past a physical barrier (e.g. dam or weir) in a waterway.
Fittings	Eng	Any structural attachments to a pipeline through which the fluid will pass, but not including the pipes.
Five-Day Biochemical Oxygen Demand	Wat	The oxygen used in meeting the metabolic needs of aerobic microorganisms in a sample of water containing in organic matter under controlled laboratory test conditions over a period of five days. The higher the level of organic matter, the higher the biochemical oxygen demand (BOD).
Fixation	Sci	The conversion of atmospheric nitrogen into ammonia by microbial organisms and chemical fixation.
Flagellates	Eco	A group of distinctive single-celled algae common in many fresh and marine waters.

Flash flood	Hyd	1. A flood of short duration with a relatively high peak flow rate.
	Hyd	2. A rapid rise in flood levels relative to normal flooding conditions. It can be caused by an event such as the failure of a water storage dam. In this context, a flash flood may represent a small component of a larger, long-duration flood event.
Flashy	Wwy	Of a river or stream whose discharge can rise and fall suddenly.
Flexible floating booms	Sto	A stormwater treatment system that comprises a line of partly submerged floating booms strung across a drain or watercourse. Originally designed as an oil slick retention device, these systems are now designed to collect floating pollutants.
Flexible lining	Eng	Surface lining of an open channel that is flexible enough to allow minor shifting or changes in the channel cross-section or elevation without failing. Typical lining includes rock riprap and vegetative lining.
Floating debris trap	Sto	A stormwater treatment system that operates similar to flexible floating booms but has enhanced material retention capabilities. Each trap normally incorporates a floating pollutant retention cage.
Floating litter boom	Sto	A pollution trap consisting of mesh skirts hanging off a floating boom extending fully or partially across permanently wet channels, creeks and rivers. They are specifically designed to collect floating and partially submerged debris.
Flocculant	Sci	A substance added to a solution to produce an agglomeration of suspended particles.
Flocculate	Sci	To form a floc or woolly-looking precipitate within a solution, such as aggregated masses of suspended sediment within a water-based solution.
Flocculation	Esc	The process by which colloidal or very fine clay particles, suspended in water, come together into larger masses or loose flocs. Flocculation of suspended sediment depends on the balance between exchangeable ions on the clay and those in solution and on the overall ionic strength of the solution. Technically the term only refers to the initial formation of a flocculent or floc.
	Sci	To form aggregated or compound masses of particles.
Flocculent	Sci	To take the form of a floc or woolly-looking precipitate within a solution, e.g. aluminium hydroxide forms when ammonia is added to a solution of aluminium salt.
Flood	Hyd	The inundation of land that is normally "dry" by expanses of water resulting from stream flows high enough at their peak to overtop the stream's banks or cause flow through high-level anabranches, whether or not the water is flowing over the land or backing-up from downstream flooded areas.
Floodbank	Wwy	A flood control levee.
Flood boundary line	Wwy	A line defining the edge of the area submerged at the height of a given flood.

Flood control	Wwy	Any structural technique used to control either the frequency or severity of flooding (e.g. flood control dams) or the extent of flooding (e.g. dykes, levees and channel augmentation).
Flood control dam	Wwy	A basin that temporarily stores or controls flood runoff, including flood retarding basins.
Flood damage	Gen	Damage to property, services or land resulting from the backing-up or spreading of floodwater passing down a watercourse or its floodplains, or from erosion caused by floodwaters passing down a watercourse.
Flood defence	Coa	Structural measures taken to reduce the effects or severity of flooding by rivers or the sea.
Flood frequency	Hyd	The long-term frequency of exceedance of a given peak flood discharge or peak water level usually expressed as an annual exceedance probability.
Flood frequency analysis	Hyd	The long-term statistical analysis of either peak flood discharge or peak water level, at a given location, usually expressed as an annual exceedance probability based on an annual series data set (ie. a data set consisting of the highest discharge or water level in each year of record). The year may be a calendar year or water year. Flood frequency analysis based on a partial series data set is normally expressed as in terms of an average recurrence interval (ARI). Also known as REGIONAL FLOOD FREQUENCY ANALYSIS.
Floodgate	Eng	A gate designed to regulate the flow of flood waters so that the extent of flooding or the inundation of tidal water is controlled.
	Rur	A gate in a fence where it crosses a watercourse or drain that allows stormwater or floodwater to pass but at other times is an integral part of the enclosure.
Flood hazard	Hyd	The potential loss of life, or damage to life, property and services which can be directly attributed to a flood.
Flood hazard area	Hyd	An area of flood-prone land that defines the limits of a given flood hazard. Usually based on the 1 in 100-year flood.
Flood hazard map	Hyd	Graphical representation of areas representing a defined flood hazard.
Flood hydrograph	Hyd	A plot or recording of stream discharge verse time over the duration of a flood at a given location along a watercourse. A design flood hydrograph represents the discharge from a theoretical design storm. The highest point of the flood hydrograph represents the peak discharge.
Flooding	Hyd	The inundation of land resulting from tidal water or overflow of a watercourse.
Flood inundation	Hyd	The infiltration and covering of land, properties of structures by floodwaters.

Flood mark	Hyd	A mark or line indicating the highest point reached by a historical flood at a given location.
Flood meadow	Wwy	Pasture that is regularly flooded as part of a river control strategy.
Flood model	Hyd	A numerical or physical simulation of the expected flood conditions at a given location.
Floodplain	Wwy	Land area adjoining rivers, streams, artificial channels, lakes, dams, bays, or oceans, that is inundated during flood events due to overbank stream flows or abnormal high tides resulting from severe storms. Other than floodplains defined by tidal inundation, floodplains extend to the expected limits of the Probable Maximum Flood (PMF).
Floodplain management	Wwy	The operation of an overall program of corrective and preventative measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works, and floodplain management regulations.
Floodplain management planning	Wwy	Technical and non-technical studies, policies, management strategies, statutes and ordinances developed for the purpose of managing floodplains.
Floodplain management program	Wwy	Policies, management strategies, statutes and ordinances developed for the purpose of managing floodplains.
Floodplain storage	Wwy	The volumetric capacity of a floodplain. Floodplain storage is normally defined over a specified reach length and to the peak elevation of a specified flood event.
Flood-prone area	Wwy	The part of the drainage catchment defined by the floodplain.
Flood proofing	Wwy	A range of structural measures designed to reduce the potential flood damage likely to be experienced by an individual structure. The measures can include waterproofing exterior walls, the raising structures, and the moving vulnerable equipment to higher in the building.
Flood retarding basin	Wwy	A large open basin or enlarged floodplain designed to retard all, or part of, floodwaters passing through the basin so as to reduce flooding downstream of the basin.
Flood risk	Wwy	The probability of a given location being flooded.
Flood routing	Hyd	The numerical analysis or modelling of the passage of a flood wave through a reservoir or along a watercourse.
Flood runners	Wwy	Distributary channels carrying water away from the river channel.
Flood stage	Wwy	The elevation of floodwater, at a given instant, measured relative to a given datum.
Flood storage area	Wwy	An area of a floodplain where the storage of floodwaters is a critical component of the floodplain management program.
Flood surcharge	Eng	The maximum rise of basin water level above a reservoir's full supply level during a flood. Typically the maximum rise in basin water level above the primary spillway crest.
Flood tide	Coa	The rising tide.

Flood warning system	Wwy	A real-time flood prediction tool (or model) and associated communication system used to provide flood-related information in advance of such flooding occurring.
Floodwater	Wwy	Stream flow during a flood, including the water that overflows the floodplain.
Flood wave	Wwy	The total flood from the first rise in the water to its peak to the water level returning to pre-flood level, represented as a long-wave, i.e a wave of water with a very long wavelength and period.
Floodway	Gen	A channel or passage through which floodwaters pass.
	Eng	Longitudinal depression in a carriageway constructed to allow floodwater to cross without damage to the road.
	Wwy	The channel of a stream and that portion of the floodplain that must be kept free of encroachment by development or excessive vegetation so that a defined flood—typically the 1 in 100-year flood—can pass through without damage to the surrounding land or an unacceptable increase in flood heights. The floodway represents that portion of the floodplain where the appropriate management of its hydraulic (discharge) capacity is critical.
Floodway fringe	Wwy	That portion of the floodplain that could be completely obstructed without increasing the water surface elevation of the defined flood event—typically the 1 in 100-year flood—by more than a defined amount.
Flow	Gen	1. The movement of water either across a surface or within a conduit.
	Gen	2. The volume of water movement over a defined period or within a given event.
Flow attenuation	Sto	A reduction in the magnitude of flow either in terms of peak discharge or volume.
Flow balancing	Sto	The process of reducing peak discharge by temporarily storing the water.
Flow control valve	Eng	A valve used in a conduit that can be partly opened to regulate flow or pressure. Also known as a CONTROL VALVE.
Flow rate	Gen	The volume of flow that passes a given section in a flow stream per unit time. Also known as DISCHARGE.
Flow regime	Wwy	The pattern of flow in a watercourse described in terms of the quantity and variability of flows.
Flow-through system	Eco	An exposure system for aquatic toxicity tests in which the test material solutions and control water flow into and out of test chambers on a once-through basis either intermittently or continuously.

Fluid	Gen	A substance that is capable of flowing and offers no permanent resistance to changes of shape, whether a liquid or a gas.
Flume	Gen	A deep narrow passage for water flow.
	Hyd	A horizontal constriction (i.e. choke) within an open channel, possibly including a vertical constriction (i.e. weir) on the bed, that hydraulically functions as a broad-crested weir allowing critical depth to occur at the choke. As a flow measuring device, flumes (in comparison to weirs) provide the advantage of allowing the near-free passage of bed sediments.
	Sto	A hydraulic structure incorporating an inlet, chute and outlet, to convey concentrated water to a lower level without causing erosion.
Flush kerb	Sto	Roadside edging with an upper surface flush with the adjacent road surface that allows stormwater runoff to “sheet” off the road onto the road shoulder.
Fluting	Gen	A series of vertically elongated grooves (flutes) down gully sides caused by rill erosion. Most commonly experienced in dispersive soils. In severe cases the rills may become isolated from the gully walls to form narrow tapered pinnacles.
Fluvial	Wwy	Relating to or produced by a river—for example, fluvial sediment.
Fluvial hydraulics	Hyd	The study of water flow in a stream, river or associated floodplain.
Fluvial sediment	Wwy	Any sediment deposits produced by stream or river action.
Flux	Sci	Rate of movement of a mass or quantum of heat.
Footslope	Top	A moderate to very gently sloping landform at the lower end of a slope caused by degradation or erosion by sheet flow, earthflow or creep.
Forb	Bot	Herbaceous (ie. non-woody) plant other than a grass, especially a broad-leaved herb growing in a field.
Ford	Gen	A shallow place where a river or other body of water may be crossed by wading or otherwise passing through the water.
	Eng	A carriageway formed directly on the channel bed in a shallow section of a watercourse.
Form roughness	Hyd	Channel roughness affecting the stream flow that results from medium-scale irregularities in the bed and banks of a channel, including dunes and ripples on the bed of an alluvial channel.
Foundation	Eng	The material of the valley floor and abutments on which a dam’s embankment is constructed.
Fraction impervious	Hyd	That part of a catchment that is impervious. The amount being expressed as a decimal or percentage.
Framework gravel	Wwy	Riverbed gravel supported by underlying gravel.

Free surface flow	Hyd	Flow in which a continuous free liquid surface is exposed to a gaseous state, usually atmospheric air. Free-surface flow can occur in an enclosed conduit provided the conduit is flowing partly full. Also known as OPEN CHANNEL FLOW.
Free water surface wetland	Wwy	A wetland where water flow is predominantly across the surface in a pond or retaining structure.
Freeboard	Eng	The vertical distance between the upper design water level (flood level) and the crest of a waterway bank, dam or embankment, the underside of a bridge, or floor of a building. The minimum design freeboard is usually influenced by the risk assessment of overtopping damage resulting from such things as flows in excess of the design flow, changes in hydraulic roughness, effects of wave action, and the settlement of earth embankment.
Freezing rainfall	Met	Rain drops that freeze on impact with the ground or objects on the Earth's surface.
French drain	Sto	A trench loosely backfilled with rock so that water can flow between the rocks. The largest rocks are placed at the bottom and the rock size gradually decreases towards the top.
Frequency	Gen	A measure of the number of occurrences per unit time.
Frequency factor	Hyd	A factor applied to the coefficient of discharge nominated for the 1 in 10 year storm (C_{10}) to determine the coefficient of discharge for a selected design frequency (C_V) for a selected catchment.
Freshes	Wwy	Flows that produce a substantial rise in river height for a short period, but which do not overtop the river bank.
Friability	Sol	A soil property that describes the ease with which a soil can respond to agricultural tillage operations. When a very friable soil is cultivated, it will break into a wide range of aggregate sizes, whereas a non-friable soil may break only into large aggregates or fine powder, and may be unsuitable for seed germination.
Friable	Sol	Relating to easily crumbled soil.
Friction slope	Hyd	The slope of the line representing the pressure head, or piezometric head in a pipeline. Also known as the HYDRAULIC GRADIENT or PRESSURE GRADIENT.
Froude number	Hyd	A dimensionless parameter defined by ratio of inertial and gravitational forces acting on the water. The Froude Number (F) provides a criterion for determining whether a given flow is subcritical ($F < 1$), critical ($F = 1$) or supercritical ($F > 1$).
Fry	Eco	The young of fishes.
Full supply level	Eng	The level of the water surface when the reservoir is at maximum operating level, excluding periods of flood discharge.
Fulvic	Gen	Dull yellowish brown or tawny.

Fulvic acid	Sci	An organic acid with similar properties to humic acid.
Furrow	Agr	A narrow longitudinal channel or trench in the earth made by a plough or grader.
Furrow irrigation	Rur	A method of irrigation in which water runs along small ditches or furrows which lead from the supply channel, thus wetting only part of the ground surface.