

## GLOSSARY

**Aggregate**—Term for the stone or rock gravel needed to fill in an infiltration practice, such as a trench or porous pavement.

**Algae**—Primitive plants, many microscopic, containing chlorophyll and forming the base of the food chain in aquatic environments. Some species may create a nuisance when environmental conditions are suitable for prolific growth.

**Anti-seep collar**—A device constructed around a pipe or other conduit and placed through a dam, levee, or dike for the purpose of reducing seepage losses and piping failures.

**Bankfull discharge**—A flow condition where streamflow completely fills the stream channel up to the top of the bank. In undisturbed watersheds, the discharge conditions occurs on average every 1.5 to 2 years and controls the shape and form of natural channels.

**Baseflow**—The portion of stream flow that is not due to storm runoff, but is supported by groundwater seepage into a channel.

**Bedrock**—The more or less solid rock in place either on or beneath the surface of the earth. It may be soft, medium, or hard and have a smooth or irregular surface.

**Best management practice (BMP)**—Physical, structural, and/or managerial practices that, when used singly or in combination, prevent or reduce pollution of water, and have been approved by the Department of Environmental Conservation.

**Biochemical Oxygen Demand (BOD)**—The quantity of oxygen consumed during the biochemical oxidation of matter over a specified period of time. Also called biological oxygen demand.

**Bond**—A surety bond, cash deposit or escrow account, assignment of savings, irrevocable letter of credit or other means acceptable to or required to guarantee that work is completed in compliance with the project's stormwater management and erosion control plan and in compliance with all local government requirements.

**Buffer zone**—The zone contiguous with a sensitive area that is required for the continued maintenance, function, and structural stability of the sensitive area. The critical functions of a riparian buffer (those associated with an aquatic system) include shading, retention of organic debris and coarse sediments, uptake of nutrients, stabilization of banks, interception of fine sediments, overflow during high water events, protection from disturbance by humans and domestic animals, maintenance of wildlife habitat, and room for variation of aquatic system boundaries over time due to hydrologic or climatic effects. The critical functions of terrestrial buffers include protection of slope stability, attenuation of surface water flows from storm water runoff and precipitation, and erosion control.

**Catchment**—Surface drainage area.

**Channel**—A surface feature that conveys surface water and is open to the air.

**Channel, constructed**—Channels or ditches constructed (or reconstructed natural channels) to convey surface water.

**Channel, natural**—Streams, creeks, or swales that convey surface/ground water and have existed long enough to establish a stable route and/or biological community.

**Channel stabilization**—Erosion prevention and stabilization of velocity distribution in a channel using jetties, drops, revetments, vegetation, and other measures.

**Check dam**—Small dam constructed in a gully or other small watercourse to decrease the streamflow velocity, minimize channel scour, and promote deposition of sediment.

**Clearing**—The destruction and removal of vegetation by manual, mechanical, or chemical methods.

**Conveyance**—A mechanism for transporting water from one point to another, including pipes, ditches, and channels.

**Conveyance system**—The drainage facilities, both natural and man-made, which collect, contain, and provide for the flow of surface and stormwater from the highest points on the land down to a receiving water. The natural elements of the conveyance system include swales and small drainage courses, streams, rivers, lakes, and wetlands. The man-made elements of the conveyance system include gutters, ditches, pipes, channels, and most retention/detention facilities.

**Culvert**—Pipe or concrete box structure which drains open channels, swales or ditches under a roadway or embankment, typically with no catchbasins or manholes along its length.

**Design storm**—A rainfall event of specified size and return frequency (e.g., a storm that occurs only once every 2 years) which is used to calculate the runoff volume and peak discharge rate to a stormwater management facility.

**Detention**—Release of surface and stormwater runoff from the site at a slower rate than it is collected by the drainage facility system, the difference being held in temporary storage.

**Detention time**—The amount of time a parcel of water is actually present in a stormwater detention basin. Theoretical detention time for a runoff event is the average time parcels of water reside in the basin over the period of release from the stormwater management facility.

**Discharge**—The quantity of flow in a stream at any given time, usually measured in cubic feet per second (cfs).

**Ditch**—A long narrow excavation dug in the earth for drainage with its top width less than 10 feet at design flow.

**Drainage**—Refers to the collection, conveyance, containment, and/or discharge of surface and storm water runoff.

- Drainage basin**—A geographic and hydrologic subunit of a watershed.
- Drainage divide**—The boundary between one drainage basin and another.
- Dry basin**—A detention basin without a permanent pool of water used to attenuate or slowly release stormwater runoff.
- Drywell**—Similar to infiltration trench but smaller with inflow from pipe; commonly covered with soil and used for drainage areas of less than 1 acre such as roadside inlets and rooftops runoff.
- Embankment**—A structure of earth, gravel, or similar material raised to form a dam for a pond or reservoir or foundation for a road.
- Emergency spillway**—A vegetated earth channel used to safely convey flood discharges in excess of the capacity of the principal spillway.
- Emergent plants**—Aquatic plants that are rooted in the sediment but whose leaves are at or above the water surface. These wetland plants often have high habitat value for wildlife and waterfowl, and can aid in pollutant uptake.
- Energy dissipator**—Any means by which the total energy of flowing water is reduced. In stormwater design, they are usually mechanisms that reduce velocity prior to, or at, discharge from an outfall in order to prevent erosion. They include rock splash pads, drop manholes, concrete stilling basins or baffles, and check dams.
- Erosion**—The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep, detachment and movement of soil or rock fragments by water, wind, ice, or gravity.
- Erosion/sediment control**—Any temporary or permanent measures taken to reduce erosion, control siltation and sedimentation, and ensure that sediment-laden water does not leave the site.
- Erosion/sediment control facility**—A type of drainage facility designed to hold water for a period of time to allow sediment contained in the surface and stormwater runoff directed to the facility to settle out so as to improve the quality of the runoff.
- Estuary**—Area where fresh water meets salt water, where the tide meets the river current (e.g., bays, mouths or rivers, salt marshes and lagoons). Estuaries serve as nurseries, spawning, and feeding grounds for large groups of marine life and provide shelter and food for birds and wildlife.
- Eutrophication**—Refers to the process where nutrient enrichment of water leads to excessive growth of aquatic plants, especially algae.
- Exfiltration**—The downward movement of runoff through the bottom of an infiltration practice into the soil layer; the downward movement of water through soil.

**Extended detention**—Detention of storm runoff volumes in water quality basins to remove suspended solids. A practice designed to store stormwater runoff by collection as a temporary pool of water and provide for its gradual (attenuated) release over 24 hours or more. A practice which is used to control peak discharge rates, and which provides gravity settling of pollutants.

**Filter fabric**—A woven or nonwoven, water-permeable material generally made of synthetic products such as polypropylene used in stormwater management and erosion and sediment control applications to trap sediment or prevent the clogging of aggregates by fine soil particles. Textile of relatively small mesh or pore size that is used to (a) allow water to pass through while keeping sediment out (permeable) or (b) prevent both runoff and sediment from passing through (impermeable).

**Filter strip**—A strip of vegetation used to retard or collect sediment for the protection of diversions, stormwater management facilities, or other structures. Often used in conjunction with a level spreader to keep flow from becoming channelized in the filter strip.

**First flush**—The delivery of a disproportionately large load of pollutants during the early part of storms due to the rapid runoff of accumulated pollutants.

**Flood**—An overflow of lands not normally covered by water and that are used or usable by man. Floods have two essential characteristics: The inundation of land is temporary; and the land is adjacent to and inundated overflow from a river or stream or an ocean, lake, or other body or standing water.

**Flood elevation study**—An examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

**Flood frequency**—The frequency with which the maximum flood may be expected to occur at a site in any average interval of years. Frequency analysis defines the "n-year flood" as being the flood that will, over a long period of time, be equaled or exceeded on the average once every "n" years.

**Flood fringe**—That portion of the floodplain outside of the floodway which is covered by floodwaters during the base flood; it is generally associated with standing water rather than rapidly flowing water.

**Flood hazard areas**—Those areas subject to inundation by the base flood. Includes, but is not limited to streams, lakes, wetlands, and closed depressions.

**Flood plain**—For a given flood event, that area of land adjoining a continuous watercourse which has been covered temporarily by water.

**Flood routing**—Flood routing is a procedure required to determine the hydrograph at any point on a stream from the known hydrograph at an upstream point. It includes routing the movement of water from rainfall to runoff in both channel reaches and reservoirs. In the latter case, it is called reservoir routing. When it is used to determine the combined flood at a downstream point due to floods in several upstream tributaries and in the main stream, the technique is known as flood synthesis.

**Floodway**—The channel of the river or stream and those portions of the adjoining floodplains which carry and discharge the base flood flow.

**Forebay**—An easily maintained, extra storage area provided near an inlet of a stormwater management practice to trap incoming sediments before they accumulate in a pond, wetland or other structure.

**Freeboard**—The vertical distance between the design water surface elevation and the elevation of the barrier which contains the water. The space from the top of an embankment to the highest water elevation expected for the largest design storm stored. The space is required as a safety margin in a pond or basin.

**Frequency of storm (design storm frequency)**—The anticipated period in years that will elapse, based on average probability of storms in the design region, before a storm of a given intensity and/or total volume will recur; thus a 10-year storm can be expected to occur on the average once every 10 years.

**Gabion**—A rectangular box of heavy gauge wire mesh filled with rock or large cobbles, used in streams and ponds to change flow patterns, stabilize banks, or prevent erosion.

**Grassed waterway**—A natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses, used to conduct surface water from an area at a reduced flow rate.

**Ground water**—Water in a saturated zone or stratum beneath the surface of the land.

**Ground water recharge**—Inflow to a ground water reservoir.

**Ground water table**—The free surface of the ground water subject to atmospheric pressure under the ground, generally rising and falling with the seasons, rate of withdrawal, rate of restoration, and other conditions. It is seldom static.

**Gully**—A channel caused by the concentrated flow of surface and stormwater runoff over unprotected erodible land.

**Habitat**—The specific area or environment in which a particular type of plant or animal lives. An organism's habitat must provide all of the basic requirements for life and should be protected from harmful contaminants.

**Heavy metals**—Toxic metals of high specific gravity, such as lead, cadmium and zinc which are present in urban runoff.

**Hydrograph**—A graph showing variation in the water depth or discharge in a stream or channel, over time, at a specified point of interest.

**Hydrologic cycle**—The circuit of water movement from the atmosphere to the earth and return to the atmosphere through various stages or processes as precipitation, interception, runoff, infiltration, percolation, storage, evaporation, and transpiration.

**Hydrologic Soil Groups**—A soil classification system defined by the U.S. Soil Conservation Service in which a soil may be categorized into one of four soil groups (A, B, C, or D) based upon infiltration rate and other properties.

**Hydrology**—The science of the behavior of water in the atmosphere, on the surface of the earth, and underground.

**Impervious area**—Impermeable surfaces, such as pavement or rooftops, which prevent the infiltration of water into the soil.

**Impoundment**—A natural or man-made containment for surface water.

**Infiltration**—The downward movement of water from the surface of the land to subsoil. The infiltration capacity is expressed in terms of inches/hour.

**Infiltration basin**—An impoundment made by excavation or embankment construction to contain and exfiltrate runoff into the soil layer.

**Infiltration rate**—The quantity of water that can enter the soil surface in a specified time interval, usually inches/hour.

**Infiltration trench**—An adaptable stormwater management practice filled with aggregate which removes both soluble and particulate pollutants. Trenches are not intended to trap coarse sediments.

**Interflow**—That portion of rainfall that infiltrates into the soil and moves laterally through the upper soil horizons until intercepted by a stream channel or until it returns to the surface for example, in a wetland, spring or seep.

**Level spreader**—A device used to spread out stormwater runoff uniformly over the ground surface as sheet flow (i.e., not through channels). The purpose of level spreaders are to prevent concentrated, erosive flows from occurring, and to enhance infiltration.

**Mulch**—Any substance spread or allowed to remain on the soil surface to conserve soil moisture and shield soil particles from the erosive forces of raindrops and runoff. Any material such as straw, sawdust, leaves, plastic film, etc., that is spread upon the surface of the soil to protect the soil and plant roots from the effects of raindrops, soil crushing, freezing, evaporation, etc.

**New development**—Refers to the following activities: clearing, grading, excavation and filling; structural development and the creation of impervious surfaces.

**Nitrate (NO<sub>3</sub>)**—Nitrogen in a form that is available to plants. (Can cause algal blooms in water if all other nutrients are present in sufficient quantities.) Occurs in the atmosphere during electrical storms and from fertilizer manufacturing. Also, NO<sub>3</sub> can be a result of bacterial oxidation of NO<sub>2</sub> (nitrite nitrogen) which is unavailable to plants.

**Nonpoint source pollution**—Pollution that enters a water body from diffuse origins on the watershed and does not result from discernible, confined, or discrete conveyances such as a pipe or ditch.

**Nutrient pollution**—Contamination of water resources by excessive inputs of nutrients; in surface waters, excess algal production is a major concern.

**Nutrients**—Essential chemicals needed by plants or animals for growth. Excessive amounts of nutrients can lead to degradation of water quality and algal blooms. Some nutrients can be toxic at high concentrations. Elements or substances, such as nitrogen or phosphorus, that are necessary for plant growth.

**Off-line detention**—Flow is diverted from the conveyance system to storage when a predetermined flow rate is exceeded. The diverted water is stored until sufficient conveyance or treatment capacity becomes available downstream.

**Off-site**—Any area lying upstream of the site that drains onto the site and any area lying downstream of the site to which the site drains.

**On-site**—The entire property that includes the proposed development.

**Outfall**—The terminus of a storm drain where the contents are released.

**Peak discharge**—The maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.

**Peak flow attenuation**—The reduction of the peak discharge of storm runoff by storage and gradual release of that storage.

**Peak-shaving**—Controlling post-development peak discharge rates to pre-development levels by providing temporary detention in a stormwater management facility such as a detention pond.

**Percolation**—The movement of water through soil.

**Percolation rate**—The rate, usually expressed inches/hour, in which water moves through saturated granular material.

**Permeable soils**—Soil materials with a sufficiently rapid infiltration rate so as to greatly reduce or eliminate surface and stormwater runoff. These soils are generally classified as SCS hydrologic soil types A and B.

**Planned unit development**—A special classification authorized in some zoning ordinances, where a unit of land under control of a single developer may be used for a variety of uses and densities, subject to review and approval by the local governing body. The locations of the zones are usually decided on a case-by-case basis.

**Primary aquifer**—Highly productive aquifer being utilized as a source of water supply in a major municipal water supply system.

**Principal aquifer**—An aquifer known to be highly productive or whose geology suggests an abundant potential water supply, but which is not intensively used as a water supply source in a major municipality water supply system at the present time.

**Rational formula**—A simple technique, developed in the 1900's, for estimating peak discharge rates for small developments, based on the rainfall intensity, watershed time of concentration, and a runoff coefficient.

**Receiving waters**—Bodies of water or surface water systems receiving water from upstream manmade (or natural) streams.

**Recharge**—The flow to ground water from the infiltration of surface and stormwater runoff.

**Regional detention facility**—This term refers to the detention of stormwater runoff from a number of different businesses, developments or areas within a catchment. The use of regional detention facilities may be more efficient than on-site stormwater treatment although the preferred option is to include some on-site stormwater treatment through the use of grassy swales etc., even when regional detention facilities are used.

**Release rate**—The rate of discharge in volume per unit time from a detention basin.

**Retention**—A practice designed to store stormwater runoff by collection as a permanent pool of water without release except by means of evaporation, infiltration, or attenuated release when runoff volume exceeds the permanent storage capacity of the permanent pool.

**Retrofit**—Installation of a new stormwater management practice or improve an existing one in a previously developed area.

**Return interval or period**—A statistical term for the average time of expected interval that an event of some kind will equal or exceed given conditions (e.g., a stormwater flow that occurs every 2 years).

**Rill**—A small intermittent watercourse with steep sides, usually only a few inches deep. Often rills are caused by an increase in surface water flow when soil is cleared of vegetation.

**Riparian**—Pertaining to the banks of streams, wetlands, lakes or tidewater. A relatively narrow strip of land which borders a stream or river, often coincides with the maximum water surface elevation of the 100 year storm.

**Riprap**—A facing layer or protective mound of stones placed to prevent streambank erosion or sloughing of a structure or embankment due to flow of surface and stormwater runoff. A combination of large stone, cobbles and boulders used to line channels, stabilize stream banks, reduce runoff velocities.

**Riser**—A vertical pipe extending from the bottom of a detention pond that is used to control the discharge rate for a specified design storm.

**Runoff**—Water originating from rainfall and other precipitation that is found in drainage facilities, rivers, streams, springs, seeps, ponds, lakes and wetlands as well as shallow ground water. The portion of precipitation, snow melt, or irrigation that flows over and through the soil, eventually making its way to surface water supplies (such as streams, rivers, ponds); runoff includes surface runoff, interflow and ground water flow.

**Runoff Curve Number (CN)**—A curve number is a Soil Conservation Service estimated numerical value used to convert mass rainfall into mass runoff. A curve number represents a given area's hydrologic soil group, plant cover, amount of impervious areas, interception and surface storage.

**Seasonal high water table**—The shallowest depth at which the soil is saturated with water during frost-free periods. Soil conditions, relative to saturation, immediately after heavy precipitation are not considered.

**Sediment**—Fragmented material that originates from weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

**Sediment yield**—The quantity of sediment arriving at a specific location.

**Sedimentation**—The depositing or formation of sediment. Removal, transport, and deposition of detached sediment particles by flowing water or wind.

**Sheet erosion**—The relatively uniform removal of soil from an area without the development of conspicuous water channels.

**Sheetflow**—Runoff which flows over the ground surface as a thin, even layer, not concentrated in a channel.

**Siltation**—The process by which a stream, river, lake, or other water body becomes clogged with sediment. Silt can clog gravel beds in streams and prevent successful trout and salmon spawning.

**Site**—The portion of a piece of property which is directly subject to development.

**Soil group, hydrologic**—A classification of soils by the Soil Conservation Service into four runoff groups. The groups range from A soils, which are very permeable and produce little or no runoff, to D soils, which are not very permeable and produce much more runoff.

**Special flood hazard area**—An area having special flood, mudslide (i.e., mudflow) and/or flood-related erosion hazards.

**Spillway**—A depression in the embankment of a pond or basin which is used to pass peak discharges greater than the maximum design storm controlled by the pond.

**Storm frequency**—The time interval between major storms of predetermined intensity and volumes of runoff for which stormwater management facilities are designed and constructed to handle stormwater runoff, e.g., a 2-year, 10-year or 100-year storm.

**Stormwater drainage system**—Constructed and natural features which function together as a system to collect, convey, channel, hold, inhibit, retain, detain, infiltrate or divert stormwater.

**Stormwater facility**—A constructed component of a stormwater drainage system, designed or constructed to perform a particular function, or multiple functions, including, but not limited to, pipes, swales, ditches, culverts, street gutters, detention basins, retention basins, constructed wetlands, infiltration devices, catchbasins, oil/water separators, sediment basins, and modular and porous pavement.

**Streams**—Those areas where surface waters flow sufficiently to produce a defined channel or bed. The channel or bed may be intermittent or ephemeral and need not contain water year-round.

**Subbasin**—A short area which drains to a water course or waterbody named and noted on common maps and which is contained within a basin.

**Subcatchment**—A subdivision of a drainage basin (generally determined by topography or pipe network configuration).

**Surface and storm water**—Water originating from rainfall and other precipitation that is found in drainage facilities, rivers, streams, springs, seeps, ponds, lakes, and wetlands as well as shallow ground water.

**Surface and stormwater management system**—Drainage facilities and any other natural features which collect, store, control, treat and/or convey surface and stormwater runoff.

**Surface runoff**—Precipitation excess that is not retained on vegetation or surface depressions and is not lost by infiltration or evaporation, and thereby is collected on the land surface from where it runs off.

**Suspended solids**—Organic or inorganic particles that are suspended in and carried by the water. The term includes sand, mud, and clay particles (and associated pollutants) as well as other solids in stormwater.

**Swale**—A natural depression or wide shallow ditch used to temporarily store, route, or filter runoff.

**Terrace**—An embankment or combination of an embankment and channel across a slope to control erosion by diverting or storing surface runoff instead of permitting it to flow uninterrupted down the slope.

**Time of concentration**—The time period necessary for surface runoff to reach the outlet of a subbasin from the hydraulically most remote point in the tributary drainage area.

**Topography**—General term to include characteristics of the ground surface such as plains, hills, mountains, degree of relief, steepness of slopes, and other physiographic features.

**Total dissolved solids**—The dissolved salt loading in surface and subsurface waters.

**Trash rack**—A structural device used to prevent debris from entering a spillway or other hydraulic structure.

**Travel time**—The estimated time for surface water to flow between two points of interest.

**TR-20**—A watershed hydrology model developed by the Soil Conservation Service that is used to route a design storm hydrograph through a pond.

**TSS**—Total suspended solids, one of the standard pollutants characterizing urban runoff, as defined by the EPA.

**Turbidity**—Cloudiness of a liquid, caused by suspended solids; a measure of the suspended solids in a liquid.

**Urban runoff**—Surface runoff from urban areas (such as streets, parking lots, residential developments).

**Vegetative measures**—Nonstructural stormwater management and erosion control practices which rely on various forms of vegetation to enhance pollutant removal and retard runoff rates on the development site.

**Water body**—Surface waters including rivers, streams, lakes, marine waters, estuaries, and wetlands.

**Water quality**—A term used to describe the chemical, physical, and biological characteristics of water, usually in respect to its suitability for a particular purpose.

**Water quality inlet**—Also called an oil/grit separator, a water quality inlet typically has three chambers designed to remove sediment and hydrocarbon loadings from parking lot runoff before it is conveyed to the storm drain network or to an infiltration facility.

**Watershed**—A geographic region within which water drains into a particular river, stream, or body of water. An area of land that contributes runoff to one specific delivery point; large watersheds may be composed of several smaller "sub-watersheds" or "sub-catchments," each of which contributes runoff to different locations that ultimately combine at a common delivery point.

**Water table**—The upper surface or top of the saturated portion of the soil which indicates the uppermost extent of ground water.

**Wetland**—Those areas that are inundated or saturated by ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

**Wetpond**—A basin with a permanent pool of water.