

## APPENDIX A — GLOSSARY OF TERMS

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**AASHTO Classification.** The official classification of soil materials and soil aggregate mixtures for highway construction used by the American Association of State Highway and Transportation Officials.

**Abutment.** The sloping sides of a valley that support the ends of a dam.

**Acre-Foot.** The volume of water that will cover one acre to a depth of one foot.

**Advanced Treatment.** Pollutant removal techniques typically used in drinking water treatment processes but with potential for application as advanced treatment options for storm water. These treatment techniques include ion exchange, reverse osmosis, disinfection, ultra filtration, alum injection, and use of water-soluble anionic polyacrylamide (PAM).

**Aggregate.** (1) The sand and gravel portion of concrete (65% to 75% by volume), the rest being cement and water. *Fine aggregate* contains particles ranging from ¼ inch down to that retained on a 200-mesh screen. *Coarse aggregate* ranges from ¼ inch up to 1½ inch. (2) That which is installed for the purpose of changing drainage characteristics

**Alluvial Soils.** Soils developed from transported and relatively recently deposited material (alluvium) characterized by a weak modification (or none) of the original material by soil-forming processes.

**Alluvium.** A general term for all detrital material deposited or in transit by streams, including gravel, sand, silt, clay, and all variations and mixtures of these. Unless otherwise noted, alluvium is unconsolidated.

**Alternative Site Design.** Innovative site design practices have been developed as alternatives to traditional development to control storm water pollution and protect the ecological integrity of developing watersheds. Research has demonstrated that alternative site design can reduce impervious cover, runoff volume, pollutant loadings, and development costs when compared to traditional development.

**Alum Injection.** Injection of aluminum phosphate (alum), which has been used extensively as a flocculent in pond and lake management applications, for reducing concentrations of fine sediment and phosphorus in storm water discharges to eutrophic waterbodies.

**Anoxica.** Lack of oxygen.

**Anti-Seep Collar.** A device constructed around a pipe or other conduit placed through a dam, levee, or dike for the purpose of preventing soil movement and piping failures.

**Anti-Vortex Device.** A device placed at the entrance to a pipe conduit structure, such as a drop inlet spillway or hood inlet spillway, to prevent air from entering the structure when the pipe is flowing full.

**Apron.** A pad of nonerosive material designed to prevent scour holes from developing at the outlet ends of culverts, outlet pipes, grade stabilization structures, and other water control devices.

**Aquatic Bench.** A ten-foot wide bench located around the inside perimeter of a permanent pool that is normally vegetated with aquatic plants to provide pollutant removal.

**Aquifer.** An underground porous, water-bearing geological formation. The term is generally restricted to materials capable of yielding an appreciable supply of water.

**ASTM.** American Society for Testing Materials, an association that publishes standards and requirements for materials used in the construction industry.

**Barrel.** A conduit placed through a dam, levee, or dike to control the release of water.

**Baseflow.** The portion of streamflow that is not due to storm runoff but is the result of ground water discharge or discharge from lakes or similar permanent impoundments of water.

**Bearing Capacity.** The maximum load that a material can support before failing.

**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.

**Bentonite.** A highly plastic clay consisting of the minerals montmorillonite and beidellite that swell extensively when wet. Often used to seal soil to reduce seepage losses.

**Berm.** A man-made embankment consisting of a deposit of soil, rock, or other material, often used to form an impoundment for the purpose of confining or controlling water.

**Biochemical Oxygen Demand (BOD).** A measure of the quantity of organic material that can be decomposed through oxidation by microorganisms.

**Bioretention.** A practice to manage and treat storm water runoff by using a specially designed planting soil bed and planting materials to filter runoff stored in a shallow depression. The areas consist of a mix of elements, each designed to perform different functions in the removal of pollutants and attenuation of storm water runoff.

**Borrow Area.** A source of earth fill material used in the construction of embankments or other earth fill structures.

**Building Setbacks.** The distance between a structure and a property boundary (front, rear, or side) of the lot on which the structure is located.

**Capillary Action.** The tendency of drier soil particles to attract moisture from wetter portions of soil.

**Catch Basin.** A chamber usually built at the curb line of a street for the admission of surface water to a storm sewer or subdrain, having at its base a sediment sump designed to retain grit and detritus below the point of overflow.

**Catch Basin Inserts.** A structure, such as a tray, basket, or bag, that typically contains a pollutant removal medium (i.e., filter media) and a method for suspending the structure in the catch basin. They are placed directly inside of existing catch basins where storm water flows into the catch basin and is treated as it passes through the structure.

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**Channel.** A natural stream or excavated ditch that conveys water.

**Channel Stabilization.** Protecting the sides and bed of a channel from erosion by controlling flow velocities and flow directions using jetties, drops, or other structures and/or by lining the channel with vegetation, riprap, concrete, or other suitable lining material.

**Channelization.** Alteration of a stream channel by widening, deepening, straightening, or paving certain areas to improve flow characteristics.

**Check Dams.** Small temporary dams constructed across a swale or drainage ditch to reduce the velocity of concentrated storm water flows.

**Chicken Wire.** A woven wire fabric with an opening size of about 1½ inches.

**Chute.** A high-velocity, open channel for conveying water down a steep slope without erosion.

**Clay.** (1) Soil fraction consisting of particles less than 0.002 mm in diameter. (2) A soil texture class that is dominated by clay or at least has a larger proportion of clay than either silt or sand.

**Coagulant.** A chemical added to wastewater or storm water that destabilizes the surface charge of fine particles, allowing the particles to come together to form larger particles that can be more easily removed by gravity, settling, and other physical treatment processes. Alum is a common coagulant used in lake management applications and sometimes used for storm water treatment.

**Cohesion.** The capacity of a soil to resist shearing stress, exclusive of functional resistance.

**Cohesive Soil.** A soil that, when unconfined, has considerable strength when air-dried and significant strength when saturated.

**Combined Sewer Overflows (CSOs).** Combined sewers collect both storm water runoff and sanitary wastewater in a single set of sewer pipes. When combined sewers do not have enough capacity to carry all the runoff and wastewater or the receiving water pollution control plant cannot accept all the combined flow, the combined wastewater overflows from the collection system into the nearest body of water, creating a CSO.

**Companion (Nurse) Crop.** A crop sown with another crop that will germinate quickly and provide a protective vegetative cover until the preferred species can become established. The crop, usually small grain, is sown with a legume or perennial grass species.

**Compost.** Organic residue (or a mixture of organic residue and soil) that has undergone biological decomposition until it has become relatively stable humus.

**Contour.** An imaginary line on the surface of the earth connecting points of the same elevation.

**Cultipacker Seeder.** A seeder equipped with an attachment that will firm the seedbed to increase seed-to-soil contact.

**Cut.** (1) A portion of land surface or area from which earth has been removed or will be removed by excavation. (2) The depth below the original ground surface to the excavated surface.

**Cutoff Trench.** A long, narrow excavation (keyway) constructed along the center line of a dam, dike, levee, or embankment and filled with relatively impervious material intended to reduce seepage of water through porous strata.

**Cutting.** A detached leaf stem or piece of root that is encouraged to form roots. A *greenwood cutting* is made during the period of active growth. A *hardwood cutting* is made during the dormant season.

**Cut-and-Fill.** The process of earth grading by excavating part of a higher area and using the excavated material for fill to raise the surface of an adjacent lower area.

**Dam.** A barrier to confine or impound water for storage or diversion, to prevent gully erosion, or to retain soil, sediment, or other debris.

**Deep Sump Catch Basins.** Storm drain inlets that typically include a grate or curb inlet and a sump to capture trash, debris and some sediment, and oil and grease. Also known as an oil and grease catch basin.

**Deicers.** Materials applied to reduce icing on paved surfaces. These consist of salts and other formulated materials that lower the melting point of ice, including sodium chloride, calcium chloride, calcium magnesium acetate, and blended products consisting of various combinations of sodium, calcium, magnesium, chloride, and other constituents.

**Deicing Constituents.** Additives included in deicing materials to prevent caking and inhibit corrosion.

**Design Life.** The period of time for which a measure or practice is expected to perform its intended function.

**Desilting Area.** An area of grass, shrubs, or other vegetation used for inducing deposition of silt and other debris from flowing water. Located above a stock tank, pond, field, or other area needing protection from sediment accumulation.

**Detention.** Managing storm water runoff by temporary holding and controlled release.

**Detention Time.** The theoretical time required to displace the contents of a tank or unit at a given rate of discharge (volume divided by rate of discharge).

**Dewatering.** The removal of water temporarily impounded in a holding basin.

**d<sub>50</sub>.** A term used to define rock gradations. In a representative sample, 50% of the rock fragments will have a diameter larger than the d<sub>50</sub> size and 50% will be smaller.

**Dibble Bar.** A heavy metal tool with a blade and foot pedal used to open holes for planting seeds, sprigs, cuttings or seedlings.

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**Dike.** An embankment to confine or control water. Often built along the banks of a river to prevent overflow of lowlands; a levee.

**Discharge.** Usually the rate of water flow. A volume of fluid passing a point per unit of time, commonly expressed as cubic feet per second, cubic meters per second, gallons per minute, or millions of gallons per day.

**Dissolved Pollutants.** Non-particulate pollutants typically removed through removal mechanisms such as adsorption, biological uptake, chemical precipitation or ion exchange.

**Diversion.** A channel with a supporting ridge on the lower side constructed at the top, across, or bottom of a slope for the purpose of controlling surface runoff.

**Diversion Dike.** A barrier built to divert surface runoff.

**Divide (Drainage).** The boundary between watersheds.

**Downstream Analysis.** Calculation of peak flows, velocities, and hydraulic effects at critical downstream locations to ensure that proposed projects do not increase post-development peak flows and velocities at these locations.

**Drain.** A buried slotted or perforated pipe or other conduit (*subsurface drain*) or a ditch (*open drain*) for carrying off surplus ground water or surface water.

**Drainage.** The removal of excess surface water or ground water from land by means of ditches or subsurface drains. Also see *Natural Drainage*.

**Drainage (Soil).** As a natural condition of the soil, drainage refers to both the frequency and duration of periods when the soil is free of saturation. Drainage conditions are defined as:

*Well drained* – Excess water drains away rapidly, and no mottling occurs within 36 inches of the surface.

*Moderately well drained* – Water is removed from the soil somewhat slowly, resulting in small but significant periods of wetness, and mottling occurs between 18 and 36 inches.

*Somewhat poorly drained* – Water is removed from the soil slowly enough to keep it wet for significant periods but not all of the time, and mottling occurs between 8 to 18 inches.

*Poorly drained* – Water is removed so slowly that it is wet for a large part of the time, and mottling occurs between 0 and 8 inches.

*Very poorly drained* – Water is removed so slowly that the water table remains at or near the surface for the greater part of the time; there may also be periods of surface ponding; the soil has a black to gray surface layer with mottles up to the surface.

**Drainage Area.** The area draining into a stream at a given point. It may be of different sizes for surface runoff, subsurface flow and base flow, but generally the surface runoff area is considered as the drainage area.

**Drainageway.** A natural or artificial depression that carries surface water to a larger watercourse or outlet, such as a river, lake, or bay.

**Drawdown.** Lowering of the water surface in an open channel, lake or ground water.

**Drop Inlet.** A structure in which water drops through a vertical riser connected to a discharge conduit or storm sewer.

**Drop Spillway.** A structure in which the water drops over a vertical wall onto an apron at a lower elevation.

**Drop Structure.** A structure for dropping water to a lower level and dissipating its surplus energy without erosion.

**Dry Detention Pond.** Storm water basin designed to capture, temporarily hold, and gradually release a volume of storm water runoff to attenuate and delay storm water runoff peaks. Dry detention ponds provide water quantity control (peak flow control and stream channel protection) as opposed to water quality control. Also known as “dry ponds” or “detention basins.”

**Dry Well.** Small excavated pits or trenches filled with aggregate that receive clean storm water runoff primarily from building rooftops. Dry wells function as infiltration systems to reduce the quantity of runoff from a site. The use of dry wells is applicable for small drainage areas with low sediment or pollutant loadings and where soils are sufficiently permeable to allow reasonable rates of infiltration.

**Earth Dam.** A dam constructed of compacted suitable soil materials.

**Earth Embankment.** A man-made deposit of soil, rock, or other material often used to form an impoundment.

**Emergency Spillway.** Usually a vegetated earth channel used to safely convey flood discharges around an impoundment structure.

**Energy Dissipater.** A device used to reduce the energy of flowing water to prevent erosion.

**Environment.** The sum total of all the external conditions that may act upon a living organism or community to influence its development or existence.

**Erodibility.** Susceptibility to erosion.

**Erosion.** The wearing away of the land surface by water, wind, ice, gravity, or other geological agents. The following terms are used to describe different types of water erosion:

*Accelerated erosion* – Erosion much more rapid than normal or geologic erosion, primarily as a result of the activities of man.

*Channel erosion* – An erosion process whereby the volume and velocity of flow wears away the bed and/or banks of a well-defined channel.

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*Gully erosion* – An erosion process whereby runoff water accumulates in narrow channels and, over relatively short periods, removes the soil to considerable depths ranging from 1-2 feet to as much as 75-100 feet.

*Rill erosion* – An erosion process in which numerous small channels only several inches deep are formed; occurs mainly on recently disturbed and exposed soils (*see Rill*).

*Splash erosion* – The spattering of small soil particles caused by the impact of raindrops on wet soils; the loosened and spattered particles may or may not be subsequently removed by surface runoff.

*Sheet erosion* – The gradual removal of a fairly uniform layer of soil from the land surface by runoff water.

**Erosion and Sediment Control.** A measure placed, constructed on, or applied to the landscape that prevents or curbs the detachment of soil, its movement and/or deposition.

**Erosion and Sediment Control System.** The use of appropriate erosion and sediment control measures to minimize sedimentation by first reducing or eliminating erosion at the source and then as necessary, trapping sediment to prevent a discharge from the construction site.

**Excess Rainfall.** The amount of rainfall that runs directly off an area.

**Filter Blanket.** A layer of sand and/or gravel designed to prevent the movement of fine-grained soils.

**Filter Fabric.** A woven or non-woven, water-permeable material generally made of synthetic products such as polypropylene and used to trap sediment or prevent the movement of fine soil particles. Often used instead of a filter blanket.

**Filter Strip.** Usually a long, relatively narrow area of undisturbed or planted vegetation used to retard or collect sediment for the protection of watercourses, reservoirs, or adjacent properties.

**Filtering Practices.** Practices that capture and store storm water runoff and pass it through a filtering media such as sand, organic material, or soil for pollutant removal. Storm water filters are primarily water quality control devices designed to remove particulate pollutants and, to a lesser degree, bacteria and nutrients.

**Flood Peak.** The highest stage or greatest discharge attained by a flood event, thus peak stage or peak discharge.

**Flood Stage.** The stage at which overflow of the natural banks of a stream begins.

**Floodplain.** The lowland that borders a stream and is subject to flooding when the stream overflows its banks.

**Floodway.** A channel (either natural, excavated, or bounded by dikes and levees) used to carry flood flows.

**Flow Splitter.** An engineered, hydraulic structure designed to divert a percentage of storm water to a treatment practice located outside of the primary channel, direct storm water to a parallel pipe system, or bypass a portion of baseflow around a treatment practice.

**Flume.** A constructed channel lined with erosion-resistant materials used to convey water on steep grades without erosion.

**Foundation Drain.** A pipe or series of pipes that collects ground water from the foundation or footing of structures to improve stability.

**Freeboard.** A vertical distance between the elevation of the design high-water and the top of a dam, diversion ridge, or other water control device.

**Full Sedimentation Design.** Storm water filter system design involving storage and pretreatment of the entire water quality volume.

**Gabion.** A wire mesh cage, usually rectangular, filled with rock and used to protect channel banks and other sloping areas from erosion.

**Gauge.** (1) A device for measuring precipitation, water level, discharge, velocity, pressure, temperature, etc. (2) A measure of the thickness of metal.

**Gauging Station.** A selected section of a stream channel equipped with a gauge, stage recorder, or other facilities for determining stream stage and discharge.

**Geotextile Fabric.** A woven or non-woven, water-permeable synthetic material used to trap sediment particles or prevent the clogging of aggregates with fine-grained soil particles.

**Geotextile Liner.** A synthetic, impermeable fabric used to seal impoundments against leaks.

**Grab Strength.** A measure of the tensile strength for geotextiles, in elongation, as defined in ASTM-4632.

**Gradation.** The distribution of the various-sized particles that constitute a sediment, soil, or other material, such as riprap.

**Grade.** (1) The slope of a road, a channel, or natural ground. (2) The finished surface of a canal bed, roadbed, top of embankment, or bottom of excavation; any surface prepared to a design elevation for the support of construction, such as paving or the laying of a conduit. (3) To finish the surface of a canal bed, roadbed, top of embankment, or bottom of excavation, or other land area to a smooth, even condition.

**Grade Stabilization Structure.** A structure for the purpose of stabilizing the grade of a gully or other watercourse, thereby preventing further head-cutting or lowering of the channel bottom.

**Gradient.** (1) A change of elevation, velocity, pressure, or other characteristics per unit length. (2) Slope.

**Grading.** The cutting/or filling of the land surface to a desired slope or elevation.



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**Grass.** A member of the botanical family Gramineae, characterized by blade-like leaves that originate as a sheath wrapped around the stem.

**Grass Drainage Channels.** Traditional vegetated open channels, typically trapezoidal, triangular, or parabolic in shape, whose primary function is to provide non-erosive conveyance, typically up to the 10-year frequency design flow. They provide limited pollutant removal through filtration by grass or other vegetation, sedimentation, biological activity in the grass/soil media, as well as limited infiltration if underlying soils are pervious.

**Grassed Waterway.** A natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses and used to safely conduct surface water from an area.

**Ground Cover (Horticulture).** Low-growing, spreading plants useful for low-maintenance landscape areas.

**Ground Water Recharge** The process by which water seeps into the ground, eventually replenishing ground water aquifers and surface waters such as lakes, streams, and oceans. This process helps maintain water flow in streams and wetlands and preserves water table levels that support drinking water supplies.

**Ground Water Recharge Volume (GRV).** The post-development design recharge volume (i.e., on a storm event basis) required to minimize the loss of annual predevelopment ground water recharge. The GRV is determined as a function of annual predevelopment recharge for site-specific soils or surficial materials, average annual rainfall volume, and amount of impervious cover on a site.

**Habitat.** The environment in which the life needs of a plant or animal are supplied.

**Hardware Cloth.** A welded wire fabric, typically with square openings of one inch or less.

**Head.** (1) The height of water above any plane of reference. (2) The energy, either kinetic or potential, possessed by each unit weight of a liquid, expressed as the vertical height through which a unit would have to fall to release the average energy possessed. Used in various compound terms, such as pressure head or velocity head.

**Head Loss.** Energy loss due to friction, eddies, changes in velocity, elevation, or direction of flow.

**Headwater.** (1) The source of a stream. (2) The water upstream from a structure or point on a stream.

**Heavy Metals.** Metals such as copper, zinc, barium, cadmium, lead, and mercury, which are natural constituents of the earth's crust. Heavy metals are stable and persistent environmental contaminants since they cannot be degraded or destroyed.

**Hydraulic Conductivity.** The rate at which water moves through a saturated porous media under a unit potential-energy gradient. It is a measure of the ease of water movement in soil and is a function of the fluid as well as the porous media through which the fluid is moving.

**Hydraulic Head.** The kinetic or potential energy of a unit weight of water expressed as the vertical height of water above a reference datum.

**Hydrocarbons.** Inorganic compounds consisting of carbon and hydrogen, including petroleum hydrocarbons derived from crude oil, natural gas, and coal.

**Hydrodynamic Separators.** A group of storm water treatment technologies designed to remove large particle total suspended solids and large oil droplets, consisting primarily of cylindrical-shaped devices that are designed to fit in or adjacent to existing storm water drainage systems. The most common mechanism used in these devices is vortex-enhanced sedimentation, where storm water enters as tangential inlet flow into the side of the cylindrical structure. As the storm water spirals through the chamber, the swirling motion causes the sediments to settle by gravity, removing them from the storm water.

**Hydrograph.** A graph showing for a given point on a stream the discharge, stage (depth), velocity, or other property of water with respect to time.

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

**Hydrologic Zones.** Planting zones that reflect the degree and duration of inundation by water, consisting of a deep water pool, shallow water bench, shoreline fringe, riparian fringe, floodplain terrace, and upland slopes.

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

**Hydromulching.** The process of applying mulch hydraulically in a water medium.

**Hydroseeder.** The machine/equipment used to disseminate seed hydraulically in a water medium. Mulch, lime, and fertilizer can be incorporated into the sprayed mixture.

**Illicit Discharges.** Unpermitted discharges to waters of the state that do not consist entirely of storm water or uncontaminated ground water except certain discharges identified in the Indiana Department of Environmental Management Phase II Storm Water General Permit.

**Impaired Waters [303(d) List].** Those water bodies not meeting water quality standards. This list of impaired waters within each state is referred to as the "303(d) List" and is prepared pursuant to Section 303(d) of the Federal Clean Water Act.

**Impervious.** Not allowing infiltration.

**Impervious Surfaces.** Surfaces that cannot infiltrate rainfall, including rooftops, pavement, sidewalks, and driveways.

**Impoundment.** Generally, an artificial water storage area, such as a reservoir, pit, dugout, sump, etc.

**INDOT.** Indiana Department of Transportation. Generally used here to refer to specifications contained in the publication "INDOT Standard Specifications."

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**Infiltration Practices.** Storm water treatment practices designed to capture storm water runoff and infiltrate it into the ground over a period of days, including infiltration trenches and infiltration basins.

**Infiltration Rate.** A soil characteristic determining or describing the maximum rate at which water can enter the soil under specific conditions.

**Inoculum.** A culture of microorganisms intentionally introduced into a medium, such as seed, soil, or compost.

**Integrated Pest Management (IPM).** An approach to pesticide usage that combines monitoring; pest trapping; establishment of action thresholds; use of resistant varieties and cultivars; cultural, physical, and biological controls; and precise timing and application of pesticide treatments to avoid the use of chemical pesticides when possible and use the least toxic pesticide that targets the pest of concern, when pesticide usage is unavoidable.

**Intermittent Stream.** A stream or a portion of a stream that flows only in direct response to precipitation. It receives little or no water from springs and no long-continued supply from melting snow or other sources. It is dry for a large part of the year, ordinarily more than three months.

**Invert.** The inside bottom of a culvert or other conduit.

**Keyway.** A cutoff trench dug beneath the entire length of a dam to cut through soil layers that may cause seepage and possible dam failure.

**Lagtime.** The interval between the center of mass of the storm precipitation and peak flow of the resultant runoff.

**Laminar Flow.** Flow at relatively slow velocity in which fluid particles slide smoothly along straight lines everywhere parallel to the axis of a channel or pipe.

**Land Capability.** The suitability of land for use. Land capability classification involves consideration of: (1) the risks of damage from erosion and other causes and (2) the difficulties in land use owing to physical land characteristics, including climate.

**Land Use Controls.** Methods for regulating the uses to which a given land area may be put, including such things as zoning, subdivision regulation, and floodplain regulation.

**Legume.** Any member of the pea or pulse family, which includes peas, beans, peanuts, clover, alfalfa, sweet clover, lespedeza, vetch, black locust, and kudzu. Practically all legumes are nitrogen-fixing plants.

**Liquid Limit.** The moisture content at which the soil passes from a plastic to a liquid state.

**Loam.** A soil textural classification in which the proportions of sand, silt, and clay are well balanced. Loams have the best properties for cultivation of plants.

**Low Flow Orifice.** Principal outlet of a storm water treatment practice to convey flows above the permanent pool elevation.

**Low Impact Development (LID).** Low impact development is a site design strategy intended to maintain or replicate predevelopment hydrology through the use of small-scale controls integrated throughout the site to manage runoff as close to its source as possible.

**Mean Depth.** (1) Average depth. (2) Cross-sectional area of a stream or channel divided by its surface or top width.

**Mean Velocity.** Average velocity of a stream flowing in a channel or conduit at a given cross section or in a given reach. It is equal to the discharge divided by the cross-sectional area of the reach.

**Media Filters.** These devices consist of media, such as pleated fabric, activated charcoal, perlite, amended sand and perlite mixes, or zeolite placed within filter cartridges that are typically enclosed in concrete vaults. Storm water is passed through the media, which traps particulates and/or soluble pollutants.

**Micropool.** A smaller permanent pool that is incorporated into the design of a larger storm water pond to avoid resuspension of particles.

**Mulch.** A natural or artificial layer of plant residue or other materials covering the land surface which conserves moisture, holds soil in place, aids in establishing plant cover, and minimizes temperature fluctuations.

**Mullen Burst Test.** A standardized test used to test the strength of geotextile fabrics to bursting pressures.

**Municipal Separate Storm Sewer System (MS4).** Conveyances for storm water including but not limited to roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains owned or operated by any municipality, sewer or sewage district, fire district, state agency or federal agency and discharging directly to surface waters of the state.

**Native Plants.** Plants that are adapted to the local soil and rainfall conditions and that require minimal watering, fertilizer, and pesticide application.

**Natural Drainage.** The flow patterns of storm water runoff over the land in its predevelopment state.

**Nitrate.** One of the forms of nitrogen found in aquatic ecosystems. It is produced during nitrification and denitrification by bacteria. Nitrate is the most completely oxidized state of nitrogen commonly found in water, and is the most readily available state utilized for plant growth.

**Nitrite.** A form of nitrogen that is the end product of nitrification, which is produced by *Nitrobacter spp.* Nitrate is also the initial substrate for denitrification.

**Nitrogen Fixation.** The conversion of atmospheric nitrogen into stable compounds usable by plants. Carried out by bacteria that colonize the roots of most legumes.

**Node (Botany).** The point on a plant stem at which a leaf or leaves arise. Creeping stems (i.e., rhizomes and stolons), and in some plants the upright stems, produce roots at the nodes.

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**Nonpoint Source Pollution.** Pollution that enters a waterbody from diffuse origins on the watershed and does not result from discernable, confined, or discrete conveyances.

**Non-Routine Maintenance.** Corrective measures taken to repair or rehabilitate storm water controls to proper working condition. Non-routine maintenance is performed as needed, typically in response to problems detected during routine maintenance and inspections.

**Non-Structural Controls.** Pollution control techniques, such as management actions and behavior modification, that do not involve the construction or installation of devices.

**Normal Depth.** Depth of flow in an open conduit during uniform flow for the given conditions.

**Nutrients.** (1) A substance necessary for the growth and reproduction of organisms. (2) In water, those substances (chiefly nitrates and phosphates) that promote growth of algae and bacteria.

**Oil/Particle Separators.** Consist of one or more chambers designed to remove trash and debris and to promote sedimentation of coarse materials and separation of free oil (as opposed to emulsified or dissolved oil) from storm water runoff. Oil/particle separators are typically designed as off-line systems for pretreatment of runoff from small impervious areas and therefore provide minimal attenuation of flow. Also called oil/grit separators, water quality inlets, and oil/water separators.

**Open Drain.** A natural watercourse or constructed open channel that conveys drainage water.

**Open Space Development.** A compact form of development that concentrates density in one portion of the site in exchange for reduced density elsewhere. Also known as cluster or conservation development.

**Outfall.** The point, location, or structure where wastewater or drainage discharges from a sewer to a receiving body of water.

**Outlet.** The point of water disposal from a stream, river, lake, tidewater, or artificial drain.

**Outlet Channel.** A waterway constructed or altered primarily to carry water from man-made structures, such as smaller channels, tile lines, and diversions.

**Outside Valley.** The spacing or width of corrugations for corrugated metal pipe.

**Partial Sedimentation Design.** Storm water filter system design involving storage and pretreatment of a portion of the water quality volume.

**Peak Discharge.** The maximum instantaneous flow from a given storm condition at a specific location.

**Peak Flow Control.** Criteria intended to address increases in the frequency and magnitude of a range of potential flood conditions resulting from development. They include stream channel protection, conveyance protection, peak runoff attenuation, and emergency outlet sizing.

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

**Percolation Rate.** The rate, usually expressed as inches per hour or inches per day, at which water moves through the soil profile.

**Perennial Stream.** A stream that maintains water in its channel throughout the year.

**Performance Monitoring.** Collection of data on the effectiveness of individual storm water treatment practices.

**Permanent (Wet) Pool.** An area of a detention basin or flood control project that has a fixed water surface elevation due to a manipulation of the outlet structure.

**Permeability (Soil).** The quality of a soil that enables water or air to move through it. Usually expressed in inches per hour or inches per day.

**Permeability Rate.** The rate at which water will move through a saturated soil. Permeability rates are classified as:

*Very slow* – Less than 0.06 inch/hour

*Slow* – 0.06 to 0.20 inch/hour

*Moderately slow* – 0.20 to 0.63 inch/hour

*Moderate* – 0.63 to 2.0 inch/hour

*Moderately rapid* – 2.0 to 6.3 inch/hour

*Rapid* – 6.3 to 20.0 inch/hour

*Very rapid* – more than 20.0 inch/hour

**Permeable Paving Materials.** Materials that are alternatives to conventional pavement surfaces and that are designed to increase infiltration and reduce storm water runoff and pollutant loads. Alternative materials include modular concrete paving blocks, modular concrete or plastic lattice, cast-in-place concrete grids, and soil enhancement technologies. Stone, gravel, and other low-tech materials can also be used as alternatives for low traffic applications such as driveways, haul roads, and access roads.

**Permittivity.** The volumetric flow rate of water per unit cross-sectional area per unit head under laminar flow conditions, in the normal direction generally through a geotextile.

**Pervious.** Allowing movement of water.

**Pesticides.** Chemical compounds used for the control of undesirable plants, animals, or insects. The term includes insecticides, herbicides, algicides, rodenticides, nematocides, fungicides and growth regulators.

**pH.** A numerical measure of hydrogen ion activity, the neutral point being 7.0. All pH values below 7.0 are acid, and all above are alkaline.

**Phase II Storm Water.** The second phase of the National Pollutant Discharge Elimination System program which specifically targets certain regulated small municipal separate storm sewer system communities and construction activity disturbing between one and five acres of land.

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**Phosphorus (Available).** Inorganic phosphorus that is readily available for plant growth.

**Physiographic Region (Province).** Large-scale unit of land defined by its climate, geology, and geomorphic history, and therefore uniform in physiography.

**Piping.** The formation of “pipes” by underground erosion. Water in the soil carries the fine soil particles away, and a series of eroded tubes of tunnels develop. These openings will grow progressively larger and can cause a dam failure.

**Plastic Limit.** The moisture content at which a soil changes from a semi-solid to a plastic state.

**Plasticity Index.** The numerical difference between the liquid limit and the plastic limit of soil. The range of moisture content within which the soil remains plastic.

**Plunge Pool.** A basin used to dissipate the energy of flowing water. Usually constructed to a design depth and shape. The pool may be protected from erosion by various lining materials.

**Point Source.** Any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, land-fill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged (Public Law 92-500, Section 502[14]).

**Porosity.** The volume of pore space in soil or rock.

**Porous Pavement (Pervious).** Porous pavement is similar to conventional asphalt or concrete but is formulated to have more void space for greater water passage through the material.

**Pretreatment.** Techniques used in storm water management to provide storage and removal of coarse materials, floatables, or other pollutants before the primary treatment practice.

**Primary Storm Water Treatment Practice.** Storm water treatment practices that are capable of providing high levels of water quality treatment as stand-alone devices; can be grouped into five major categories: storm water ponds, storm water wetlands, infiltration practices, filtering practices, and water quality swales.

**Principal Spillway.** A dam spillway generally constructed of permanent material and designed to regulate the normal water level, provide flood protection, and/or reduce the frequency of operation of the emergency spillway.

**Rain Barrels.** Barrels designed to retain small volumes of runoff for reuse for gardening and landscaping. They are applicable to residential, commercial, and industrial sites and can be incorporated into a site’s landscaping plan. The size of the rain barrel is a function of rooftop surface area and the design storm to be stored.

**Rainfall Intensity.** The rate at which rain is falling at any given instant, usually expressed in inches per hour.

**Rain Garden.** Functional landscape elements that combine plantings in depressions that allow water to pool for

only a few days after a rainfall then be slowly absorbed by the soil and plantings.

**Rainwater Harvesting.** The collection and conveyance of rainwater from roofs and storage in either rain barrels or cisterns. Depending on the type and reuse of the rainwater, purification may be required prior to distribution of the rainwater for reuse. Harvested rainwater can be used to supply water for drinking, washing, irrigation, and landscaping.

**Rational Method.** A means of computing storm drainage flow rates (Q) by use of the formula  $Q=CIA$ , where C is a coefficient describing the physical drainage area, I is the rainfall intensity and A is the area.

**Reach.** The smallest subdivision of the drainage system, consisting of a uniform length of open channel. Also, a discrete portion of river, stream or creek. For modeling purposes, a reach is somewhat homogeneous in its physical characteristics.

**Receiving Stream.** The body of water into which runoff or effluent is discharged.

**Recharge.** Replenishment of ground water reservoirs by infiltration and transmission from the outcrop of an aquifer or from permeable soils.

**Recharge Basin.** A basin provided to increase infiltration for the purpose of replenishing ground water supplies.

**Retention.** The storage of storm water to prevent it from leaving the development site. May be temporary or permanent.

**Retention Structure.** A natural or artificial basin that functions similar to a detention structure except that it maintains a permanent water supply.

**Retention (or Residence) Time.** The average length of time that a “parcel” of water spends in a storm water pond or other waterbody.

**Revetment.** Facing of stone or other material, either permanent or temporary, placed along the edge of a stream to stabilize the bank and protect it from the erosive action of the stream. Also see *Riprap*.

**Rhizome.** A modified plant stem that grows horizontally underground. A rhizomatous plant spreads (reproduces) vegetatively and can be transplanted with rhizome fragments.

**Rill.** A small intermittent watercourse with steep sides, usually only a few inches deep.

**Riparian.** Of, on, or pertaining to the banks of a stream, river, or pond.

**Riparian Rights.** A principle of common law requiring that any user of waters adjoining or flowing through his lands must use and protect them in a manner that will enable his neighbor to utilize the same waters undiminished in quantity and undefiled in quality.

**Riprap.** Broken rock, cobble, or boulders placed on earth surfaces, such as the face of a dam or the bank of a stream,



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for protection against the action of water (waves). Revetment riprap is material graded such that (1) no individual piece weighs more than 120 lbs. and (2) 90–100% will pass through a 12-inch sieve, 20–60% through a 6-inch sieve, and not more than 10% through a 1½-inch sieve.

**Riser.** The inlet portions of a drop inlet spillway that extend vertically from the pipe conduit barrel to the water surface.

**Routine Maintenance.** Maintenance performed on a regular basis to maintain proper operation and aesthetics.

**Runoff.** That portion of precipitation that flows from a drainage area on the land surface, in open channels, or in storm water conveyance systems.

**Runoff Capture Volume (RCV).** The runoff capture volume is equivalent to the water quality volume (WQV) and is the storm water runoff volume generated by the first inch of rainfall on the site.

**Safety Bench.** A flat area above the permanent pool and surrounding a storm water pond or wetland to provide separation from the pool and adjacent slopes.

**Sand.** (1) Soil particles between 0.05 mm and 2.0 mm in diameter. (2) A soil textural class inclusive of all soils that are at least 70% sand and 15% or less clay.

**Saturation.** In soils, the point at which a soil or aquifer will no longer absorb any amount of water without losing an equal amount.

**Scour(ing).** The clearing and digging action of flowing water, especially the downward erosion caused by stream water in seeping away mud and silt from the stream bed and outside bank of a curved channel.

**Seasonally High Ground Water Table.** The highest elevation of the ground water table typically observed during the year.

**Secondary Storm Water Treatment Practices.** Storm water treatment practices that may not be suitable as stand-alone treatment because they either are not capable of meeting the water quality treatment performance criteria or have not yet received the thorough evaluation needed to demonstrate the capabilities for meeting the performance criteria.

**Sediment.** Solid material (both mineral and organic) that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface.

**Sediment Chamber or Forebay.** An underground chamber or surface impoundment (i.e., forebay) designed to remove sediment and/or floatables prior to a primary or other secondary storm water treatment practice.

**Sediment Delivery Ratio.** The fraction of the soil eroded from upland sources that actually reaches a stream channel or storage reservoir.

**Sediment Discharge.** The quantity of sediment, measured in dry weight or by volume, transported through a stream

cross section in a given time. Sediment discharge consists of both suspended load and bedload.

**Sediment Pool.** The reservoir space allotted to the accumulation of sediment during the life of the structure.

**Sedimentation.** The settling and accumulation of unconsolidated sediment carried by runoff.

**Seedbed.** Soil prepared by natural or artificial means to promote the germination of seed and the growth of seedlings.

**Seedling.** A young plant grown from seed.

**Settling Basin.** An enlargement in the channel of a stream to permit the settling of debris carried in suspension.

**Shallow Marsh.** The portion of a storm water wetland that consists of aquatic vegetation within a permanent pool ranging in depth from 6 inches to 18 inches during normal conditions.

**Shared Parking.** A strategy that reduces the number of parking spaces needed by allowing adjacent land uses with different peak parking demands to share parking lots.

**Shoot.** The aboveground portion of a plant.

**Silt.** (1) Soil fraction consisting of particles between 0.002 mm and 0.05 mm in diameter. (2) A soil textural class indicating more than 80% silt.

**Site Planning and Design.** Techniques of engineering and landscape design that maintain predevelopment hydrologic functions and pollutant removal mechanisms to the extent practical.

**Site Storm Water Management Plan.** Plan describing the potential water quality and quantity impacts associated with a development project both during and after construction. It also identifies selected source controls and treatment practices to address those potential impacts, the engineering design of the treatment practices, and maintenance requirements for proper performance of the selected practices.

**Slope.** Degree of deviation of a surface from the horizontal measured as a numerical ratio or percent. Expressed as a ratio, the first number is the horizontal distance (run) and the second is the vertical distance (rise) (e.g., 2:1). Slope can also be expressed as the rise over the run (e.g., a 2:1 slope is a 50% slope).

**Soil.** The unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. Also see *Alluvial Soils, Clay, Cohesive Soil, Loam, Permeability (Soil), Sand, Silt, Soil Horizon, Soil Profile, Subsoil, Surface Soil, and Topsoil*.

**Soil and Water Conservation District (SWCD).** A public organization created under state law as a special-purpose district to develop and carry out a program of soil, water, and related resource conservation, use, and development within its boundaries. Usually a subdivision of state government with a local governing body but having limited authorities.

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**Soil Horizon.** A horizontal layer of soil that, through processes of soil formation, has developed characteristics distinct from the layers above and below.

**Soil Infiltration Capacity.** The maximum rate at which water can infiltrate into the soil from the surface.

**Soil Profile.** A vertical section of the soil from the surface through all horizons.

**Soil Structure.** The relation of particles that impart to the whole soil a characteristic manner of breaking (e.g., crumb, block, platy, or columnar structure).

**Soil Texture.** The physical structure or character of soil determined by the relative proportions of the soil separates (sand, silt, and clay) of which it is composed.

**Soluble Phosphorus.** Soluble phosphorus is present predominantly as the ionic species orthophosphate and is thought to be the form readily taken up by plants (i.e., “bioavailable”).

**Source Controls.** Practices to limit the generation of storm water pollutants at their source.

**Specific Gravity.** The ratio of (1) the weight in air of a given volume of soil solids at a stated temperature to (2) the weight in air of an equal volume of distilled water at a stated temperature.

**Spillway.** (1) A passage, such as a paved apron or channel, for surplus water to flow over, around, or through a dam or similar structure. (2) An open or closed channel, or both, used to convey excess water from a reservoir. It may contain gates, either manually or automatically controlled, to regulate the discharge of excess water. Also see *Emergency Spillway*, *Principal Spillway*.

**Sprig.** Section of plant stem material (rhizome, shoot, or stolon) used in vegetative planting.

**Stolon.** Modified plant stem that grows horizontally on the soil surface.

**Storm Event.** An estimate of the expected amount of precipitation within a given period of time. For example, a 10-year frequency, 24-hour duration storm event is a storm that has a 10% probability of occurring in any one year. Precipitation is measured over a 24-hour period.

**Storm Frequency.** The time interval between major storms of predetermined intensity and volumes of runoff (e.g., a 5-year, 10-year or 20-year storm).

**Storm Sewer.** A sewer that carries storm water, surface drainage, street wash, and other wash waters but excludes sewage and industrial wastes. Also called a storm drain.

**Storm Water Hotspots.** Land uses or activities with potential for higher pollutant loads.

**Storm Water Pollution Prevention Plan (SWPPP).** Identifies potential sources of pollution and outlines specific management activities designed to minimize the introduction of pollutants into storm water.

**Storm Water Ponds.** Vegetated ponds that retain a permanent pool of water and are constructed to provide both treatment and attenuation of storm water flows.

**Storm Water Retrofits.** Modifications to existing development to incorporate source controls and structural storm water treatment practices to remedy problems associated with, and improve water quality mitigation functions of, older, poorly designed, or poorly maintained storm water management systems.

**Storm Water Treatment Practices.** Devices constructed for primary treatment, pretreatment or supplemental treatment of storm water.

**Storm Water Treatment Train.** Storm water treatment practices, as well as site planning techniques and source controls, combined in series to enhance pollutant removal or achieve multiple storm water objectives.

**Storm Water Wetlands.** Shallow, constructed pools that capture storm water and allow for the growth of characteristic wetland vegetation.

**Stream.** See *Intermittent Stream*, *Perennial Stream*, *Receiving Stream*.

**Stream Gauging.** The quantitative determination of stream flow using gauges, current meters, weirs, or other measuring instruments at selected locations (see *Gauging Station*).

**Streambanks.** The usual boundaries (not the flood boundaries) of a stream channel. Right and left banks are named facing downstream.

**Street Sweepers.** Equipment to remove particulate debris from roadways and parking lots, including mechanical broom sweepers, vacuum sweepers, regenerative air sweepers and dry vacuum sweepers.

**Structural Controls.** Devices constructed for temporary storage and treatment of storm water runoff.

**Submerged Aquatic Vegetation (SAV).** Includes rooted, vascular, flowering plants that live permanently submerged below the water in coastal, tidal and navigable waters.

**Subsoil.** The B horizons of soils with distinct profiles. In soils with weak profile development, the subsoil can be defined as the soil below which roots do not normally grow.

**Subsurface Drain.** A pervious backfilled trench, usually containing stone and perforated pipe, for intercepting ground water or seepage.

**Subwatershed.** A watershed subdivision of unspecified size that forms a convenient natural unit.

**Surface Runoff.** Precipitation that flows onto the surfaces of roofs, streets, the ground, etc. and is not absorbed or retained by that surface but collects and runs off.

**Surface Soil.** The uppermost part of the soil ordinarily moved in tillage or its equivalent in an uncultivated soil. Frequently referred to as the plow layer, the Ap layer, or the Ap horizon. Surface soil is usually darker in color due to the presence of organic matter.

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**Suspended Solids.** Solids either floating or suspended in water or sewage and other liquid wastes.

**Swale.** An elongated depression in the land surface that is at least seasonally wet, is usually heavily vegetated, and is normally without flowing water. Swales conduct storm water into primary drainage channels and may provide some ground water recharge.

**Tackifier.** An adhesive material sprayed on top of mulch to hold it in place.

**Tailwater Depth.** The depth of flow immediately downstream from a discharge structure.

**Technical Release Number 55 (TR-55).** A watershed hydrology model developed by the Soil Conservation Service (now Natural Resources Conservation Service) that is used to calculate runoff volumes, peak flows, and simplified routing for storm events through ponds.

**Tile Drain.** Pipe made of perforated plastic, burned clay, concrete, or similar material, laid to a designed grade and depth, to collect and carry excess water from the soil.

**Tile Drainage.** Land drainage by means of a series of tile lines laid at a specified depth, grade, and spacing.

**Time of Concentration.** The time required for water to flow from the most distant point to the downstream outlet of a site. Runoff flow paths, ground surface slope and roughness, and channel characteristics affect the time of concentration.

**Toe of Dam.** The base or bottom of the sloping faces of a constructed dam at the point of intersection with the natural ground surface—normally a much flatter slope. A dam has an inside toe (the impoundment or upstream side) and an outside toe (the downstream side).

**Toe of Slope.** The base or bottom of a slope at the point where the ground surface abruptly changes to a significantly flatter grade.

**Topography.** A general term to include characteristics of the ground surface, such as plains, hills, mountains, relief, slopes, and other physiographic features.

**Topsoil.** (1) The dark-colored surface layer, or A horizon, of a soil; when present it ranges in depth from a fraction of an inch to 2-3 feet. (2) Equivalent to the plow layer of cultivated soils. (3) Commonly used to refer to the surface layer(s) enriched in organic matter and having textural and structural characteristics favorable for plant growth.

**Total Maximum Daily Load (TMDL).** A calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources, including a margin of safety.

**Total Organic Carbon.** A measure of the organic matter content. The amount of organic matter content affects biogeochemical processes, nutrient cycling, biological availability, chemical transport and interactions, and also has direct implications in the planning of wastewater treatment and drinking water treatment.

**Total Phosphorus.** Sum of orthophosphate, metaphosphate (or polyphosphate) and organically bound phosphate. Phosphorus is typically the growth-limiting nutrient in freshwater systems.

**Total Suspended Solids.** The total amount of particulate matter that is suspended in the water column.

**Toxicity.** The characteristic of being poisonous or harmful to plant or animal life. The relative degree or severity of this characteristic.

**Trap Efficiency.** The capability of a reservoir to trap sediment.

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

**Turbidity.** (1) Cloudiness of a liquid, caused by suspended solids. (2) A measure of the suspended solids in a liquid.

**Turf.** Surface soil supporting a dense growth of grass and associated root mat.

**Ultraviolet Radiation Stability.** Resistance to degradation from ultraviolet rays. Most synthetic fabrics and plastics without special treatment will quickly lose strength when exposed to sunlight.

**Underground Detention Facilities.** Vaults, pipes, tanks, and other subsurface structures designed to temporarily store storm water runoff for water quantity control and to drain completely between runoff events. They are intended to control peak flows, limit downstream flooding, and provide some channel protection.

**Underground Infiltration Systems.** Structures designed to capture, temporarily store, and infiltrate the water quantity volume over several days, including premanufactured pipes, vaults, and modular structures. Used as alternatives to infiltration trenches and basins for space-limited sites and storm water retrofit applications.

**Unified Soil Classification System (USCS).** A system of classifying soils that is based on their identification according to particle size, gradation, plasticity index, and liquid limit.

**Uniform Flow.** A state of steady flow when the mean velocity and cross-sectional area remain constant in all sections of a reach.

**Urban Storm Water Runoff.** Storm water runoff from developed areas.

**Vegetated Buffer.** An area or strip of land in permanent undisturbed vegetation adjacent to a waterbody or other resource that is designed to protect resources from adjacent development during construction and after development by filtering pollutants in runoff, protecting water quality and temperature, providing wildlife habitat, screening structures and enhancing aesthetics, and providing access for recreation.

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**Vegetated Filter Strips and Level Spreaders.** Uniformly graded vegetated surfaces (i.e., grass or close-growing native vegetation) located between pollutant source areas and downstream receiving waters or wetlands. A level spreader is usually located at the top of the slope to distribute overland flow or concentrated runoff evenly across the entire length of the filter strip.

**Vegetated Roof Covers.** Multilayered, constructed roof systems consisting of a vegetative layer, media, a geotextile layer, and a synthetic drain layer installed on building rooftops. Rainwater is either intercepted by vegetation and evaporated to the atmosphere or retained in the substrate before being returned to the atmosphere through transpiration and evaporation. Also referred to as green roofs.

**Vegetative Stabilization.** Protection of erodible or sediment-producing areas with: *permanent seeding* (producing long-term vegetative cover), *short-term seeding* (producing temporary vegetative cover), or *sodding* (producing areas covered with a turf of perennial sod-forming grass).

**Water Balance.** Equation describing the input, output, and storage of water in a watershed or other hydrologic system.

**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 Flow (WQF).** The peak flow associated with the water quality volume calculated using the Natural Resources Conservation Service graphical peak discharge method.

**Water Quality Swales.** Vegetated open channels designed to treat and attenuate the water quality volume and convey excess storm water runoff. Dry swales are primarily designed to receive drainage from small impervious areas and rural roads. Wet swales are primarily used for highway runoff, small parking lots, rooftops, and pervious areas.

**Water Quality Volume (WQV).** The volume of runoff generated by one inch of rainfall on a site.

**Water Resources.** The supply of ground water and surface water in a given area.

**Water Table.** (1) The free surface of the ground water. (2) That surface subject to atmospheric pressure under the ground, generally rising and falling with the season or from other conditions such as water withdrawal.

**Watercourse.** A definite channel with bed and banks within which concentrated water flows, either continuously or intermittently.

**Watershed.** The region drained by or contributing water to a stream, lake, or other body of water.

**Watershed Area.** All land and water within the confines of a drainage divide.

**Watershed Management.** Integrated approach addressing all aspects of water quality and related natural resource management, including pollution prevention and source control.

**Weep Holes (Engineering).** Openings left in retaining walls, aprons, linings, or foundations to permit drainage and reduce pressure.

**Weir.** Device for measuring or regulating the flow of water.

**Weir Notch.** The opening in a weir for the passage of water.

**Windthrow.** (1) Uprooted by the wind. (2) A tree or trees so uprooted.

**Zoning Ordinance.** An ordinance based on the police power of government to protect the public health, safety, and general welfare. It may regulate the type of use and the intensity of development of land and structures to the extent necessary for a public purpose. Requirements may vary among geographically defined areas ("zones"). Regulations generally cover such items as height and bulk of buildings, density of dwelling units, off-street parking, control of signs, and use of land for residential, commercial, industrial or agricultural purposes. A zoning ordinance is one of the major methods for implementation of a comprehensive plan.