

## STORMWATER TERMS & ACRONYMS

(Alphabetized with common synonyms in parentheses.)

TERM/ACRONYM	DEFINITION
Acidic	Water or soil that has high concentrations of free hydrogen ions (H+) and low concentrations of free hydroxyl ions (OH-) with pH readings approaching 1. Your stomach fluid has a pH between 1.5 and 2.5.
Alkaline	Water or soil that has low concentrations of free hydrogen ions (H+) and high concentrations of free hydroxyl ions (OH-) with pH readings approaching 14.
ARAP	Aquatic Resource Alteration Permit, required to be obtained from WPC (TDEC) for all modifications of stream banks and floors.
Bacteria	Usually single celled, microscopic organisms that can be found in water and soil. These include genus and species that may or may not be harmful to humans.
Basin (pond)	Man-made depression designed to hold stormwater runoff.
Bio-remediation	The use of plants to stabilize a stream bank rather than rip-rap. This involves placing cedar revetments at the base of stream banks during the drier months, excavating the stream bank back to a 2:1 ratio, and then planting willow stakes into small, augered holes that reach the water table in the newly reshaped bank. These are usually quite successful activities and can be used along Stewart Creek.
Bio-retention	Areas within large impervious areas (i.e. parking lots) that are at a somewhat lower elevation to the neighboring pavement, underlain with soils with direct conveyance to the water table, and are filled with hearty plant life.
Biota	The collection (assemblage) of all plants and animals (micro and macroscopic) in a specific area.
BMP	A Best Management Practice is an activity, device, or structure that serves as a means of reducing or eliminating the generation of pollution or the movement of pollution towards our valuable water resources.
BOD	Biological oxygen demand is a measurement of the amount of oxygen that must be present in stream water in order for all the naturally (indigenous) biota to survive. Also used is CBOD, which refers to chemical/biological oxygen demand of a stream.
Buffer (riparian) zone	This is a vegetated zone found along side a stream, which serves as a filtering device for runoff from a construction site or any other man-made activity.
Canopy	The mass of limbs that are generated by neighboring trees in a wooded area. A canopy shades the stream water from the sun during hot summer days allowing the water temperature to remain cool, which controls the algal growth of the stream.
Cedar revetment	A line of cut cedar trees that are anchored by cable and pegs to the foot of the stream bank during low water flow conditions to keep sediment from falling into the stream water during stabilization efforts.
Check dam	An arcuate shaped dam made of rock or straw bales strategically placed and designed to slow the velocity of stormwater moving inside a drainage way, while settling out sediment.
Clearing and grubbing	An early stage of land disturbance that entails removing trees, bushes, and roots.
Conveyance	Any linear depression that allows runoff to move to a neighboring stream or sinkhole.
Cut bank	The outside curve of a stream where the water speed (velocity) and erosive strength is greatest. Here is where most stream bank erosion usually occurs.
Detention	To hold runoff in a basin (pond) for a short period of time, thereby delaying the introduction of its volume (quantity) of stormwater to the neighboring stream.
Discharge	The emission of water from a holding basin or any surface activity.
DO	Dissolved oxygen is the amount of oxygen that is disseminated throughout a sample of water. Fish usually require a DO measurement of 5 ppm and greater.
Dry detention basin	A basin (pond) designed to reduce pollutant levels (quality) in stormwater as well as volumes (quantity) of stormwater before reaching the neighboring stream or sinkhole.
Erosion	The dislodging of a soil particle from its natural location and moving it to another location using gravity, wind, and/or water (weathering + transport = erosion) as the transporting agent. Surface erosion starts as sheet erosion then becomes rilllets, and then gullies as the erosion increases, unchecked by sediment control measures (seeding/sodding, silt fences, check dams, and sediment basins).
Fauna	The collection (assemblage) of all animals or wildlife (micro and macroscopic) in a specific area.
Filtration	To remove impurities or pollutants from runoff by allowing water to move through a pervious substance such as grassroots, topsoil (O- and A-horizons), or leaf litter found on the floor of wooded areas. Riparian zones serve as perfect filters for stormwater before it enters the neighboring stream, while topsoil serves as a perfect filter for stormwater as it infiltrates (percolates) into the groundwater.
Flora	The collection (assemblage) of all plants or plant life (micro and macroscopic) in a specific area.

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Fractures (joints)	An open crack in the bedrock that extends vertically deep into the bedrock and horizontally for many miles. These can be seen in the bedrock dominated stream floor of Stewart Creek during the drier months of the year (August through November). Fractures serve as direct conveyances to groundwater.
Fracture patterns	The pattern made from the interconnecting of the two major fracture patterns found in middle Tennessee (northeast to southwest and northwest to southeast). These patterns can often control the direction a stream course.
Genus and species	The next to the smallest and smallest categories used to describe a specific plant or animal.
Gradient (slope)	The amount of vertical (elevation) change over a certain horizontal distance (V/H).
Grading	The activity comprised of excavating soil to a new gradient allowing building construction to proceed.
Good housekeeping	An EPA term used to describe the municipal and county government responsibility in maintaining its properties in a sound water quality manner.
Habitat	The environment in which a specific fauna or flora resides.
Illicit discharge	This is any discharge to a neighboring stream or sinkhole that is not permitted by either the state or local government and harmfully affects the water quality conditions of the local water bodies.
Impervious	A substance or surface is said to be impervious if it does not allow fluid to move through it (i.e. asphalt, concrete, and rooftops).
Indigenous (native)	Natural to an area (oak trees are indigenous here, while Bradford pear trees are not.)
Land developer	An individual who performs the following activities or subcontracts to someone else to perform: permit applications then sediment control installation then clearing and grubbing then grading then installation of storm sewers and roads/sidewalks.
Land disturbance	An activity that involves the removal of natural vegetation and the excavation of soil and/or rock in preparation of a construction project.
Macroscopic	An object that can be seen with the naked eye.
Microscopic	An object that cannot be seen with the naked eye and requires a microscope for viewing.
Macroinvertebrates	These are very small animals that can be seen with the naked eye that are usually larval stages of insects. They are usually found under rocks and roots of a stream and are the bottom of the food chain. They are water quality indicators, so when the genus and species are diverse in a stream the water quality in that stream is good.
MS4	The Municipal Separate Storm Sewer System is an EPA-mandated program that requires municipalities and counties, like Smyrna and Rutherford, to initiate activities to reduce its quantity and improve its quality of stormwater.
MPPP or MP3	A Municipal Pollution Prevention Plan is a document that must be generated for possible submittal to WPC for certain municipal or county owned facilities.
Native (indigenous)	Naturally occurring, undisturbed soil, plant, or animal.
NOI	A Notice of Intent is an application form a land developer must complete and submit to WPC (TDEC) that describes the proposed land disturbance activity.
NOC	A Notice of Coverage is a document released by WPC (TDEC) that indicates that it is okay for a land developer to initiate the proposed land disturbance activity so long as he or she performs this activity in the manner described in the corresponding NOI.
NOV	A Notice of Violation is a document released by WPC (TDEC) or the local municipality or county to a land developer or builder indicating that they have not followed the NOI and have caused pollution to occur and possibly harm the local water body.
Nonpoint source water pollution	Water pollution that does not come from a specific pipe, but is derived from stormwater runoff and other means of pollutant transport.
Nutrients	This is a collective term which includes the nitrates and phosphates found in water.
Pesticides	Often used as a collective term to describe fungicides (control fungus), herbicides (control weeds), and insecticides (control insects).
pH	This is a measurement of free hydrogen (ions) found in a sample of water. The lower the number (approaching 1) indicates high acidity, while the higher the number (approaching 14) indicates high alkalinity. Clean water has a pH very close to, if not equal to 7, while most fish can live in a pH range of 6.0 to 8.5.
PPM	Parts per million is a measurement of how much of a substance (i.e. oxygen) is found in a liter of water.
Pervious	A substance or surface is said to be pervious if it allows fluid to move through it relatively unencumbered (i.e. native soils, forest floors, and wetlands).
Point bar	The inside curve of a stream where water speed (velocity) decreases thus decreasing carrying strength of the stream enabling heavier/coarser rocks to settle to the stream floor.
Point source water pollution	Water pollution that comes from a specific pipe (i.e. from a factory or wastewater treatment plant).

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Pollutant	A substance, whether soil particles, chemicals, metals, organisms, or an inordinate volume (quantity) of water not normally found in a stream or groundwater.
Pollutant source	An activity or location that produces pollution.
Pore	That space found in-between the particles of soil in the soil profile that can be completely filled (saturated or phreatic) with water, partially saturated (vadose) with water where only the surface of the soil particles are coated with water, or completely void of water.
Recharge	The naturally occurring action of surface water infiltrating the ground causing the volume of ground water to increase.
Remediation (restoration)	The activity that involves returning a damaged stream bank, for instance, to its original, natural condition or a semblance thereof.
Retention	To hold stormwater runoff in a basin (pond) for an indefinite period of time, thereby delaying the introduction of its volume (quantity) of stormwater to the neighboring stream for a significant period of time.
Riparian (buffer) zone	An area on both sides of a stream usually comprised of trees and/or undergrowth.
Riparian (buffer) zone remediation (restoration)	An activity comprised of replacing a missing portion of vegetation once present.
Rip-rap	The collection of cobble to boulder size rocks used to stabilize steep slopes including stream banks.
River-left	A standard rafting term for the left side of the stream as you float down stream.
Riser	This is a large hollow tube (round or square in shape) that is mounted vertically at the lowest elevation on the floor of a detention or retention basin. It has an intake orifice at its top, which allows water in the basin to fall into the hollow tube and then into pipes and underneath the walls of the basin, eventually reaching the neighboring stream. It regulates the height and holding time of the water held in the basin.
River-right	A standard rafting term for the right side of the stream as you float down stream.
Root mass	The system of roots of a tree which play such an important role in stabilizing/holding stream bank soil together and providing in-stream habitat.
Runoff	After water comes in contact with the surface, it moves because of gravity.
Sediment basin (pond)	A basin excavated down slope of a construction site when graded slopes are too steep for silt fences and check dams to contain the stormwater runoff or if the construction site meets or exceeds ten acres. This structure is usually converted to a detention or retention basin before construction is completed.
Sediment loading	The occurrence of sediment being introduced to a water body, sometimes exceeding the amount that water body can manage.
Seep	Similar to a spring, but much lesser volume (quantity) of water is emitted over a larger, less-defined area.
Silt fence	A black, plastic, 3-foot wide fabric stapled to wooden stakes. This fabric and stakes are placed vertically into the soil at least four inches deep to serve as a pervious barrier down slope of sediment movement. Water moves through it, but sediment does not. Constant maintenance of these fences is required.
Sinkhole	This is a surface depression that has been caused by the collapse of shallow, dissolved strata below it. The sinkhole serves as a direct conveyance for surface water to reach the subsurface and become groundwater.
Sinuosity	The natural curvature the course of Stewart Creek has as it flows down stream.
Soil profile	The sequence of soil layers found at a specific location. A full profile consists of O-, A-, B-, and C-horizons, and a regolith zone (where fragmented bedrock lies immediately on top of bedrock).
Spring	A naturally occurring surface emission of groundwater, at a definite location.
Strata	A layer of bedrock.
Storm drain	This is a surface device usually found in the gutter of the street that allows stormwater to fall into a system of subsurface pipes that carry the stormwater directly to the closest stream without any treatment.
Storm event	Any form of precipitation (rain, snow, ice, hail, or sleet) that brings water to the surface.
Storm sewer	This is the system of surface storm drains and interconnected subsurface pipes that gravity feeds stormwater directly to the closest stream without any treatment.
Stormwater	This is what water is called after it has been precipitated by a storm event and is now moving down slope.
Stormwater ordinance	This is a municipal or county government document that describes the rules and regulations, which must be followed by any person involved in construction activities.
Stream profile	What a stream would look like if you were able to cut it in half from bank to bank.
Streambank restoration (stabilization)	An attempt to stabilize a streambank using either rip rap or the installation of living plants usually after sloping of the banks has been completed.

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SWPPP or SWP3	A Stormwater Pollution Prevention Plan is a document that must be submitted to WPC for certain construction activities that are close to streams listed on the 303(d) List.
TDEC	Tennessee Department of Environment and Conservation, 401 Church Street, Nashville, TN 37243
Temporary construction entry/exit	This should be found at all construction entries and exits to promote all mud from vehicle tires to fall off before the vehicle enters the neighboring thoroughfare. It should consist of 1 ½" – 3 ½" limestone gravel which should be at least 6" thick and usually 50'-100' long, while being wide enough to accommodate all vehicular traffic.
Thalway	The straight portion of a stream.
TMDL	Total maximum daily load is a measurement of the maximum concentration of a specific pollutant possible in stream water without causing harm to local biota.
Topsoil	The upper most layer(s) of soil found amidst the grassroots and the first few inches of the soil profile below the grassroots. Typically an organic layer (the O-horizon) is where the roots lie, while immediately below this is the lesser organic and more sandy or clayey A-horizon. The A-horizon is sometimes found without the O-horizon and poorer soil conditions are often present when neither of these horizons is present.
Toxicity	The amount of toxins (pollutants) found in a sample of stream water.
Toxic metals	Metals that are not naturally found in unpolluted stream or groundwater or, at least, not in concentrations found to be harmful to local biota or humans (i.e. arsenic, cadmium, chromium, cobalt, lead, and many others).
TSS	The measurement, total suspended solids, is how much silt to colloidal sized material is suspended in a sample of water. Excessive sediment loading to a stream causes this to occur and can be harmful to the local biota by reducing the dissolved oxygen concentrations and suffocating the macroinvertebrates.
Transport (movement)	Movement caused by gravity, wind, and/or water.
Turbidity	This is a measurement that indicates the amount of suspended solids present in a sample of water. Excessive sediment loading to a stream causes this to occur and can be harmful to the local biota.
Urbanization	The conversion of land use at a specific location from its past use to an urban use.
WPC	The Division of Water Pollution Control (TDEC) is mandated to enforce the MS4 program, monitor stream water quality, post hazards, and assemble the 303(d) List.
Water body	A surface body of water (spring, creek, river, or lake) or a subsurface stream or lake.
Water quality	This refers to the amount of pollutants found in any sample or body of water. The greater the presence of pollutants the lesser the quality of water.
Water quantity	This refers to the amount of water present at any given location during and after a storm event.
Water quality buffer zone	This refers to a buffer zone established or preserved for the purpose of assuring water quality for the neighboring stream.
Water resource	Any body of water, whether it be a stream, river, lake, or subsurface stream or aquifer that provides water for organisms.
Watershed	An area of land where all of its runoff ends up at a common location, i.e. creek, river, or lake.
Water table	That depth in the local subsurface, usually soil, where the soil pores below it are filled with water, while the soil pores above it are not.
Weathering	The dislodging of soil or rock particles from their natural location through heat, freeze-thaw, plant roots, raindrop impact, strong stream currents, abrasion, et al.
Wetland	This is an area where surface and shallow groundwater accumulates causing soils to be hydric (water-bearing) and certain genus and species of plants to prevail. Wetlands are very good filtering systems and are protected by the EPA and TDEC.
Wet weather conveyance	This is a stream-like depression that appears to be a stream during wet weather, but does not have water in it at any other time. It is not fed by a spring or runoff from portions of the watershed upstream, so macroinvertebrates and biota do not exist in it during dry periods. It has no conveyance to the water table and cannot be used as a water source. WPC field biologists determine this during field visits.
303(d) List	An EPA-mandated and WPC-generated listing of Tennessee streams that do not meet clean water quality standards. It includes the pollutant type and source, stream segment length, and other useful information.
305(b) Report	An EPA-mandated and WPC-generated report that describes the water quality status of every Tennessee water body, and contains the 303(d) List.