

STORMWATER TERMS & ACRONYMS

(Alphabetized with common synonyms in parentheses.)

Revised 10-1-10

TERM/ACRONYM	DEFINITION
303(d) List	An EPA-required 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. EPA requires this listing of all states.
305(b) Report	An EPA-required and WPC-generated report that describes the water quality status of every Tennessee water body, and contains the 303(d) List. EPA requires this report of all states.
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. A pH of 7.0 is considered to be neutral that of clean rainfall.
Alkaline (basic)	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.
Aquatic Restoration Alteration Permit (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. Outlet structures are designed to discharge all water that has not evaporated or percolated into the subsurface within 72 hours.
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 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 and its tributaries.
Bio-retention	Areas within large impervious areas (i.e. parking lots) that are at a somewhat lower elevation to the adjoining 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.
Best Management Practice (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. A BMP can also be an educational or outreach event or effort that enlightens the citizenry of the need for other BMPs.
Biological Oxygen Demand (BOD)	Biological oxygen demand is a measurement of the amount of oxygen that must be present in stream water in order for all of 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. Tree roots provide stream bank stability & habitat for macro-invertebrates, while canopy provides shade.
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.
Clay/colloidal-sized	Clay/colloidal are two particle size ranges that are less than 2 microns (0.002mm) in diameter and are the smallest particle sizes.
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) is greatest, thus causing the erosive strength of the stream to increase. Here is where most stream bank erosion 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/release of water from a detention basin or any surface or subsurface activity, such a spring or seep.
Dissolved Oxygen (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.
Dye tracing	The intentional injection of EPA-approved dyes (used in lipsticks) into sinkholes and open bedrock fractures immediately before storm events then detected at discharge points, usually springs. Subsurface flow direction of groundwater can be determined.
Erosion	The dislodging of a soil particle from its natural location and moving it to another location using gravity, wind, ice, and/or water (weathering + transport = erosion) as the transporting agent. Surface erosion starts as sheet erosion then becomes rilllets then gullies as the erosion increases and deepens, unchecked by sediment control measures (seeding/sodding, silt fences, check dams, rock rings, and sediment basins).
Fauna	The collection (assemblage) of all animals or wildlife (micro and macroscopic) in a specific area.

Page 2.	
Filter fabric (geotextile)	A man-made fabric used to: overlay rock structures to ensure the passage of water, but not fine soils and underlay rock structures to ensure the integrity of the native soil below the rock.
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.
Fractures (joints)	An open crack in the bedrock, without geologic displacement 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.
Good housekeeping	An EPA-derived term used to describe the municipal and county government responsibility in maintaining its properties in a sound water quality manner.
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.
Gravel (granule)-sized	Gravel (granule) is a particle size range that is larger than 2.00mm in diameter and is the next size larger than sand.
Green infrastructure	Structures and devices used to mimic nature by allowing stored runoff to: evaporate, be taken up by vegetation, or infiltrate into the ground. Also known as being 'green'.
Habitat	The environment in which a specific fauna or flora resides.
Hotspot (priority area)	An area where land use or activities generate highly contaminated runoff, with pollutant concentrations in excess of those typically found in storm water.
Illicit connection	Illegal and/or unauthorized connection to the Town of Smyrna separate storm sewer system whether or not such connection results in discharges into that system.
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, dimension stone, gravel, and rooftops).
Indigenous (native)	Natural to an area (i.e. many oak trees are indigenous in middle TN, while Bradford Pear trees are not.)
Infiltration (percolation)	The downward movement of surface water into a soil, regolith, or bedrock layer.
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 requiring a microscope.
Macro-invertebrates	These are very small larval stages of insects that can be seen with the naked eye. They are usually found under rocks and roots of a stream and are at the bottom of the food chain. They are water quality indicators, so when the genus and species of animals in a stream are diverse the water quality in that stream is good.
Municipal Separate Storm Sewer System (MS4)	The Municipal Separate Storm Sewer System is an EPA-required program that requires municipalities and counties, like Smyrna and Rutherford, to initiate activities to reduce its quantity and improve its quality of stormwater.
Municipal Pollution Prevention Plan (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.
National Pollutant Discharge & Elimination System (NPDES)	A permit initiated by the U.S. Congress intended to improve the water quality of all surface and subsurface (underground) water resources. Includes the MS4 permit, among many others.
Native (indigenous)	Naturally occurring, undisturbed soil, plant, or animal.
Notice of Intent (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.
Notice of Coverage (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.
Notice of Violation (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 (NPS)	Water pollution that does not come from a specific pipe, but is derived from stormwater runoff and other means of pollutant transport.
Non-porous	An object not having open space between its particles, thus precluding the entrance of gases and liquids.
Nutrients	This is a collective term which includes the nitrates and phosphates found in water.

Page 3.	
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 7.0, while most fish can live in a pH range of 6.0 to 8.5.
Parts per million (PPM)	Parts per million is a measurement of how much of a substance (i.e. oxygen) is found in a milliliter 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 water causing heavier/coarser particles to settle to the stream floor as sediment.
Point source water pollution	Water pollution that comes from a specific pipe (i.e. from a factory or wastewater treatment plant).
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.
Porous	An object having open space between its particles, which allows the entrance of gases and liquids.
Rain garden	A shallow depression in the ground, varying in shape, excavated and planted with water-loving plants and meant to cleanse and detain runoff.
Receiving stream	The stream that directly receives runoff from the immediate watershed surfaces.
Recharge	The naturally occurring action of surface water infiltrating the ground causing the volume of ground water to increase. Also the naturally occurring action of groundwater discharging to the surface or a stream.
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.
Regolith	That material that overlies bedrock and underlies the lowest soil layer, the C-horizon. Represents the first stages of bedrock weathering.
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.
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-left	A standard paddling term for the left side of the stream as you float down stream.
River-right	A standard paddling 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.
Sand (gravel) filter	A BMP that allows water to pass through it, yet keeps sediment from doing so.
Sand-sized	Sand is a particle size range that extends from 2.00 to 0.06mm in diameter and is the next smaller size than pebbles.
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 (rock particles of various sizes) 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 discharged over a larger, less-defined area.
Silt-sized	Silt is a particle size range that extends from 0.06 to 0.002mm (2 microns) in diameter and is the next smaller size than sand.
Silt fence	A black, plastic, 3-foot wide fabric stapled to wooden/metal 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 possible sediment movement. Water moves through the fabric, but coarser 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 through its throat 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 discharge of groundwater at a definitive location and higher rate of flow than a seep.
Stabilization	Providing adequate measures, vegetative and/or structural that will prevent or minimize erosion from occurring.
Strata	A layer of bedrock.

Page 4.	
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.
Stormwater Pollution Prevention Plan (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.
Subsurface	Any soil or bedrock located below the surface of the ground or earth...underground.
Swale	A shallow depression in the ground, varying in shape, excavated and grassed meant to cleanse and detain runoff.
TN Dept. of Environment & Conservation (TDEC)	The state agency responsible for protecting and improving the quality of the state's surface and subsurface water resources. This agency consists of the divisions: Water Pollution Control (MS4 program), Water Supply (groundwater protection), Groundwater Protection (septic systems), and Solid Waste Management (landfills). TN Department of Environment and Conservation, 6 th Floor, L & C Annex, 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 2 ½" – 3 ½" limestone gravel which should be at least 6" thick, 50'-100' long, 20'-30' wide, and underlain by a geo-textile fabric.
Thalway	The straight portion of a stream.
Throat	The opening often found in the bottom of a sinkhole where most surface runoff enters the subsurface (underground).
Total Maximum Daily Load (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).
Total Suspended Solids (TSS)	The measurement, total suspended solids, is how much silt and 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 macro-invertebrates.
Transport (movement)	Movement caused by gravity, wind, ice, 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 as it adsorbs oxygen and decreases visibility.
Urbanization	The conversion of land use at a specific location from its past use to an urban use.
Div. of Water Pollution Control (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 (WQBZ)	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, spring, seep, subsurface stream, or aquifer that provides water for organisms, including humans.
Watershed	An area of land where all of its runoff ends up at a common location, i.e. creek, river, lake, or sinkhole.
Div. of Water Supply (DWS)	The Division of Water Supply (TDEC) is mandated to protect water quality in the subsurface.
Water table	That depth in the local subsurface, usually soil, where all of the pore space below it are filled with water (phreatic zone), while the soil pore spaces above it are not (vadose zone).
Waterway (watercourse)	A permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface water
Weathering	The dislodging of soil or rock particles from their natural location through heat, freeze-thaw, frost-wedging, plant roots, raindrop impact, strong stream currents, abrasion, gravity, et al.
Wetland	This is a natural 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.

Page 5.	
Wetland (constructed)	This is a man-made area where surface runoff accumulates and stored to allow for a delay in discharging the water off-site as well as being absorbed and adsorbed by the soils and taken up by the roots of wetland plants. Constructed wetlands are very good filtering systems and are endorsed by the EPA and TDEC as being 'green'.
Wet weather conveyance (WWC)	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 macro-invertebrates 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.