

Glossary

303(d) waterbody

A list of lakes, rivers, and streams that have been designated as impaired or threatened by a pollutant(s) for which one or more Total Maximum Daily Loads (TMDLs) are needed. Impaired means that the water is not meeting state water quality standards.

319

The section of the Federal Clean Water Act that deals with nonpoint source pollution.

Average Particle Size

Average size of suspended solids expected to be exported from the site by stormwater runoff.

Aquifer

A geologic stratum containing groundwater that can be withdrawn and used for human purposes.

Backwater

Water upstream from an obstruction which is deeper than it would normally be without the obstruction.

Baffle

A device to deflect, check or regulate flow.

Berm

A constructed barrier of compacted earth.

Biofiltration swale or Bioswale

A long, gently sloped, vegetated ditch designed to filter pollutants from stormwater. Grass is the most common vegetation, but wetland vegetation can be used if the soil is saturated.

Best Management Practices (BMPs)

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices that, when used singly or in combination, contribute to the control of the discharge of pollutants directly or indirectly into stormwater, receiving waters, or the MS4. BMPs also include treatment practices, operating procedures, and practices to contribute to the control of: site runoff of spillage or leaks, sludge or water disposal, or drainage from raw materials storage. BMPs can be non-structural, which is an action that does not require construction, or structural, which involves constructed facilities or measures.

Buffer

The area of land immediately adjacent to any surface water body measured perpendicular to and horizontally from the top-of-bank on both sides of a stream that must remain or be restored to native plants, trees, and shrubs.

Catch basin

Curbside opening that collects rainwater from streets and serves as an entry point to the storm drain system.



Glossary

Catch basin insert

A device installed underneath a catch basin inlet to treat stormwater through filtration, settling, absorption, adsorption, or a combination of these mechanisms. There are a number of shapes, sizes, and configurations of inserts available.

Channel

A long, narrow excavation or surface feature that conveys surface water and is open to the air.

Channel, constructed

A channel or ditch constructed to convey surface water; also includes reconstructed natural channels.

Channel, natural

A channel which has occurred naturally due to the flow of surface waters; or a channel that, although originally constructed by human activity, has taken on the appearance of a natural channel including a stable route and biological community.

Clean Water Act

Clean Water Act (CWA) means the federal Water Pollution Control Act (33 U.S.C. §1251 et seq.), and any subsequent amendments thereto.

Closed depression

An area which is low-lying and either has no surface water outlet, or has such a limited outlet that during storm events the area acts as a retention basin, with more than 5,000 square feet of water surface area at overflow elevation.

Construction

Construction means the act of building, grading, shaping, removing, demolishing, repairing, erecting, extending, installing equipment, or enlarging any building, structure, grounds, or Premises.

CSB

Charleston Sanitary Board

CSO

Combined Sewer Overflow. Combined sewer systems are sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. Most of the time, combined sewer systems transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of heavy rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. For this reason, combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers, or other water bodies.

Constructed conveyance system facilities

Gutters, ditches, pipes, channels, and most flow control and water quality treatment facilities.

Conveyance

The process of water moving from one place to another.

Culvert

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

Dead storage

The volume available in a depression in the ground below any conveyance system, or surface drainage pathway, or outlet invert elevation that could allow the discharge of surface and stormwater runoff.

Debris Barrier

A metal trash rack.

Design Professional

A licensed professional engineer registered in the state of West Virginia.

Design Storm

The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g., five-year storm) and duration (e.g., 24 hours), used in the design and evaluation of stormwater management systems.

Depression storage

The amount of precipitation that is trapped in depressions on the surface of the ground.

Detention facility

A facility that collects water from developed areas and releases it at a slower rate than it enters the collection system. The excess of inflow over outflow is temporarily stored in a pond or a vault and is typically released over a few hours or a few days.

Detention Vault

A type of detention facility designed to manage excess stormwater runoff on a developed site, often in an urban setting. This type of best management practice may be selected when there is insufficient space on the site to infiltrate the runoff or build a surface facility.

Developer

Any landowner, agent of such landowner, or tenant with the permission of such landowner, who makes or causes to be made a subdivision of land or land development project prior to issuance of the Certificate of Occupancy.

Development

Any human-induced change to improved or unimproved real estate, whether public or private, including but not limited to land development, construction, installation, or expansion of a building or other structure, land division, street construction, and site alteration such as embankments, dredging, grubbing, grading, paving, parking or storage facilities, excavation, filling, stockpiling, or clearing. As used in these regulations, development encompasses both new development and redevelopment. It includes the entire development site, even when the project is performed in stages.

Development Site

The specific tract of land where any earth disturbance activities are planned, conducted, or maintained.

Diffused Drainage Discharge

Drainage discharge not confined to a single point location or channel, such as sheet flow or shallow concentrated flow.

Directly Connected Impervious Area

An impervious or impermeable surface, which is directly connected to the drainage system.

Direct discharge

Undetained discharge from a proposed project to a major receiving water.

Discharge

The volume of water (and suspended sediment if surface water) that passes a given location within a given period of time.

Diversion

A change in the natural discharge location or runoff flows onto or away from an adjacent downstream property.

Drainage

The collection, conveyance, containment, and/or discharge of surface and stormwater runoff.

Drainage facility

A constructed or engineered feature that collects, conveys, stores or treats surface and stormwater runoff. Drainage facilities include constructed or engineered streams, pipelines, channels, ditches, gutters, lakes, wetlands, closed depressions, flow control or water quality treatment facilities, erosion and sedimentation control facilities, and other drainage structures and appurtenances that provide for drainage.

Embankment

A structure of earth, gravel, or similar material raised to form a pond bank or foundation for a road.

Energy Dissipater

A rock pad constructed at inlets/outlets to prevent erosion, a constructed percolation trench to disperse outletting flows over a large area, or a catch basin used to slow fast flowing runoff. Catch basins may be a part of the dispersion trench.

Erosion

When land is diminished or worn away due to wind, water, or glacial ice. Often the eroded debris (silt or sediment) becomes a pollutant via stormwater runoff. Erosion occurs naturally but can be intensified by land clearing activities such as farming, development, road-building, and timber harvesting.

Erosion and Sediment Control Plan

A plan for a project site that identifies stormwater detention and retention structures that will minimize accelerated erosion and sedimentation during the construction phase.

Eutrophic

A condition of a water body in which excess nutrients, particularly phosphorous, stimulates the growth of aquatic plant life usually resulting in the depletion of dissolved oxygen. Thus, less dissolved oxygen is available to other aquatic life.

Excavation

The process of removing earth, stone, or other materials from land.

Existing Conditions

Physical conditions on the site including land use, impervious surface, topography, vegetation, soils, and hydrology that exist on the site on the date the owner starts the development process.

Facility

Facility means, for the purposes of this division, a building, structure, installation, construction site or premises in which pollutants are produced and/or generated as a result of an activity conducted within or around such building, structure, installation, construction site or premises.

Flood Control Channel

The open portion (often concrete-lined) of the storm drain system

Flow control facility

A drainage facility designed to mitigate the impacts of increased surface and stormwater runoff generated by site development pursuant to the drainage requirements. Flow control facilities are designed either to hold water for a considerable length of time and then release it by evaporation, plant transpiration, and/or infiltration into the ground; or to hold runoff a short period of time and then release it to the conveyance system.

Flow control standards

The level of flow control required is based on the resource value of the receiving system in terms of its hydrology, ecology, geology and water quality.

General Permit

A permit issued under the NPDES program to cover a certain class or category of stormwater discharges. These permits reduce the administrative burden of permitting stormwater discharges.

Grading

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

Groundwater

Underground water usually found in aquifers. Groundwater usually originates from infiltration. Wells tap the groundwater for water supply uses.

Groundwater Recharge

The replenishment of existing natural underground water supplies without degrading groundwater quality.



Glossary

Gutter

The edge of a street (below the curb) designed to drain water runoff from streets, driveways, parking lots, etc. into catch basins.

Habitat

The specific area or environment in which a particular type of plant or animal lives and grows.

Hardpan

A cemented or compacted and often clay-like layer of soil that is impenetrable by roots.

Harmful pollutant

A substance that has adverse effects to an organism including death, chronic poisoning, impaired reproduction, cancer, or other effects.

Hazardous materials

Hazardous materials means any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

HRT

Hydraulic residence time.

Hydrologic cycle

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

Household hazardous waste

Common everyday products that people use in and around their homes—including paint, paint thinner, herbicides, and pesticides—that, due to their chemical nature, can be hazardous if not properly disposed

Illicit Connection

Illicit connection means (1) any drain or conveyance, whether on the surface or subsurface, which allows an Illicit discharge to enter the MS4 or waters of the state including, but not limited to, conveyances which allow any non-stormwater discharge to enter the MS4 and any connection to the MS4 from indoor drains and sinks, regardless of whether said drain or connection was previously allowed, permitted, or approved by the City or the WV Department of Environmental Protection (DEP) or (2) any drain or conveyance connected from a commercial or industrial land use to the MS4 which has not been documented in plans, maps, or equivalent records and approved by a Stormwater Compliance Officer after the effective date of this ordinance and which has not been located, identified, documented, and provided to a Stormwater Compliance Officer after written notice.

Illicit discharges

Discharges of non-stormwater to the storm drainage system. Examples are discharges from internal floor drains, appliances, industrial processes, sinks, and toilets that are connected to the nearby storm drainage system. These discharges should be going to the sanitary sewer system, a holding tank, an on-site process water treatment system, or a septic system.

Impervious surface

A hard surface area which either prevents or retards the infiltration of water into the ground as under natural conditions prior to development; and/or a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development.

Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, compacted gravel roads, packed earthen materials, and oiled, macadam, or other surfaces which similarly impede the natural infiltration of surface and stormwater runoff.

Impoundment

A natural or man-made containment for surface water.

Industrial Activity

Any activity which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. Industrial activity means an activity subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26(b)(14).

Infiltration/Inflow (I/I)

Clean stormwater and/or groundwater that enters the sewer system through cracked pipes, leaky manholes, or improperly connected storm drains, down spouts and sump pumps. Most inflow comes from storm water and most infiltration comes from groundwater.

Invert

Elevation to the inside bottom of the pipe.

Land Disturbance

Any human activity which moves or changes the surface of land, including, but not limited to, clearing and grubbing, grading, excavation, embankments, land development, agricultural plowing or tilling, timber harvesting activities, road maintenance activities, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

Maximum Extent Practicable (MEP)

Maximum Extent Practicable means a standard set forth in the CWA that requires NPDES permittees to have controls in place that are designed to reduce the discharge of pollutants to the MS4 and waters of the state, including management practices, control techniques and system, design and engineering methods.

Municipal Separate Storm Sewer System (MS4)

Municipal Separate Storm Sewer System (MS4) means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are:

- Owned or operated by the City.
- Designed or used for collecting or conveying stormwater.
- Not a combined sewer.
- Not part of a Publicly Owned Treatment Works (POTW) as defined in 40 CFR, Section 122.2.

Natural conveyance system elements

Swales and small drainage courses, streams, rivers, lakes, and wetlands.

Natural on-site drainage feature

A natural swale, channel, stream, closed depression, wetland, or lake.

New Development

Any development project that does not meet the definition of redevelopment as defined in these Regulations or any development project at a site where structures or impervious surfaces were removed before January 1, 1970.

Non-point source (NPS) pollution

NPS pollution occurs when rainfall, snowmelt, or irrigation runs over land or through the ground, picks up pollutants, and deposits them into rivers, lakes, and coastal waters or introduces them into ground water.

Non-point Source (NPS) Pollutants

Pollutants from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even our underground sources of drinking water.

Nonstructural BMP

A preventative action to protect receiving water quality that does not require construction. Nonstructural BMPs rely predominantly on behavioral changes in order to be effective. Major categories of non-structural BMPs include education, recycling, maintenance practices and source controls.

NPDES

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit means a permit issued by the Federal Environmental Protection Agency (EPA) or by a state under authority delegated pursuant to 33 USC §1342(b) that authorizes the discharge of Pollutants into waters of the United States. Notice of Intent (NOI).

Oil/water separator

A vault, usually underground designed to provide a quiescent environment to separate oil from water. Floatables are also removed.

Outfall

The point where runoff discharges from a sewer pipe, ditch, or other conveyance to a receiving body of water.

Owner

Any person, landowner, developer, or tenant with the permission of such landowner who holds legal title to a property subsequent to issuance of the Certificate of Occupancy.

Peak Flow Rate

The peak flow rate associated with an infrequent (typically 5 to 25 year) storm event.

Percent Impervious

The specific portion of the contributing drainage area that does not allow stormwater to infiltrate, usually expressed as a percent.

Peak Flow

The maximum flow that the collection system is designed to handle, typically associated with a recurrence interval (e.g., 10-yr, 25-yr, 50-y or 100-yr).

Person

Person means any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

Phase 1 Stormwater Permit Program

The Phase I program addressed sources of stormwater runoff that had the greatest potential to negatively impact water quality. Under Phase I, EPA required NPDES permit coverage for stormwater discharges from "medium" and "large" municipal separate storm sewer systems (MS4s) located in incorporated places or counties with populations of 100,000 or more; and eleven categories of industrial activity, one of which is construction activity that disturbs five or more acres of land.

Phase 2 Stormwater Permit Program

The Phase II Program requires NPDES permit coverage for stormwater discharges from certain regulated small municipal separate storm sewer systems (MS4s); and construction activity disturbing between 1 and 5 acres of land.

Point discharge

The release of collected and/or concentrated surface and stormwater runoff from a pipe, culvert, or channel.

Pollutant

Pollutant means anything that causes or contributes to pollution and may include, but is not limited to:

- Paints, varnishes, and solvents
- Oil and other automotive fluids
- Non-hazardous liquid and solid wastes and yard wastes
- Refuse, rubbish, garbage, litter, or other discarded or abandoned objects
- Floatables



Glossary

- Pesticides, herbicides, and fertilizers
- Hazardous substances and wastes
- Sewage, fecal coliform and pathogens
- Dissolved and particulate heavy metals
- Animal wastes
- Wastes and residues that result from constructing or renovating a building or structure
- Noxious or offensive matter of any kind
- Hyperchlorinated water
- Commercial car and building wash water

Pollutant Loading

The total quantity of pollutants in stormwater runoff.

Pollution

Pollution means the degradation of the physical, thermal, chemical, biological or radioactive properties of the watercourses and water supplies located in or running through the City and/or the discharge of any pollutant into the watercourses and water supplies located in or running through the City which will or is likely to create a nuisance or to render such waters harmful, detrimental or injurious to public health, safety or welfare or to impair the beneficial use of the water and/or the water environment.

Premises

Premises means any building, lot, parcel of land, or portion of land, whether improved or unimproved, including adjacent sidewalks and parking strips

Reach

A length of channel with uniform characteristics.

Receiving waters

Bodies of water or surface water systems receiving water from upstream man-made or natural systems.

Recharge

The flow to groundwater from the infiltration of surface and storm water runoff.

Redevelopment

Any development on a site that requires demolition or removal of existing structures or impervious surfaces and replacement with new impervious surfaces. This includes replacement of impervious surfaces that have been removed on or after January 1, 1970 with new impervious surfaces. Maintenance activities such as top-layer grinding and re-paving are not considered redevelopment. Interior remodeling projects are also not considered redevelopment.

Retention

The process of collecting and holding surface and stormwater runoff with no surface outflow.

R/D Facility

Retention and detention facility. A type of drainage facility designed either to hold water for a considerable length of time and then release it by evaporation, plant transpiration, and/or infiltration into the ground, or to hold surface and stormwater runoff for a short period of time and then release it to the surface and stormwater conveyance system. Also called flow control facilities.

Required Efficiency

Suspended solids removal efficiency target.

Riparian

Pertaining to the banks of rivers and streams, and sometimes also wetlands, lakes, or tidewater.

Riprap

A facing layer or protective mound of stones placed to prevent erosion or sloughing of a structure or embankment due to the flow of surface and stormwater runoff.

Runoff

Water originating from rainfall and other precipitation that ultimately flows into drainage facilities, rivers, streams, springs, seeps, ponds, lakes, and wetlands as well as shallow groundwater.

Desired Treatment Quality

The percent TSS reduction expressed on a net annual or runoff event basis.

Required Swirl Chamber Area

The grit chamber area required to produce a design ratio that will produce a removal efficiency estimate meeting the performance goal. This measurement can be used to determine the size of the smallest system that will meet the performance goal.

Rim

Elevation at the finish grade.

Runoff Coefficient

The percentage of rainfall volume that will become runoff.

Sediment

Soil, sand, and minerals washed from land into water, usually after rain. Sediment can destroy fish-nesting areas, clog animal habitats, and cloud waters so that sunlight does not reach aquatic plants.

Sheet flow

The portion of precipitation that moves initially as overland flow in very shallow depths before eventually reaching a stream channel.

Site Plan

A graphical representation of a layout of buildings and facilities on a parcel of land.

Site Runoff

Any drainage or flood discharge that is released from a specified area.

Source control

Action to prevent pollution where it originates.

Storm drain system

A vast network of underground pipes and open channels designed for flood control, which discharges straight to the ocean.

Storm Sewer

A sewer carrying only runoff from storm events.

Stormwater

Stormwater means any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation, including groundwater discharge and floodwater.

Stormwater Compliance Officer

Stormwater Compliance Officer means an employee of the City of Charleston City Engineer's Office or City Building Department designated by the City to administer, implement and enforce this article.

Stormwater pollution

Water from rain, irrigation, garden hoses or other activities that picks up pollutants (cigarette butts, trash, automotive fluids, used oil, paint, fertilizers and pesticides, lawn and garden clippings and pet waste) from streets, parking lots, driveways and yards and carries them through the storm drain system and to a stream or other waterbody.

Storm Water Pollution Prevention Plan (SWPPP)

Storm Water Pollution Prevention Plan (SWPPP) means a document that describes the best management practices and activities to be implemented by a person to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges into stormwater, the MS4, and/or receiving waters to the maximum extent practicable

Stormwater pretreatment

Techniques employed to remove pollutants before they enter the structure, limited to techniques defined and listed as pretreatment in the manual.

Structural BMP

Constructed facilities or measures to help protect receiving water quality and control stormwater quantity. Examples include storage, vegetation, infiltration, and filtration.

Surface Water

Water that remains on the surface of the ground, including rivers, lakes, reservoirs, streams, wetlands, impoundments, seas, estuaries, etc.

Swale

A shallow drainage conveyance with relatively gentle side slopes, generally with flow depths less than one foot.

Tightline

Typically a continuous length of pipe used to convey flows down a steep or sensitive slope with appropriate energy dissipation at the discharge end.

Total Maximum Daily Load (TMDL)

The maximum amount of pollutants which can be released into a water body without adversely affecting the water quality.

Toxic

Poisonous, carcinogenic, or otherwise directly harmful to life.

Wastewater

Wastewater means any water or other liquid, other than uncontaminated stormwater, discharged from a facility.

Watercourse

Watercourse means a body of water flowing in a reasonably defined channel with a bed and banks.

Water Quality Criteria

Specific levels of water quality that, if achieved, are expected to render a body of water suitable for its designated use. The criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, farming, fish production, or industrial processes.

Water Quality Standards

State-adopted and EPA-approved ambient standards for waterbodies. The standards cover the use of the waterbody and the water quality criteria that must be met to protect the designated use or uses.

Water quality treatment facility

A drainage facility designed to reduce pollutants once they are already contained in surface and stormwater runoff. Water quality treatment facilities are the structural component of best management practices (BMPs); when used singly or in combination, WQ facilities reduce the potential for contamination of surface and/or ground waters.

Watershed

A geographic area in which water, sediments, and dissolved materials drain to a common outlet, typically a point on a larger stream, a lake, an underlying aquifer, an estuary, or an ocean. A watershed is also sometimes referred to as the “drainage basin” of the receiving waterbody.



Glossary

Water Quality Design Flow

The flow which is required or desired to be treated by the structural BMP device. Often times the design flow is associated with a rainfall depth of intensity that has a high probability of occurrence or frequency (e.g., 50-90% of all rainfall events in a given year occur at an intensity of 0.2 in/hr).

Wetland

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

Wet Weather Flows

Water entering storm drains during rainstorms/wet weather events.