

Appendix A

Glossary of Technical Terms

A

Acre: A measure of land area equating to 43,560 square feet. There are 640 acres in a square mile

Aerial Orthophotography: A collection of spatially scaled and linked aerial photographs that provide an overhead view of the study area.

Algal Bloom: An explosive growth of photosynthetic organisms predominately caused by over-enrichment of water bodies with nitrogen and/or phosphorus.

B

Bank Erosion: An initial stream response to increased flows by deepening and widening of the stream channel through removal of bank soil material.

Bedrock: A general term for the rock, usually solid, that underlies soil or other unconsolidated material.

Benthic Organism: An aquatic animal lacking a backbone and generally visible to the unaided eye that live in or near the stream bottom sediments.

Best Management Practice (BMP) Control: A structural or nonstructural practice that is designed to minimize the impacts of changes in land use on surface and groundwater systems. Structural best management practices refer to basins or facilities engineered for the purpose of reducing the pollutant load in stormwater runoff, such as bioretention, constructed stormwater wetlands, extended detention dry ponds, wet ponds, etc. Nonstructural best management practices refer to land use or development practices that are determined to be effective in minimizing the impact on receiving stream systems such as the preservation of open space and stream buffers, disconnection of impervious surfaces, etc.

Best Management Practice (BMP) Credit: Recognition that a developer has contributed land and/or monetary resources to a County "land trust fund" and as a result may have some stormwater management responsibilities waived or reduced for a specific development.

Biofiltration Facility: Typically refers to a stormwater facility that consists of a bed of amended soil modified to be highly impervious and a raised berm that retains and stores stormwater runoff and allows a portion of the runoff to infiltrate. Plants that tolerate being inundated may be introduced to the facility to provide nutrient uptake. These facilities are typically designed to receive and treat runoff from a relative small

area (less than 1 acre). Due to the low soil permeability, such facilities in the Cub Run and Bull Run watersheds require an underdrain system to operate correctly.

Bioretention Facility: See Biofiltration Facility

Build out Conditions or Built out Condition: A specific area's development has reached the planned development density described in the Comprehensive Land Use Plan resulting in no future development. The Watershed Plan uses this condition to evaluate future conditions. The date at which this condition will occur is uncertain.

Buffer: An area of natural or established vegetation managed to protect other components of a resource protection area and state waters from significant degradation due to land disturbances.

C

Channel: A natural or manmade waterway that receives or conveys stormwater runoff or base flow.

Channel Evolutionary Model (CEM): A series of geomorphologic changes that streams progress through in response to increased flows produced by development.

Chesapeake 2000 Agreement: A voluntary agreement that various jurisdiction around the Chesapeake Bay, including the Commonwealth of Virginia, have signed to form a partnership to restore the Chesapeake Bay.

Chesapeake Bay Preservation Ordinance (CBPO) Area: Any land designated by the county pursuant to Part III of the Chesapeake Bay Preservation Area Designation and Management Regulations and Code of Virginia, Section 10.1-2107. A Chesapeake Bay Preservation Area shall consist of a resource protection area and a resource management area.

Closed-Pipe or Closed-Conduit System: All natural drainage features are converted to man-made piped systems in order to maximize drainage flow and reduce flooding in specific areas.

Community Stewardship: Participation and promotion of community programs and County initiatives that protect and restore natural resources throughout the community for future generations.

Comprehensive Land Use Plan (Fairfax County): A Fairfax County reference document that details the allowable development densities and land uses of each parcel throughout Fairfax County.

Concentration: The mass of pollutant/nutrient dissolved in a given volume of water.

Confluence: The joining point where two or more streams create a combined, larger stream.

Contaminant: A material that reduces the overall quality of another material by directly contacting it.

Conveyance Capacity: The amount of water that a channel can accommodate up to its bank full condition, which is dependent on its slope, roughness characteristics, and geometric shape.

D

Density: The number of dwelling units per area.

Dendritic Drainage Pattern: A stream drainage pattern where the streams branch out in a uniform pattern similar to a tree or shrub.

Detention: The temporary impoundment or holding of stormwater runoff from upstream areas, thereby reducing peak flows downstream.

Detention Basin: A depression or dammed area with an outlet device that controls outflow. Detention facilities retain water from upstream areas, thereby reducing peak flows downstream. The storage volume and outlet control structures for detention facilities are typically designed to have the peak runoff rate from the facility and upstream development equal the peak flow that would occur without development. In Fairfax County, detention facilities are typically designed to control the peak runoff rate for selected design storm events (2 year and 5 year return period).

Detention Waiver: In some cases the County has waived the need for new development to provide onsite detention facilities. Waivers were typically granted upstream from existing and/or proposed regional detention facilities based on the assumption that the regional pond will provide the required stormwater controls.

Developer: The legal or beneficial owner or owners of all the land proposed to be included in a given development or the authorized agent thereof. In addition, the holder of an option or contract to purchase, a lessee having a remaining term of not less than 30 years, or other persons having an enforceable proprietary interest in such land shall be deemed to be a developer.

Development: A manmade change to, or construction on, the land surface that changes its runoff characteristics. Certain types of land development are exempted from stormwater management requirements as provided in the Stormwater Management Act, 10.1-603.8 B of the Code of Virginia.

Drainage Area: The land surface area (square miles or acres) that drains by gravity to a particular stream, pond, river, or other natural or man-made water conveyance facility.

Drainage Swale: A stormwater conveyance facility that consists of a grassed or vegetated shallow wide ditch. Swales typically have a flat longitudinal slope that

reduces the flow velocity to reasonable limits. Drainage swales increase runoff travel times, promote infiltration, provide water quality improvement, and are considered to be a low impact development technique. Flows and velocities must be kept below defined maximum levels to prevent erosion.

Dwelling Unit: One or more rooms in a residential building or residential portion of a building that are arranged, designed, used, or intended for use as a complete, independent living facility which includes permanent provisions for living, sleeping, eating, cooking, and sanitation.

E

Energy Dissipater: A velocity reducing device placed at the outlet of closed pipe systems in order to reduce potential stream bank eroding flows.

Estuary: An estuary is a partially enclosed body of water formed where freshwater from rivers and streams flows into the ocean, mixing with the salty sea water. Estuaries and the lands surrounding them are places of transition from land to sea, and from fresh to salt water. Although influenced by the tides, estuaries are protected from the full force of ocean waves, winds, and storms by the reefs, barrier islands, or fingers of land, mud, or sand that define an estuary's seaward boundary.

Eutrophication: The process of over-enrichment of water bodies often typified by algal blooms.

Exotic Plants: A non-native species of plant that can potentially significant alter or destroy an established ecosystem due to its lack of natural consumers.

Extended Detention Dry Ponds: A stormwater management facility that temporarily impounds runoff and discharges it through a hydraulic outlet structure over a specified period of time to a downstream conveyance system for the purpose of water quality enhancement or stream channel erosion control. While a certain amount of overflow may also occur via infiltration through the surrounding soil, such amounts are negligible when compared to the outlet structure discharge rates, and therefore, are not considered in the facility's design. Since an extended detention basin impounds runoff only temporarily, it is normally dry during periods of no rainfall. Most of the water quality benefits derive from settling of particles. Most of the reduction occurs through the capture and slow release of the many small storms that occur over the year.

F

Fecal Coliform Bacteria: A group of organisms common to the intestinal tracts of humans and animals. The presence of fecal coliform bacteria in water is an indicator of pollution and of potentially dangerous bacterial contamination. Standard tests are available to identify the number of organisms per volume of water. Standards are set for the maximum levels for specific water bodies uses such as shellfish fisheries or contact recreation to reduce the potential for infection and disease.

Flow Spreading Devices: A structural device that reduces channelization by spreading the flow over a wide area.

G

General Plan (Loudoun County): A Loudoun County reference document that details the allowable development densities and land uses of each parcel throughout Loudoun County.

Geographic Information System (GIS): A method of overlaying spatial land and land use data of different kinds. The data are referenced to a set of geographical coordinates and encoded in a computer software system.

Geology: A science that deals with the history of the earth and its life as recorded in rocks.

Geometric Mean: A statistic computed from the mean of the logarithms of a set of numbers. This statistic is used for certain parameters (such as coliform) that may have high values that would significantly affect a normally computed average.

Geomorphology: A science that deals with the land and submarine relief features of the earth's surface.

Gradient: The amount and direction of ground surface or stream bottom slope.

Grandfathered Development: Existing or planned development that is exempt from newly created regulations.

Green Roofs: A roof of a building which is partially or completely covered with plants. Green roofs reduce the amount of pollution delivered to the local drainage system through a variety of physical, biological and chemical treatment processes that filter pollutants and reduce the volume of precipitation runoff.

Groundwater Infiltration: Movement of water from the ground surface to the groundwater table.

Groundwater Recharge Areas: Areas of the watershed that have significant groundwater infiltration in order to replenish groundwater storage.

H

Hard Armoring: Stream bank protection that non-natural materials such as large rock, concrete channels or retaining walls, or rock-filled wire structures (gabions). Modern stream management practices use such protection only in extreme cases where erosion is threatening a structure.

Head Cut: The geomorphologic incision of the channel due to the hydraulic effects of a stream. One example is the accelerated cutting of a stream channel due to a manmade increase in runoff.

Headwater: The source of a stream or watershed.

Hydrograph: A plot or table of discharge flow rates versus time.

Hydrologic Soil Groups: Soils are classified by the Natural Resource Conservation Service into four groups based on the soil's runoff potential. The four Hydrologic Soils Groups are A, B, C and D. Where A's generally low runoff potential and high infiltration rates typical of sandy soils and D's have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential.

Hyetograph: A plot or table of rainfall intensity or volume versus time.

I

Igneous Rock: A rock or mineral that solidified from molten or partly molten material.

Impervious Area or Imperviousness or Impervious Cover: Portion of the land surface covered by rooftops, streets, sidewalks, and parking lots, and driveways. These surfaces are impervious to rainfall infiltration and thereby produce additional surface runoff during storm events than areas with soil (pervious areas).

Infill Development: A residential development that has occurred within already established neighborhoods.

Infiltration Rate: The rate of water movement from the ground surface to the groundwater table.

Invert: The bottom elevation of a stream, pond, pipe, or stormwater facility.

L

Land Trust Fund: Funds that are applied towards the protection of land from development by either purchasing the land or purchasing the rights to develop the land.

Low Impact Development (LID): Refers to a stormwater management technique that reduces the stormwater impact of new development or redevelopment. There are many options for including low impact development in a design. Reducing the imperviousness, increasing the travel time, and designing the site to take advantage of natural conditions can reduce the amount of runoff and peak flows produced by the new development. Facilities such as drainage swales, bioretention and biofiltration facilities may also be included to further reduce runoff rates and promote infiltration.

M

Maximum Efficiency Pond: A depressed or dammed area retaining water from upstream areas with an outlet device that reduces peak flows downstream. Many of the proposed Fairfax County regional ponds were designed with a storage volume and outlet control structures to have the peak runoff rate from the facility equal 33% of the predevelopment runoff rate.

Mean Annual Discharge: The average total discharge from a stream or river in one year.

Mitigation: To make a scenario less harmful than the original condition or to provide a habitat in another more conducive, larger, or better-suited area. Mitigation may be necessary due to constructability, cost, or other site limitations.

Modified Wet Pond: An existing stormwater facility is modified by altering the design in order to provide greater water quality or peak shaving benefits. Typical modifications include increasing the overall pond storage volume, modifying the pond bottom to include wetland plant species, and increasing the overall pond flow path in order to increase pond residence time.

N

National Pollutant Discharge Elimination System (NPDES): The national program for issuing, modifying, monitoring, and enforcing permits under Sections 307, 402, 318 and 405 of the Clean Water Act. The NPDES permit is for discharges to the waters of the United States and is administered in Virginia under the Virginia Pollutant Discharge Elimination System.

Native Flora: A preexisting species of plant that can be potentially endangered by the introduction of exotic plants and animals.

Nitrogen: An essential nutrient for the growth of living things. Urban runoff containing high levels of nitrogen from fertilizers and other man-made sources can cause excessive growth of aquatic plants and in turn reduce the overall water quality of streams, rivers, and ponds. Stormwater management facilities such as wet ponds and extended detention dry ponds in Cub Run Watershed reduce the overall nitrogen load to local streams in order to retain high water quality in the Occoquan Reservoir.

Non-Point Source: Refers to the contribution of a water quality constituent of concern such as phosphorus, nitrogen, sediment, etc. where the source is spatially distributed over a watershed. The term non-point differentiates these sources from point sources where the contribution can be attributed to a single source, pipe discharge or outfall (such as a wastewater treatment plant discharge).

Non-Structural Action: A specific watershed management project that does not include construction or capital improvement such as community outreach and

education activities as well as land management strategies such as proper lawn maintenance.

Nutrient: Chemicals such as nitrogen, phosphorus, carbon, sulfur, calcium, potassium, iron, manganese, boron, and cobalt, that are essential to the growth of living things. Nitrogen and phosphorus are the primary nonpoint nutrients in our rivers and streams.

O

Occoquan Reservoir: Major drinking water source for over 1 million residents in Fairfax County. Cub and Bull Run drain directly into this reservoir and therefore a unique and critical function of the Cub Run Watershed Plan is to protect the overall future water quality of this drinking water source.

Occoquan Reservoir Watershed Supply Protection Overlay (WSPOD): The overlay was created to protect the water supply. The WSPOD includes all areas in Fairfax County that drain to the Occoquan Reservoir. Regulations that were enacted in 1980 require stormwater controls that reduce non point nutrient runoff for areas within the WSPOD but outside the R-C District. Specifically, stormwater controls were required to achieve a 50 percent reduction in post-development phosphorus loadings.

Water quality controls in areas of the County outside the WSPOD require a 40 percent reduction in phosphorus loads. The Chesapeake Bay stormwater control regulations that required these water quality controls were enacted in 1993 - 13 years after the WSPOD controls were adopted for the Occoquan watershed.

One Hundred Year Flood Plain: Those land areas in and adjacent to streams and watercourses subject to continuous or periodic inundation from flood events with a 1% chance of occurrence in any given year (i.e., the 100-year flood frequency event) and having a drainage area greater than 70 acres. Minor floodplains shall be those floodplains that have a drainage area greater than 70 acres but less than 360 acres. Floodplains shall include all areas of the county which are designated as a floodplain by the Federal Insurance Administration, the United States Geological Survey, or Fairfax County.

Onsite Detention: A detention facility that is constructed to serve a single development of 10-20 acres.

Open Space: An area that is currently undeveloped and/or designated by the Comprehensive Land Use Plan in Fairfax County or the general plan in Loudoun County to have no development.

P

Pathogenic Organisms: A living creature that causes or is capable of causing disease.

PCB: PCBs are a class of chemicals known as polychlorinated biphenyls that are a known carcinogen. They are entirely man-made and do not occur naturally. They were first manufactured commercially in 1929 by Monsanto, their sole U.S. manufacturer. They were used in many different types of products including hydraulic fluid, casting wax, pigments, carbonless copy paper, plasticizer, vacuum pumps, compressors, heat transfer systems, and others. Their primary use, however, was as a dielectric fluid in electrical equipment. Because of their stability and resistance to thermal breakdown as well as their insulating properties, they were the fluid of choice for transformers and capacitors.

Peak Flow or Peak Discharge: The maximum rate of flow at an associated point within a given rainfall event.

Percent Impervious: Percentage of the land surface covered by rooftops, streets, sidewalks, parking lots, and driveways. These surfaces are impervious to rainfall infiltration and thereby produce additional surface runoff during storm events than areas with soil (pervious areas).

Pervious Pavement: A type of pavement material for parking lots and sidewalks that reduces surface runoff by allowing rain to infiltrate into the ground surface.

Phosphorus: An essential nutrient for the growth of living things. Urban runoff containing high levels of phosphorus from fertilizers and other man-made sources can cause excessive growth of aquatic plants and in turn reduce the overall water quality of streams, rivers, and ponds. Stormwater management facilities such as wet ponds and extended detention dry ponds in Cub Run Watershed reduce the overall phosphorus load to local streams in order to retain high water quality in the Occoquan Reservoir.

Physical Stream Habitat: A measure of the suitability of a stream segment to support a healthy habitat based on measures of the physical stream condition that affect habitat including vegetated buffer, stream bank stability, channel alteration, embeddedness, epifaunal substrate, and stream cover.

Planned Density or Planned Land Use: The maximum development density and land use allowed by the Comprehensive Land Use Plan in Fairfax County or the General Plan in Loudoun County.

Point Source: Refers to the contribution of a water quality constituent of concern such as phosphorus, nitrogen, sediment, etc. where the source is attributed to a single location, pipe discharge or outfall (such as a wastewater treatment plant discharge).

Pollutant Runoff or Polluted Runoff: Sheet flow across the land surface that contains nutrients, metals, sediments or other materials that are detrimental to the water quality of streams, rivers, and ponds.

Postdevelopment: Refers to conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land.

Pro-Rata Charges or Pro-Rata Share: This refers to funds paid to the County by the developer of a property to cover the cost of providing drainage facilities located outside the property limits of the land owned or controlled by the developer, but necessitated or required, at least in part, by the construction or improvement of his subdivision or development. The funds are reserved for stormwater improvements in the watershed in which the development occurs. The Fairfax County Public Facilities Manual (available through the Fairfax County website (www.FairfaxCounty.gov)) provides additional information on the computation of pro-rata shares.

Predevelopment: Refers to the conditions that exist at the time that plans for the land development of a tract of land are approved by the plan approval authority. Where phased development or plan approval occurs (preliminary grading, road, and utilities, etc.), the existing conditions at the time prior to the first item being approved or permitted establishes the predevelopment conditions.

Public Facility Manual: Sets forth the guidelines which govern the design and maintenance of all public facilities which must be constructed to serve new development.

Public Involvement: An extensive Fairfax County outreach program to obtain valuable local input and feedback and ensure the Cub Run Watershed Plan meets the needs and desires of the residents of the Cub and Bull Run watersheds. In order to gain greater insight into public concerns, a Community Advisory Committee was formed from the local community including members of homeowners associations, conservation organizations, local businesses, recreation groups, neighboring local and federal jurisdictions, and other local interest groups. In addition to the monthly CAC meetings, four public forums were held to allow watershed residents to identify watershed issues, evaluate alternatives to address these issues, and to provide comments on the draft and final draft of the watershed plan.

R

Rain Garden: The common term that typically refers to bioretention or biofiltration facilities.

Riparian Stream Buffers: Strips of grass, shrubs, and/or trees along the banks of rivers and streams that filter polluted runoff and provide a transition zone between water and human land use. Buffers are also complex ecosystems that provide habitat and improve the stream communities they shelter.

Redevelopment: The substantial alteration, rehabilitation, or rebuilding of a property for residential, commercial, industrial, or other purposes. Typically involves the

removal of existing development and constructing new development at densities allowed by the Comprehensive Plan.

Regional Stormwater Plan (1989): The goal of this study was to enhance the efficiency and cost-effectiveness of stormwater management in Fairfax County by strategically locating larger regional detention facilities in lieu of the construction of numerous smaller onsite detention dry or wet ponds that serve individual development projects as they occur.

This study identified a regional detention facility network for the then rapidly developing sections of Fairfax County that provided water quality, erosion, and flood control benefits. The plan identified the locations, provided a conceptual design, and documented the flood and stream bank erosion control benefits provided by the regional ponds.

For the Cub Run watershed, the plan also identified regional pond sites that provide sufficient storage volumes to accommodate wet detention water quality storage to meet Occoquan Reservoir WSPOD nutrient reduction requirements.

The 1989 stormwater management plan identified the location of 31 regional detention regional ponds (21 wet and 10 extended dry) within the Cub Run watershed. The study included 12 regional ponds that had already been constructed.

Residential-Conservation (R-C) District: The district reduced the planned residential density for several thousand acres in western Fairfax County from 0.25 to 1.0 acre lot sizes. This rezoning affects 18.3 square miles or about 37.5 percent of the total area of the combined Cub Run and Bull Run Watershed in Fairfax County and nearly 100 percent of the Bull Run watershed. The rezoning maintains the maximum development density and impervious land cover at a level which approximates natural undeveloped runoff volumes, peak flow rates, and runoff water quality. Areas within the R-C District were allowed to be developed at a higher density where the development was planned at the time that the rezoning was enacted ("grandfathered" development) included Gate Post Estates, Virginia Run, and Pleasant Valley. Additional parcels smaller than five acres that existed at the time of the rezoning were also allowed to remain. The 1982 rezoning increased the density in portions of the subwatershed including higher density areas of the watershed near Dulles Airport.

Resource Protection Areas (RPA): As established in accordance with Chapter 118 of the Code of County of Fairfax, Virginia, that component of the Chesapeake Bay Preservation Area comprised of lands at or near the shoreline or water's edge that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation of the quality of state waters. In their natural condition, these lands provide for the removal, reduction, or assimilation of sediments, nutrients, and potentially harmful or

toxic substances from runoff entering the Bay and its tributaries, and minimize the adverse effects of human activities on state waters and aquatic resources.

Resource protection areas filter pollutants out of stormwater runoff, reduce the volume of stormwater runoff, prevent erosion, and perform other important biological and ecological functions. A resource management area is a Chesapeake Bay Preservation Area, whose land features generally include tidal wetlands, nontidal wetlands contiguous to tidal wetlands, tidal shores, tributary streams, a buffer area (of not less than 100 feet), and other lands as designated by the locality.

Retrofitting: To modify something to improve or change its function. In this report, existing stormwater facilities may be retrofitted to provide additional water quality or peak shaving improvements. Typical retrofits include increasing the overall pond storage volume, modifying the pond bottom to include wetland plant species, and increasing the overall pond flow path in order to increase pond residence time.

Rezoning: Changing the maximum development density and land use allowed by the Comprehensive Land Use Plan in Fairfax County or the General Plan in Loudoun County. One major example is the Residential Conservation (RC) District which reduced the planned residential density for several thousand acres in western Fairfax County from 0.25 to 1.0 acre lot sizes.

Runoff: The portion of precipitation, snow melt, or irrigation water that runs off the land into surface waters.

S

Safe Drinking Water Act: The Safe Drinking Water Act was established to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources. The Act authorized EPA to establish safe standards of purity and required all owners or operators of public water systems to comply with primary (health-related) standards. State governments, which assume this power from EPA, also encourage attainment of secondary standards (nuisance-related).

Sediment: Material, both mineral and organic, that is in suspension, is being transported, or has been moved from its original site of origin by water or wind. Sediment piles up in reservoirs, rivers and harbors, reducing channel depth, impeding navigability, destroying wildlife habitat and clouding water so that sunlight cannot reach aquatic plants. Sediment in the Occoquan Reservoir reduces the water availability during drought.

Sediment Forebay: A small pool at the entrance of a wetland retrofitted dry pond that allows for initial sediment settling and easy sediment removal during maintenance.

Sedimentary Rock: Rock formed from accumulations of sediment, which may consist of rock fragments of various sizes, remains or products of animals or plants, products

of chemical action or of evaporation, or mixtures of these. Stratification is single most characteristic feature of sedimentary rocks, which cover about 75 percent of land area.

Sedimentation (Settling): A pollutant removal method to treat stormwater runoff in which gravity is utilized to remove particulate pollutants. Pollutants are removed from the stormwater as sediment settles or falls out of the water column. An example of a best management practice utilizing sedimentation is an extended detention basin.

Soils: Superficial material that forms at earth's surface as result of organic and inorganic processes. Soil varies with climate, plant and animal life, time, slope of land, and parent material

Stormwater Controls or Stormwater Management Facility: A device that controls stormwater runoff and changes the characteristics of that runoff including, but not limited to, the quantity and quality, the period of release or the velocity of flow.

Stormwater Detention: A depression or dammed area with an outlet device that controls outflow. Detention facilities retain water from upstream areas, thereby reducing peak flows downstream. The storage volume and outlet control structures for detention facilities are typically designed to have the peak runoff rate from the facility and upstream development equal the peak flow that would occur without development. In Fairfax County, detention facilities are typically designed to control the peak runoff rate for selected design storm events (2 year and 5 year return period).

Stormwater Outfall: A single location, pipe discharge, or outlet structure that releases stormwater into a stream, river, or pond.

Stormwater Management User Fee: A means for funding stormwater improvements and the maintenance of existing stormwater facility infrastructure. In essence, each property owner is assessed an annual fee based on the property's impact on the stormwater drainage facilities determined by the impervious area of the property.

Stormwater Peak Shaving: Reducing the overall stormwater runoff peak flow through stormwater management techniques and facilities throughout the watershed.

Stormwater Ponds: A depression or dammed area with an outlet device that controls outflow. Stormwater ponds retain water from upstream areas, thereby reducing peak flows downstream. The storage volume and outlet control structures for stormwater ponds are typically designed to have the peak runoff rate from the pond and upstream development equal the peak flow that would occur without development. In Fairfax County, stormwater ponds are either dry or contain a permanent pool of water and typically designed to control the peak runoff rate for selected design storm events (2 year and 5 year return period).

Stream Valley: A stream and the land extending from either side of it to a line established by the high point of the concave/convex topography as delineated on a map adopted by the Fairfax County Board. Substantial Alteration: Expansion or

modification of a structure or development which would result in disturbance of any land within a resource protection area or land exceeding an area of 2,500 square feet within a resource management area.

Stream Rehabilitation: Stream rehabilitation is making the land useful again after a disturbance. Rehabilitation does not necessarily reestablish the predisturbance condition, but does involve establishing geological and hydrologically stable landscapes that support the natural ecosystem.

Stream Stabilization: Making changes or improvements to the stream channel and banks to improve the stream's ability to convey flows without further erosion and to restore habitat.

Structural Action: Specific projects or capital improvement project that include construction or implementation of specific stormwater management facilities such as regional ponds, dry pond wetland retrofits, low impact development, stream restoration, buffer restoration, and road crossing improvements.

Subwatershed: The land surface area where rainfall runoff will flow by gravity to a feature within a larger watershed. For example, the area that drains to the Round Lick Branch in the Cub Run Watershed is the Round Lick subwatershed.

T

Temporary Pond: A non-permanent depression or dammed area with an outlet device that controls outflow during ongoing development.

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.

Total Suspended Solids (TSS): Include all particles suspended in water that will not pass through a filter. Non-point sources of suspended solids typically include suspended soils from soil erosion at improperly managed construction sites.

U

Uncontrolled Stormwater Runoff: Urban runoff that lacks the proper stormwater management quantity and water quality controls.

Upper Occoquan Sewage Authority (UOSA): In 1971, the State Water Control Board enacted the "Occoquan Policy" that regulates wastewater treatment and sanitary sewer facility design requirements within the watershed upstream from the Occoquan Reservoir. The Upper Occoquan Sewage Authority (UOSA) was created to construct, manage, and operate the facilities required to meet these requirements. The UOSA Advanced Wastewater Treatment Plant (AWTP) was placed in service in 1978 and replaced 11 less efficient wastewater treatment plants in the Occoquan Watershed. The UOSA advanced wastewater treatment facility is one of the most technologically advanced treatment plants in the United States and provides a very high quality treated

wastewater discharge. Construction of the UOSA plant resulted in significant water quality improvements in Cub Run, Bull Run, and the Occoquan water supply reservoir.

V

Virginia Stormwater Management Handbook: The handbook has been developed by the Virginia Department of Conservation and Recreation (DCR) to provide basic guidance for compliance with Virginia Stormwater Management Regulations. The technical material provided within the handbook represents basic types of hydraulic and hydrologic analysis procedures and are not intended to represent the only acceptable way of preparing a stormwater management plan.

W

Watershed: The land surface area where rainfall runoff will flow by gravity to a particular stream. For example, the Cub Run watershed is the total land area that flows to Cub Run. The extent of the watershed will depend on the local topography and, to a lesser extent, manmade changes.

Wet Pond: A stormwater management technique containing a permanent pool of water. A wet pond provides a higher degree of water quality improvement than a dry pond.

Wetland: Ground surface that is inundated or saturated by surface or ground 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.