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Appendix A- Glossary

Alluvium: sediment deposited by streams and rivers in the stream channel and floodplain areas.

Baffle boxes: underground retention systems designed to remove settleable solids. There are several water quality inlet designs but most contain one to three chambers. The first chamber provides removal of coarse particles; the second chamber provides separation of oil, grease, and gasoline; and the third chamber provides safety relief if blockage occurs. Frequent maintenance and disposal of trapped residuals and hydrocarbons are necessary for these devices to continuously and effectively remove pollutants.

Best Management Practice (BMP): stormwater management practice used during construction to prevent or control the discharge of pollutants and minimize runoff to waterways. BMPs may include structural or non-structural solutions, a schedule of activities, prohibition of practices, maintenance procedures, or other management practices.

Bioretenion: small engineered and landscaped basins intended to provide water quality management by filtering stormwater runoff before release into stormdrain systems.

Biogeochemical: the chemical exchanges between living and no-living ecosystem components.

Bioswale: an open vegetated channel with an engineered soil matrix and underdrain system designed to filter runoff.

Catch basin inserts: catch basin inserts consist of a frame that fits below the inlet grate of a catch basin and can be fitted with various trays that target specific pollutants. Typically the frame and trays are made of stainless steel, cast iron, or aluminum to resist corrosion. The device is typically designed to accept the design flow rate of the inlet grate with bypasses as the trays become clogged with debris.

Charrette: a rapid, intensive, and creative work session, usually lasting a week or more, in which a design team focuses on a particular design problem [with diverse goals] to arrive at a collaborative solution. Charrettes are product-oriented. The public charrette is fast becoming a preferred way to face the planning challenges confronting American cities. (Source: University of Georgia's College of Environment and Design)

Clean Water Act: legislation passed by the U.S. Congress in 1971 that regulates the discharge of pollutants into surface and groundwater (streams, rivers, lakes, estuaries, oceans, aquifers). The regulations cover point source or end-of-pipe discharges and nonpoint source discharges primarily from stormwater runoff.

Combined Sewer Overflow (CSO): overflow or bypass of wastewater from a sewage collection system that conveys both wastewater and stormwater and is piped to a wastewater treatment plant. Generally located in older sections of cities; this was the standard practice during the early and mid 1900s.

Comprehensive Land Use Plan: guiding document for a community that sets the vision and goals for future actions. Some states require communities to develop comprehensive plans to guide future land use, economic development, and budget expenditures. Land use regulations are often outlined in the plan for development to achieve continuity, quality, economic, industrial and residential goals. A planning and zoning map is usually part of the plan, showing where each type of development or land use can be built within the community.

Detention Storage: the volume occupied by water below the level of the emergency spillway crest during operation of a stormwater detention facility.

Dry Well: a subsurface storage facility that receives and temporarily stores stormwater runoff from rooftops, discharging through infiltration into surrounding soils.

Emergency Spillway: a device or devices for discharging water when inflow exceeds designed outflow from a detention facility. The emergency spillway can prevent damage to the detention facility from sudden release of impounded water.

Erosion and Sediment Control (ESC): tools and methods that manage or abate the erosion of soil from bare surfaces during construction.

Evapotranspiration: the water lost to the atmosphere by two processes—overall evaporation and plant transpiration. Evaporation is the loss of moisture from lakes and reservoirs, wetlands, soil, and snow cover; transpiration is the loss from living-plant surfaces.

Extended Dry Detention Basin: any detention facility, vegetated with native plants, designed to permit no permanent impoundment of water but designed to detain the water quality volume for 40 hours.

Extended Detention Wetland: a land area that is permanently wet or periodically flooded by surface or groundwater, and has developed hydric soil properties that support vegetation growth under saturated soil conditions. It may have been engineered with adequate capacity to detain large storm flows.

Extended Wet Detention Basin: any detention facility designed to include a permanent pool and designed to detain the water quality volume for 40 hours.

Filter Strip: a grassed area that accepts sheet flow runoff from adjacent surfaces. It slows runoff velocities and filters out sediment and other pollutants. Filter strips may be used to treat shallow, concentrated, and evenly distributed storm flows.

First Flush: the initial runoff (after a dry spell) from a storm or snowmelt event that commonly contains elevated pollutant concentrations. Often the first flush contains most of the pollutants in drainage waters produced by the storm event.

Floodplain: a relatively level surface that is submerged during times of flooding. Located at either side of a waterway, it is composed of stratified alluvial soils built up by silt and sand carried out of the main channel. Activities within floodplains are often regulated by the Federal Emergency Management Agency (FEMA) or other regulatory agency.

Forebay: a storage basin upstream from the inlet to a larger storage basin designed to capture and settle sediments.

Frost Penetration: The layer of soil that freezes during winter season often defined as the frost penetration depth. The depth of soil at which the earth will freeze and swell. This depth varies in different parts of the country. For example, see Missouri River Basin Depth of Frost Penetration Map. National Weather Service River Forecast Center National Oceanic and Atmospheric Administration (NOAA.) <http://www.crh.noaa.gov/mbrfc/?n=frost> For frost depth calculation example, visit <http://www.pavementinteractive.org/article/Calculation-of-Frost-Depth/>

GIS: Geographical Information System: an electronic system for storing and arranging data, often used to generate layers of informative maps.

Green Infrastructure: systems and practices that use or mimic natural processes to infiltrate, evapotranspire, or reuse stormwater or runoff on the site where it is generated. It is an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations. As a stormwater treatment approach, green infrastructure uses natural and engineered systems to cleanse water and reduce excess volumes by filtering and treating using plants, soils, and microbes.

Groundwater Mounding: commonly, an outward and upward expansion of the free water table caused by shallow re-injection, percolation below an impoundment, or other surface recharge method (essentially, the reverse of the cone of depression effect created by a pumping well.) Mounding can alter groundwater flow rates and direction; however the effects are usually localized and may be temporary, depending upon the frequency and duration of the surface recharge events. (Alabama State Water Program.)

Hydrodynamic Devices: hydrodynamic devices are engineered systems with an internal component that creates a swirling motion as runoff flows through a cylindrical chamber. The concept behind these designs is that sediments settle out as runoff moves in this swirling path. Typically these devices are prefabricated and come in a range of sizes targeted at specific flow rates. Maintenance requirements include the periodic removal of oil, greases, and sediments, typically by using a vacuum truck.

Hydrophobic: water loving.

Hydrologic Soil Group (HSG): Natural Resources Conservation Service soil grouping according to minimum infiltration rate, or the capacity of soil (absent vegetation) to permit infiltration. Soils are grouped from HSG A (greatest infiltration and least runoff) to D (least infiltration and greatest runoff).

Impact Stilling Basin: a pool placed below an outlet spillway and designed for reducing discharge energies in order to minimize downstream erosive effects.

Impervious Surface: natural or manmade ground surfaces that are hard and cannot be readily penetrated by water and other fluids. Natural ground surfaces that are compacted from human or equipment traffic result in an impervious surface.

Infiltration: percolation of water into the ground.

Infiltration Basins: earthen structures that capture a certain stormwater runoff volume, hold this volume, and infiltrate it into the ground over a period of days.

Infiltration Practices: a system allowing percolation of water into the subsurface of the soil. This may recharge shallow or deep groundwater. Basins or trenches may serve as key components of this system.

Infiltration Trench: small, excavated trenches filled with coarse granular material; they collect first flush runoff for temporary storage and infiltration.

Karst Geology: a specific terrain where weathering of the bedrock has created solution cavities allowing interconnection between subsurface and surface drainage ways (8).

Leadership in Energy and Environmental Design (LEED): an internationally recognized certification system that measures how well a building or community performs across all the metrics that matter most: energy savings, water efficiency, carbon dioxide emission reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. LEED addresses stormwater management through water efficiency, stewardship of resources and sensitivity to their impacts.

Level of Service: the level of water quality protection recommended for a development or provided by a post development stormwater management system. The level of service requirement for the development is determined by the change in runoff from the predevelopment condition. The level of service provided by the stormwater management system is determined by a combination of detention and water quality treatment.

Level Spreader: a structural practice of redistributing concentrated flows to sheet flow over a wide area to minimize erosive velocities and increase infiltration and treatment potential.

Low Impact Development (LID): a set of approaches and practices designed to reduce runoff of water and pollutants

from the site at which they are generated. It is the application of techniques that are modeled after nature: manage rainfall by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source.

Media Filtration Practices: suitable only for runoff from highly impervious stabilized areas, these filters consist of a pretreatment area or chamber in conjunction with a self-contained bed of media (i.e. sand) used to treat wastewater or diverted stormwater runoff. The water subsequently is collected in underground pipes for additional treatment or discharge.

Municipal Separate Storm Sewer System (MS4): separate collection systems for wastewater and stormwater used by municipalities, local governments, and local entities to manage wastewater.

Native Soil and Vegetation Preservation: the practice of preserving land areas containing soil profiles and vegetation that have adapted to the climate, hydrology and ecology of the area to minimize the impacts of development.

Native Vegetation: this term refers to plant types historically located in this geographic area as part of the tall grass prairie, riparian woodland, and oak-hickory forest plant communities. These plant species have not undergone change or improvement by humans, and are still found growing in uncultivated or relatively undisturbed areas within this region. Due to their historic presence, these plant species are extremely well adapted to the climate and natural disturbances (e.g., fire, grazing, and flooding) of the region.

Natural Channel: any river, creek, channel, or drainageway that has an alignment, bed and bank materials, profile, bed configuration, and channel shape predominately formed by the action of moving water, sediment migration, and biological activity. The natural channel's form results from regional geology, geography, ecology and climate.

National Pollutant Discharge Elimination System (NPDES): defined in Section 402 of the Clean Water Act, this provides for the permit system that is key for enforcing the effluent limitations and water quality standards of the Act. The Phase II Final Rule published in the Federal Register on Dec. 8, 1999 requires NPDES permit coverage for stormwater discharges from certain regulated, small, municipal separate storm sewer systems (MS4s) and from land areas greater than 1 acre disturbed by construction.

Native Vegetation Swale: native grasses and forbes planted in a swale to reduce velocity of runoff and promote infiltration.

Non-structural Best Management Practice or Stormwater Control Measure: particular policies, plans, ordinances, and procedures that are not built structures.

Overlay Zoning: specific class of land use or zoning that is enforced in addition to a base zoning classification. It is often used for regulating or protecting special assets in the community, such as areas of prime habitat or conservation management.

Peak flow rate: maximum discharge measured during a precipitation event.

Pervious Pavement: a type of pavement that allows water to infiltrate the surface layer and enter into a high-void, aggregate, sub-base layer. The captured water is stored in the sub-base layer until it infiltrates the underlying soil.

Physiographic: physical and geological characteristics particular to a landscape environment.

Post-construction stormwater: management of stormwater runoff in built environments, after site development is completed. It includes retrofits of stormwater management systems during redevelopment of property.

Predevelopment: the time period prior to a proposed or actual development activity at a site. Predevelopment may refer an undeveloped site or a developed site that will be redeveloped or expanded: also referred to as pre-construction.

Proprietary Systems: configured and designed system that removes pollutants from stormwater runoff by filtering stormwater through a bed of media. One class of media is chemically inert and targets suspended solids and associated pollutants. The second class of media utilizes ion exchange or adsorption processes to remove dissolved contaminants. Proprietary systems may include baffle boxes, catch basin inserts, hydrodynamic devices, and media filtration devices.

Rain Garden: a small depression planted with native wetland and prairie vegetation where runoff collects and infiltrates, rather than a turfgrass lawn.

Riparian Corridor: strips of herbaceous and woody vegetation located parallel to perennial and intermittent streams and adjacent to open bodies of water. Riparian buffers capture sediment and other pollutants in runoff before it enters the adjoining surface waterbody.

Seasonal High Water Table: Also Seasonal High Groundwater Table: A seasonal high water table, or SHWT, is the shallowest depth to free water that stands in an unlined borehole or where the soil moisture tension is zero for a significant period (more than a few weeks) (Watts and Hurt, 1991) According to Rule 40C-42, Florida Administrative Code, the SHWT elevation means the highest level of the saturated zone in the soil in a year with normal rainfall.

State-of-the-practice: most current methods for implementing policies and practices, in this case referring to the management of stormwater runoff.

Stormwater Control Measure (SCM): permanent stormwater management practice used post-construction to prevent or control the discharge of pollutants and minimize runoff to waterways. SCMs may include structural or nonstructural solutions, a schedule of activities, prohibition of practices, maintenance procedures, or other management practices.

Stormwater Detention Facility: any structure, device, or combination thereof with a controlled discharge rate less than its inflow rate.

Stormwater Pollution Prevention Plan or SWPPP: a plan written to manage erosion and sediment runoff into drainages and streams during construction.

Stream Buffer: an area defined by regulatory agencies or municipalities for the protection of riparian corridors and floodplains.

Structural Best Management Practice or Stormwater Control Measure: refers to stormwater management structures, designed and constructed to achieve a certain goal and are permanent structures in the landscape.

Submergent Plants: plants that grow wholly or partly in water, such as water lillies or pickerel weed.

Swale: a depressed area used for stormwater conveyance or short term storage. Types of swales may include bioswales, native vegetation swales, turf grass swales, and wetland swales.

Time of Concentration: The time period necessary for surface runoff to reach the outlet of a subbasin from the hydraulically most remote point in the tributary drainage area.

Total Maximum Daily Load (TMDL): the maximum amount of a specific pollutant allowed in a water body over a 24-hour period. TMDLs are designed to limit the increase of pollutants discharged to streams with degraded water quality. Regulatory limits are established for each pollutant.

Total Suspended Solids (TSS): matter suspended in stormwater excluding litter, debris, and other gross solids exceeding one millimeter in diameter.

Treatment Train: the series of stormwater control measures (or other treatments) used to achieve biological and physical treatment efficiencies necessary for removing pollutants from stormwater (or other wastewater flows).

Tree Preservation: maintenance of existing trees and shrubs.

Turf Grass Swale: a swale designed to convey stormwater planted with turf grass. Turf grass swales are meant to be used as a substitute for closed drainage systems.

Uplands: lands elevated above the floodplain that are seldom or never inundated.

Value Rating (VR): the assumed water quality improvement value of a cover type or BMP, based on its ability to improve water quality and mitigate runoff volume.

Water Quality: the chemical, physical, and biological characteristics of water. This term also can refer to regulatory concerns about water's suitability for swimming, fishing, drinking, agriculture, industrial activity, and healthy aquatic ecosystems.

Water Quality Volume (WQv): the storage needed to capture and treat 90 percent of the average annual stormwater runoff volume. It is calculated by multiplying the water quality storm by the volumetric runoff coefficient and site area.

Watershed: all the land area that drains to a given point (also described as a basin, catchment and drainage area).