Certificate in Stormwater Management and Drainage Design

Stormwater Management Plan Development and Implementation

Stormwater Management Plan (SWMP) Development and Implementation are key components of the Certificate in Stormwater Management and Drainage Design. This explanation will cover some of the key terms and vocabulary associated with these topics.

Stormwater Management Plan (SWMP): A Stormwater Management Plan (SWMP) is a document that outlines the strategies and practices that will be used to manage stormwater runoff from a development or redevelopment site. The plan should include best management practices (BMPs) that will be implemented to reduce the volume and improve the quality of stormwater runoff.

Best Management Practices (BMPs): Best Management Practices (BMPs) are a set of practices and technologies that are used to manage stormwater runoff. BMPs can be structural or non-structural and are designed to reduce the volume and improve the quality of stormwater runoff. Examples of BMPs include detention ponds, wetlands, vegetated filter strips, infiltration trenches, and porous pavement.

Stormwater Runoff: Stormwater runoff is the water that flows over the land surface when it rains or snows. This water can pick up pollutants such as oil, grease, sediment, and nutrients as it flows over streets, parking lots, and other impervious surfaces.

Impervious Surfaces: Impervious surfaces are surfaces that do not allow water to infiltrate into the ground. Examples of impervious surfaces include streets, parking lots, and rooftops.

Water Quality: Water quality refers to the physical, chemical, and biological characteristics of water that determine its suitability for various uses. In the context of stormwater management, water quality refers to the levels of pollutants present in stormwater runoff.

Total Suspended Solids (TSS): Total Suspended Solids (TSS) is a measure of the amount of solid particles present in stormwater runoff. High levels of TSS can harm aquatic life and reduce the aesthetic value of water bodies.

Pollutants of Concern (POCs): Pollutants of Concern (POCs) are specific pollutants that are known to be harmful to the environment or human health. Examples of POCs include heavy metals, oil and grease, and nutrients.

Stormwater Utility Fee: A stormwater utility fee is a fee charged to property owners to fund the operation and maintenance of a stormwater management system. The fee is typically based on the amount of impervious surface on a property.

Green Infrastructure: Green Infrastructure refers to the use of natural and engineered systems to manage

stormwater runoff. Examples of green infrastructure include rain gardens, bioswales, and green roofs.

Low Impact Development (LID): Low Impact Development (LID) is an approach to stormwater management that emphasizes the use of natural systems and small-scale engineering solutions to manage stormwater runoff. LID practices include the use of bioretention cells, rain barrels, and permeable pavement.

Stormwater Ordinance: A stormwater ordinance is a local law that regulates the management of stormwater runoff. The ordinance may establish requirements for the design and construction of stormwater management systems, set standards for water quality, and establish penalties for non-compliance.

Stormwater Master Plan: A stormwater master plan is a comprehensive plan for the management of stormwater runoff in a community or watershed. The plan typically includes an assessment of existing stormwater management systems, an identification of problem areas, and a set of recommendations for addressing those problems.

Hydrologic Modeling: Hydrologic modeling is the use of computer simulations to predict the flow of water in a watershed. Hydrologic models can be used to predict the volume and rate of stormwater runoff, as well as the impact of different stormwater management practices.

Watershed: A watershed is an area of land that drains to a particular water body. Watersheds can vary in size from a few acres to millions of acres.

Hydraulic Modeling: Hydraulic modeling is the use of computer simulations to predict the movement of water through a stormwater management system. Hydraulic models can be used to predict the flow rate and pressure in pipes, channels, and other conveyance systems.

National Pollutant Discharge Elimination System (NPDES): The National Pollutant Discharge Elimination System (NPDES) is a federal program that regulates the discharge of pollutants into waters of the United States. The program requires permits for discharges from point sources, such as industrial facilities and municipal sewage treatment plants.

MS4: An MS4 (Municipal Separate Storm Sewer System) is a system of conveyances designed to collect and transport stormwater runoff, but excluding combined sewers and wastewater treatment systems. MS4s are regulated under the NPDES program.

Illicit Discharge: An illicit discharge is the discharge of pollutants into a stormwater conveyance system that is not authorized by the NPDES permit. Examples of illicit discharges include the discharge of industrial waste, sewage, and household chemicals.

Public Education and Outreach: Public education and outreach are key components of stormwater management. These activities are designed to inform the public about the impact of stormwater runoff on the environment and to encourage behaviors that reduce pollutant loads.

Post-Construction Stormwater Management: Post-construction stormwater management refers to the practices and technologies that are used to manage stormwater runoff from developed or redeveloped sites. These practices are designed to maintain the pre-development hydrologic conditions of a site.

Public Involvement and Participation: Public involvement and participation are key components of stormwater management. These activities are designed to engage the public in the decision-making process and to ensure that the needs and concerns of the community are addressed.

Construction Stormwater Management: Construction stormwater management refers to the practices and technologies that are used to manage stormwater runoff from construction sites. These practices are designed to minimize the impact of construction activities on water quality and to prevent erosion and sedimentation.

Stormwater Management Program: A stormwater management program is a comprehensive program for the management of stormwater runoff in a community or watershed. The program typically includes an assessment of existing stormwater management systems, an identification of problem areas, and a set of recommendations for addressing those problems.

Erosion Control: Erosion control is the practice of preventing or minimizing the movement of soil due to the action of wind or water. Erosion control practices include the use of sediment basins, silt fences, and vegetated filter strips.

Sediment Control: Sediment control is the practice of preventing or minimizing the movement of sediment due to the action of wind or water. Sediment control practices include the use of sediment basins, silt fences, and sediment traps.

Hydrologic and Hydraulic (H&H) Analysis: Hydrologic and hydraulic (H&H) analysis is the use of computer simulations to predict the flow of water in a watershed. H&H analysis can be used to predict the volume and rate of stormwater runoff, as well as the impact of different stormwater management practices.

Watershed Management Area (WMA): A Watershed Management Area (WMA) is a geographic area defined by a common watershed boundary. WMAs are used as a framework for stormwater management planning and implementation.

Stormwater Best Management Practices (BMPs): Stormwater Best Management Practices (BMPs) are a set of practices and technologies that are used to manage stormwater runoff. BMPs can be structural or non-structural and are designed to reduce the volume and improve the quality of stormwater runoff. Examples of BMPs include detention ponds, wetlands, vegetated filter strips, infiltration trenches, and porous pavement.

Stormwater Management and Design Criteria: Stormwater management and design criteria are the standards and guidelines that are used to design and construct stormwater management systems. These criteria may include requirements for the size and location of stormwater conveyance systems, water