
Certificate in Stormwater Management and Drainage Design

Stormwater Pollution Prevention

Stormwater Pollution Prevention (SWPP) is a critical aspect of stormwater management and drainage design. This explanation will cover key terms and vocabulary related to SWPP in the context of the Certificate in Stormwater Management and Drainage Design.

Stormwater: Stormwater is water that originates from precipitation, including rain and snowmelt, and flows over the land surface.

Nonpoint Source Pollution: Nonpoint source pollution is pollution that comes from diffuse sources, such as runoff from agricultural land, construction sites, and urban areas, and is carried by stormwater.

Point Source Pollution: Point source pollution is pollution that comes from a specific source, such as a pipe or a ditch, and is easily identifiable.

Stormwater Pollution Prevention Plan (SWPPP): A SWPPP is a document that outlines the Best Management Practices (BMPs) that will be implemented to prevent or reduce pollutants in stormwater runoff.

Best Management Practices (BMPs): BMPs are specific actions or measures that are taken to prevent or reduce pollution in stormwater runoff.

Illicit Discharge Detection and Elimination (IDDE): IDDE is the process of identifying and eliminating sources of illegal or improper discharges into the stormwater system.

Post-Construction Stormwater Management: Post-construction stormwater management refers to the measures taken to manage stormwater runoff after construction activities have been completed.

Total Maximum Daily Load (TMDL): A TMDL is the maximum amount of a pollutant that a water body can receive and still meet water quality standards.

National Pollutant Discharge Elimination System (NPDES): The NPDES is a federal permit program that regulates the discharge of pollutants into waters of the United States.

Stormwater Management Program: A stormwater management program is a comprehensive plan that outlines the measures that will be taken to manage stormwater runoff and protect water quality.

Public Education and Outreach: Public education and outreach is the process of informing and educating the public about stormwater pollution prevention and the importance of protecting water quality.

Construction Site Stormwater Runoff Control: Construction site stormwater runoff control refers to the measures taken to manage stormwater runoff from construction sites to prevent or reduce pollution.

Industrial Stormwater Runoff Control: Industrial stormwater runoff control refers to the measures taken to

manage stormwater runoff from industrial facilities to prevent or reduce pollution.

Hydrologic Soil Group: A Hydrologic Soil Group is a classification system used to group soils based on their hydrologic properties, such as infiltration rate and runoff potential.

Green Infrastructure: Green infrastructure refers to the use of natural or engineered systems to manage stormwater runoff and provide other environmental, social, and economic benefits.

Low Impact Development (LID): LID is a stormwater management approach that emphasizes the use of decentralized, small-scale, and environmentally friendly practices to manage stormwater runoff.

Infiltration: Infiltration is the process of water seeping into the ground, rather than running off the land surface.

Detention: Detention is the temporary storage of stormwater runoff, followed by its controlled release.

Retention: Retention is the permanent storage of stormwater runoff.

First Flush: The first flush is the initial flush of stormwater runoff, which often contains a higher concentration of pollutants than subsequent runoff.

Bioretention: Bioretention is the use of vegetation and soil to treat and manage stormwater runoff.

Permeable Pavement: Permeable pavement is a type of pavement that allows stormwater to infiltrate through it, rather than running off the surface.

Swale: A swale is a shallow, wide, and gently sloping depression that is used to manage stormwater runoff.

Rain Garden: A rain garden is a shallow, depressed area that is planted with native vegetation and is used to treat and manage stormwater runoff.

Filter Strip: A filter strip is a strip of vegetation that is used to treat and manage stormwater runoff.

Underdrain: An underdrain is a pipe or series of pipes that is used to collect and convey stormwater runoff.

Curb and Gutter: Curb and gutter is a system of curbs and gutters that is used to collect and convey stormwater runoff.

Storm Drain: A storm drain is a pipe or a series of pipes that is used to collect and convey stormwater runoff.

Catch Basin: A catch basin is a structure that is used to collect and convey stormwater runoff.

Dry Well: A dry well is a structure that is used to store and infiltrate stormwater runoff.

Hydrodynamic Separator: A hydrodynamic separator is a device that is used to remove pollutants from stormwater runoff.

Oil/Water Separator: An oil/water separator is a device that is used to remove oil and other hydrocarbons from stormwater runoff.

Sedimentation Basin: A sedimentation basin is a structure that is used to settle out suspended solids from stormwater runoff.

Vortex Separator: A vortex separator is a device that is used to remove pollutants from stormwater runoff through the use of vortex action.

In conclusion, this explanation has covered key terms and vocabulary related to Stormwater Pollution Prevention (SWPP) in the context of the Certificate in Stormwater Management and Drainage Design. These terms and concepts are essential for understanding the principles and practices of SWPP and for designing and implementing effective SWPPs. By implementing BMPs and following the regulations set forth in the NPDES program, it is possible to prevent or reduce pollution in stormwater runoff and protect water quality.

When designing a SWPPP, it is important to consider the specific characteristics of the site, such as the soil type, land use, and climate, and to select BMPs that are appropriate for those characteristics. This may involve the use of green infrastructure practices, such as bio-retention, permeable pavement, and swales, as well as the use of traditional stormwater management practices, such as detention and retention basins.

It is also important to engage in public education and outreach to inform and educate the public about the importance of protecting water quality and the role that they can play in preventing stormwater pollution. This can include the development and implementation of educational materials, such as brochures, posters, and websites, as well as the organization of community events and workshops.

In addition, it is essential to implement IDDE programs to detect and eliminate sources of illegal or improper discharges into the stormwater system. This can involve the use of visual inspections, dye testing, and other techniques to identify and eliminate sources of pollution.

Finally, it is important to monitor the effectiveness of the SWPPP and make adjustments as necessary to ensure that it is achieving its intended goals. This may involve the use of water quality monitoring, flow monitoring, and other techniques to evaluate the performance of the SWPPP and identify areas for improvement.

In summary, Stormwater Pollution Prevention (SWPP) is a critical aspect of stormwater management and drainage design. By understanding key terms and vocabulary related to SWPP, it is possible to design and implement effective SWPPs that prevent or reduce pollution in stormwater runoff and protect water quality. This requires a comprehensive approach that includes the use of green infrastructure practices, traditional stormwater management practices, public education and outreach, IDDE programs, and monitoring and evaluation.