What are Best Management Practices (BMPs)?

BMPs are measures to prevent stormwater runoff from adversely affecting and degrading water quality in our creeks, lakes, and rivers. They may be educational, outreach, active illicit discharge detection, construction, post construction, or good housekeeping measures. This brochure focuses on construction related BMPs that must be implemented whenever a storm water permit is issued for residential, commercial, industrial, or governmental projects.

Post construction (PC) BMPs will enhance water quality through control, capture, and treatment of natural or man-made pollutants before the water runoff is discharged into our waterways. These BMPs may use native vegetative filters, infiltration techniques, detention basins, or manufactured structures to cleanse runoff.

Avoidance & Minimization

This is the foremost BMP in reducing pollutants entering our waterways. It is efficient and cost effective. If we can avoid or minimize the activities that enable pollutants to be picked up by stormwater runoff, we can get closer to our goal of clean water with less effort. Practicing this BMP can also lower the overall cost of required BMPs and development.

Categories & Types

This brochure covers two BMP categories. The first is *Erosion and Sediment Control*. It applies to construction sites, and pond and stream shorelines. This BMP utilizes silt filter fences, sediment traps, and bank stabilization measures to keep soil solids out of the runoff and receiving waterways.

The second category is *Stormwater Treatment* and addresses controlling the quantity and quality of stormwater runoff with *Conveyance* and *Stormwater Detention* BMPs. Conveyance BMPs treat and then convey stormwater runoff either into the ground or the waterways. Treatment and infiltration is achieved with the use of native vegetated filters or deep rooted plants and underdrains to capture and filter out pollutants. Stormwater detention BMPs to control volume are required for larger projects and require construction of detention basins. Constructed wetland basins most effectively filter and capture pollutants, followed by wet, dry, and then underground basins.

Pollutants

Total suspended solids (TSS) and nutrients are the pollutants primarily targeted and removed by PC BMPs. Reduction of TSS is very important because common TSS constituents are sediment and heavy metals attached to the sediment, floating debris, and dissolved chlorides and sulfates. Nutrient laden runoff containing fertilizers, animal droppings, and byproducts or waste from industrial processes can also be effectively removed with PC BMPs. However, to most effectively treat runoff, just one BMP may not suffice, and oftentimes, a series of BMPs or a *BMP treatment train* will be necessary.

Selection Process

The selection of post construction BMPs is dependent upon the local pollutant producing activity and must be tailored to each individual site for effective treatment.

In determining the appropriate BMPs, first identify the treatment goal, which will always be runoff that is relatively free of natural or man-made pollutants. Next, identify the potential pollutants and pollutant sources and use that to select the most effective BMP(s) for the job. Then, finally determine the magnitude of the pollution level so that the BMP selections can be further refined and sized appropriately.

Maintenance & Easements

A frequently overlooked aspect of post construction BMP implementation is future long term maintenance and easements. To be successful, BMP implementation must be thought out and designed with the cooperation of developers, plan commissions, engineers, and environmental scientists.

If you are in the process of planning new construction or major site improvements within the Village, you can get more information about PC BMP requirements by contacting the:

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Q & A

Are BMPs required?

The Federal Water Pollution Control Act of 1972, later referred to as the Clean Water Act of 1977, last revised in 2002, states that the "objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Since 2003, educational and outreach BMPs have been implemented and illicit discharge & detection and pollution prevention programs are being developed. Next is the adoption and implementation of PC BMPs in early 2008 to satisfy our requirements under our IEPA General Permit.

Why use BMPs?

BMP implementation is required by the Clean Water Act. Local agencies are required to educate and involve the public on water quality issues, develop an illicit discharge & detection elimination program, require construction and post construction pollutant reduction measures, and practice pollution prevention. Secondly, it just makes sense to strive for the goal of the Clean Water Act which is to nationally reduce pollutants entering our creeks, lakes, and rivers and to improve the quality of our Nation's waters.

What are some BMPs?

There are many post construction BMPs that can be used in the Village. Solutions utilizing native plants include: filter strips, swales, and infiltration trenches and basins. Available manufactured solutions are porous pavement and manufactured structures such as triple basins. Detention basin options can be underground, dry, wet, and constructed wetlands. Consult a qualified professional as to what is appropriate for your situation.

What do BMPs cost?

Individual post construction BMPs typically cost from $1,000 to $53,000, however more than one will likely be required. On the low end, single family residential BMPs cost about $3,000 per acre for installing a native vegetated swale and a filter strip. For less than one acre non-residential, the low end cost is about $15,000 per acre for a native vegetated swale and a manufactured structure.

Who designs & installs BMPs?

BMP basins and treatment trains are typically designed with an engineer and environmental scientist team and can then be installed by landscape contractors experienced in native plantings. Manufactured BMP structures can be purchased from their salespeople and must be installed per manufacturer's specifications.

Where can I learn more?

- NPDES National Menu of BMPs http://epa.gov/npdes/stormwater/menuofbmps

Guide to

BEST MANAGEMENT PRACTICES

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