



# POST-CONSTRUCTION STORMWATER QUALITY PROTECTION TREATMENT AND CONTROL

## THE STORMWATER QUALITY IMPROVEMENT PROGRAM

The City of Colleyville is subject to the National Pollutant Discharge Elimination System (NPDES) Municipal regulations for stormwater quality protection. These Federal and State regulations require controls on potential sources of pollution including preventing long term pollution from developed sites, this document will provide examples on how to develop permanent Best Management Practices (BMPs).

### WHAT IS A BMP?

Best Management Practice, or BMP, is a term used to describe an activity, technique, structure, or device that is intended to protect or improve stormwater quality.



### TREATMENT CONTROL MEASURES

Stormwater quality treatment control measures are engineered technologies designed to remove pollutants from site runoff. The treatment control methods suitable for a given project depend on a number of factors including: type of pollutants to remove, amount of stormwater runoff to be treated, and site conditions. Land requirements and costs to design, construct and maintain treatment control measures vary by measure and locale.

### SOURCE CONTROL MEASURES

Source control and prevention, including management techniques and education, are always emphasized over treatment controls, which attempt to remove contaminants once the runoff is already polluted.

### RUNOFF REDUCTION CONTROL MEASURES

The goal of runoff reduction control measures is to mimic a site's predevelopment balance of runoff and infiltration by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Runoff reduction controls are integrated into site design and can be distributed throughout the site in a series of small-scale (or micro-scale) measures.

## POST-CONSTRUCTION STORMWATER QUALITY

Project applicants should plan and design projects with suitable long term pollution controls. Water quality BMPs can alter a project's site design, such as planning room for water quality basins or vegetated swales. Project proponents should provide a 'BMP plan' with initial project submittals to lay out proposed solutions. The BMP plan identifies probable sources of pollution, means of source control to prevent such pollution, and proposed treatment controls. Additionally, construction plans and permits approved by the County have to include adequate detail to insure proper construction, implementation, operation, and long term maintenance of the BMPs for the project. Long term funding and a mechanism to transfer maintenance responsibility when a property is sold should be considered and addressed.

Design requirements should include such things as use of low impact development principles, proper design of trash enclosures, material storage areas, and automotive facilities, plus operation and maintenance requirements as well as specific design requirements.

### OPERATION AND MAINTENANCE

The property owner is ultimately responsible for the operation and maintenance and long-term continued performance of the source and treatment control measure(s). Failure to properly operate and maintain the measures could result in no treatment of site runoff, or a slug loading of pollutants to the storm drain system

### DESTINATION COLLEYVILLE

The Comprehensive Plan – Destination Colleyville reflects the vision for the Colleyville of tomorrow. Maintain and protect the strength of Colleyville's natural beauty;  
Protect the tree-lined roadways complemented by stunning homes and pastures that contribute to Colleyville's "country feel";  
Preserve the high quality neighborhoods by promoting low density;  
Protect natural and semi-natural areas surrounding Big Bear Creek and Little Bear Creek.

# EXAMPLES OF BEST MANAGEMENT PRACTICES

## Constructed Wetland Basin



A constructed wetland basin is an earthen basin treatment system with a permanent pool of water. The basin contains an area above the permanent pool to retain runoff from the stormwater quality design storm and slowly releases excess water over a specified drawdown period.

## Vegetated Swale



A vegetated swale is a wide, shallow, open channel planted with dense, sod-forming vegetation and designed to accept runoff from adjacent surfaces.

## Stormwater Planter



A stormwater planter is a low-lying vegetated planter that receives runoff from roof drains or adjoining paved areas. A shallow surcharge zone above the vegetated surface temporarily stores stormwater.

## Sand Filter



A sand filter is a two-stage constructed treatment system including a pretreatment sedimentation basin and a filtration basin containing sand.

## Infiltration Trench



An infiltration trench is a long, narrow trench constructed in naturally pervious soils and filled with gravel.

## Vegetated Filter Strip



A Vegetated Filter Strip is a gently sloped soil surface planted with dense, sod-forming vegetation and designed to receive and treat sheet flow runoff from adjacent surfaces.

## Disconnected Pavement



Disconnected pavement is any impervious pavement designed to sheet flow runoff over adjoining vegetated areas or porous pavement before it reaches the storm drain system.

## Infiltration Basin



An infiltration basin is a shallow earthen basin constructed in naturally pervious soils and designed for infiltrating stormwater.

## Interceptor Trees



Interceptor trees are those used in residential and commercial settings as part of the stormwater quality management plan to reduce runoff and pollution from the development project.

## Porous Pavement



Porous pavement allows stormwater runoff to infiltrate into the ground through voids in the pavement materials.

## RESOURCES FOR MORE INFORMATION

City of Colleyville  
Public Works  
Environmental Compliance  
100 Main Street  
Colleyville, TX 76034

Phone: 817.503.1090  
Email: [rbright@colleyville.com](mailto:rbright@colleyville.com)  
Website: [Colleyville.com](http://Colleyville.com)



EPA Nonpoint Source Website  
[www.epa.gov/nps/](http://www.epa.gov/nps/)

Low Impact Development  
<http://www.lid-stormwater.net/>