

PC-19 EXTENDED DETENTION BASIN WITH MICROPOOL

Reference: Denver Urban Drainage and Flood Control District, Volume 3 Criteria Manual.

**BMP Objectives**

- Perimeter Control
- Slope Protection
- Borrow and Stockpiles
- Drainage Areas
- Sediment Trapping
- Stream Protection
- Temporary Stabilizing
- Permanent Stabilizing

Definition and Purpose

An extended detention basin with micropool is used to capture and treat a specific volume of stormwater runoff. Because of a smaller outlet, the basin releases stored flows over a period of a few days and drains totally dry sometime after the storm ends. The basin is considered dry, although the formation of small wetland marshes or shallow pools in the bottom can enhance the effectiveness of the basin.

Appropriate Applications

- Can be used to enhance stormwater quality and reduce peak discharges.
- Are most applicable in residential, commercial, and industrial areas.
- If constructed early in development of a particular site, become an effective means of trapping sediment from construction activities.
- Can be retrofitted into existing flood control facilities.
- Are used to improve quality of urban runoff.
- Are used for regional and/or follow-up water quality treatment but are also effective as an “on-site” BMP.
- Work well in conjunction with other BMPs used to control upstream and downstream sediments.
- Can be effective if they are combined with BMPs that attenuate peak stormwater discharges or reduce runoff volumes. If needed, flood routing detention volume can be designed and captured by the basin, above volume used for water quality treatment. If combined effectively with other BMPs, the size of the basin can be reduced.
- Can also be used for recreation and open space and, in some cases, wildlife habitat if wetlands or shallow pools are incorporated into the design.

Design Parameters

- If possible, basin should be incorporated into existing facility or flood control basin.
- Other urban uses such as recreation, open space, and/or wildlife habitat should be considered.
- Generally, minimum drain time of 40 hours is recommended to allow finer particulates found in urban stormwater runoff to settle.
- Generally, land required is approximately 0.5 to 2.0 percent of tributary development area.
- Groundwater elevations should be accounted for in the design and construction of the basin.
- If minimum dam heights and volumes are exceeded, regulatory requirements should be reviewed for dam embankments and storage volumes.

Maintenance and Inspection

- Conduct inspections as required by the NPDES permit or contract specifications during construction.
- Periodic inspection and maintenance will be required based on post-construction site conditions.
- Make any repairs necessary to ensure the measure is operating properly.
- Regular maintenance is necessary to remove surface sediment, trash, debris, and leaf litter, and dead or diseased plant material.