



# FAIRFAX COUNTY

Department of Public Works and Environmental Services  
Office of Site Development Services  
12055 Government Center Parkway  
Fairfax, Virginia 22035-5503

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## V I R G I N I A

October 2, 2001

01-11

**TO:** All Architects, Builders, Developers, Engineers, and Surveyors Practicing in Fairfax County

**SUBJECT:** Revised Procedures for Requests to Use Innovative Best Management Practices

Effective immediately, requests for the Director's approval to use certain innovative Best Management Practices (BMP), as provided for under Section 6-0402.4 of the Public Facilities Manual (PFM), may be submitted as part of plan submissions rather than by a separate letter of request. This *Letter to Industry* details the submission procedure and information required to be included in plans. An initial list of innovative BMPs that are acceptable for review under this procedure is attached. Provisional phosphorus removal efficiencies, restrictions on use, maintenance and siting considerations, and design standards are included in a separate design document titled [Guidelines for the Use of Innovative BMPs in Fairfax County, Virginia](#). The design document is available at the Plan and Document Control Counter and will be available on the Department of Public Works and Environmental Services web site at [www.co.fairfax.va.us/dpwes](http://www.co.fairfax.va.us/dpwes) under Publications (Letters to Industry) in the near future.

Although the requests may be included in the plan submission, requests will continue to be reviewed on a case-by-case basis and the Director of the Office of Site Development Services may disallow the use of an innovative BMP where its use is clearly inappropriate. For innovative BMPs not listed in this *Letter to Industry*, a separate letter of request with detailed information on the effectiveness of the facility and other information as required by the Public Facilities Manual will continue to be required. Also, you may continue to submit separate letters of request for approval of innovative BMPs on the list if you require approval prior to plan submission. It is intended that the list of BMPs and design document will be updated periodically as new innovative BMPs are validated by staff and as experience indicates that the design guidelines need to be updated. As experience is gained with these innovative BMPs, they will be considered for inclusion in the PFM. This change in procedure is intended to facilitate the use of innovative BMPs and simplify the review process.

### BACKGROUND:

Innovative BMPs may be thought of as BMPs which have demonstrated pollutant removal capabilities, but which do not have generally accepted phosphorus removal efficiencies and/or design standards. There may also be questions regarding long term reliability, maintenance burden and costs, applicability in residential areas, and the familiarity of engineers and surveyors with design requirements for innovative BMPs. Innovative BMPs include new techniques as well as additional features incorporated into existing BMP designs to enhance pollutant removal. Manufactured BMPs are an example of innovative BMPs where there is limited research data supporting efficiencies. Bioretention is an example of an innovative BMP where design standards are still evolving. An aquatic bench is an example of an additional feature incorporated

into an existing BMP design to enhance pollutant removal. The procedure incorporated herein will facilitate the use of innovative BMPs and provide the flexibility to quickly add new BMPs and modify the design requirements and efficiency ratings as additional research data becomes available.

Requests to use innovative BMPs currently require a separate letter of request and are processed similarly to PFM modification and waiver requests, although no fee is required for a request to use an innovative BMP. The requests are straightforward if a particular type of innovative BMP has previously been approved for other similar sites and a phosphorus removal efficiency has been assigned by staff. Therefore, it is possible to prepare a list of innovative BMPs for which the County has previously evaluated the above factors and determined the general circumstances where use of the BMPs may be appropriate.

Typical conditions placed on approved innovative BMPs requests include: third party maintenance agreements, developer's escrow of funds for a 20-year maintenance cycle (particularly if HOA resources are limited), and advising prospective homeowners that they are responsible for maintenance.

The Virginia Department of Conservation and Recreation (DCR) has developed the *Virginia Stormwater Management (SWM) Handbook* to provide basic guidance for compliance with the Virginia Stormwater Management Regulations (4VAC3-20 et seq.). Chapter 3 (Minimum Standards) of the *Virginia SWM Handbook* provides the technical design requirements and specifications, and maintenance requirements for stormwater BMPs defined in the regulations. The information is fairly comprehensive and includes almost all currently used practices and available manufactured BMP systems. However, in the case of Manufactured BMPs, the *Virginia SWM Handbook* refers the designer directly to the manufacturers' literature. The information in the *Virginia SWM Handbook* is intended to be updated periodically through the issuance of Technical Bulletins. *The Virginia SWM Handbook* is available on the DCR web site ([www.dcr.state.va.us/sw/stormwat.htm](http://www.dcr.state.va.us/sw/stormwat.htm)).

#### PROCEDURE:

Requests for permission to use the innovative BMPs included in the attached list may be included in plan submissions. In order to facilitate the tracking of requests and evaluation of the performance of the facilities, a copy of a tracking form provided by the Director (copy attached) shall be filled out and attached to the cover of the plan.

Requests incorporated into plans shall include the following site-specific information:

- Justification<sup>1</sup>.
- Maintenance consideration and program (private maintenance will generally be required for innovative BMP facilities).
- Safety considerations.
- Aesthetic considerations.
- Location and interaction with populated areas.
- Pest control program, if required.
- Special construction details and specifications if needed

- Estimated construction cost<sup>2</sup>.
- Estimated 20-year maintenance cost<sup>2</sup>.

Notes: 1) Phosphorus removal efficiencies are provided in the attached *List of Innovative BMPs* and the *Guidelines for the Use of Innovative BMPs*. No further research data supporting these efficiencies is required for the listed BMPs.

2) Construction and maintenance costs shall be developed by the designer based on site-specific designs and maintenance schedules. (Part D) Chapter 6, Costs and Benefits of Storm Water BMPs, of the Environmental Protection Agency (EPA) publication *Preliminary Data Summary of Urban Storm Water Best Management Practices* available at [www.epa.gov/OST/stormwater](http://www.epa.gov/OST/stormwater) may be used to estimate construction and maintenance costs for planning purposes.

#### GENERAL DESIGN STANDARDS:

Innovative BMPs shall be designed in accordance with the guidelines contained in the Public Facilities Manual (PFM), the *Virginia SWM Handbook*, and the *Virginia Erosion and Soil (E&S) Control Handbook*. Whenever any provision of the PFM imposes a different standard than the *Virginia SWM Handbook* or the *Virginia E & S Control Handbook*, the PFM standard shall be followed. In this regard, your attention is specifically directed to the dam standards and maintenance provisions of the PFM which shall be adhered to for all designs.

The use of the term “should” is normally considered to be permissive and not mandatory. Where the *Virginia SWM Handbook* or the *Virginia E&S Control Handbook* uses the term “should” with respect to design parameters and features, these are to be considered mandatory unless otherwise indicated herein. This will optimize the chances of successfully implementing these innovative BMPs.

#### CONDITIONS:

The following conditions apply to all requests for Director approval to use innovative BMPs under the revised procedure:

- All innovative BMPs except for extended detention dry ponds with sediment traps are to be privately maintained.
- All special maintenance requirements listed in the design document, *Guidelines for the Use of Innovative BMPs in Fairfax County, Virginia*, are to be incorporated into the plan and appended to the County’s standard private detention agreement.
- Reports of maintenance inspections and activities as required by the agreement shall be provided to the Maintenance and Stormwater Management Division. This requirement shall be incorporated into the standard private detention agreement.
- For innovative BMPs located in residential areas that will be maintained by Homeowners Associations (HOAs), the developer shall transfer sufficient funds to the HOA prior to bond release to cover a 20 year maintenance cycle. These funds shall not be available for use until after bond release.

All Architects, Builders, Developers, Engineers, and Surveyors Practicing in Fairfax County  
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If you have any questions related to these revised procedures, please contact the Environmental and Facilities Review Division at 703-324-1720.

Sincerely,

***SIGNATURE ON ORIGINAL***

Michelle A. Brickner, Director  
Office of Site Development Services

Attachments

MB/jaf

cc: John Wesley White, Director, Department of Public Works and Environmental Services  
Zofia A. Zager, Director, Office of Building Code Services, DPWES

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## LIST OF INNOVATIVE BMPS

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<u>Minimum Std. VA SWM Handbook</u>	<u>BMP Type</u>	<u>Provisional Phosphorus Removal Efficiency</u>
3.06	Retention Basin III (Wet Pond with Sediment Forebay and Aquatic Bench)	65%
3.07	Extended Detention Dry Pond (with Sediment Trap)	45%
3.07	Enhanced Extended Detention Dry Pond (with Sediment Forebay and Shallow Marsh)	50%
3.09	Constructed Wetlands	30%
3.11	Bioretention Basin (Rain Garden)	
	(Capture and treatment volume equal to 0.5 inches of runoff from the impervious area.)	50%
	(Capture and treatment volume equal to 1.0 inches of runoff from the impervious area.)	65%
3.11A	Bioretention Filter (Rain Garden)	
	(Capture and treatment volume equal to 0.5 inches of runoff from the impervious area.)	50%
	(Capture and treatment volume equal to 1.0 inches of runoff from the impervious area.)	65%
3.13	Grassed Swale	15%
	Water Quality Swale	35%
3.14	Vegetated Filter Strip	10%
3.15	Manufactured BMP Systems	
	Hydrodynamic Structures (Stormceptor, Vortechs, Downstream Defender, BaySaver)	15%
	Filtering Structures (StormFilter, StormTreat System)	50%

## INNOVATIVE BMP TRACKING FORM

Request for permission to use an Innovative BMP  
PFM Section 6-0402.4 -- No fee required

Attach to Site or Subdivision Plan

Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Plan and Document Control – Herrity Building  
Office of Site Development Services  
Department of Public Works and Environmental Services  
12055 Government Center Parkway  
Fairfax, Virginia 22035-5503

PROJECT NAME \_\_\_\_\_ TAX MAP AND PARCEL # \_\_\_\_\_

APPLICANT/OWNER/DEVELOPER \_\_\_\_\_ PHONE: (\_\_\_\_) \_\_\_\_\_

ADDRESS \_\_\_\_\_

APPLICANT'S AGENT/ENGINEER \_\_\_\_\_ PHONE: (\_\_\_\_) \_\_\_\_\_

ADDRESS \_\_\_\_\_

Innovative BMP type:

- 3.06 Retention Basin III (Wet Pond with Sediment Forebay and Aquatic Bench)
- 3.07 Extended Detention Dry Pond (with Sediment Trap)
- 3.07 Enhanced Extended Detention Dry Pond (with Sediment Forebay and Shallow Marsh)
- 3.09 Constructed Wetlands
- 3.11 Bioretention Basin (Rain Garden)
- 3.11A Bioretention Filter (Rain Garden)
- 3.13 Grassed Swale/Water Quality Swale
- 3.14 Vegetated Filter Strip
- 3.15 Manufactured BMP Systems

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| Hydrodynamic Structures                      | Filtering Structures                       |
| <input type="checkbox"/> Bay Saver           | <input type="checkbox"/> StormFilter       |
| <input type="checkbox"/> Downstream Defender | <input type="checkbox"/> StormTreat System |
| <input type="checkbox"/> Stormceptor         |  |
| <input type="checkbox"/> Vortechs            |  |

Construction Cost \_\_\_\_\_ Maintenance Cost (20-year cycle) \_\_\_\_\_