



Clark County 2015 Stormwater Manual Implementation Summary of Procedure

This procedure statement documents discussions and decisions from Community Development, Public Works and Prosecuting Attorney's office. Implementation of new stormwater regulations require staff to work through specific details of the regulations with applicants. The purpose is to ensure consistent application of county requirements. These procedure statements document decisions for future reference and will be kept on the [ClarkNet web page](#) (Public Works Clean Water).

Procedure statement #2015-011 – February 3, 2017

Emerging Technology Approval – PhosphoSorb™ BMP for basic treatment and phosphorus treatment.

See attached staff report for approved documentation.

CLARK COUNTY STAFF REPORT

DEPARTMENT: Public Works / Clean Water Division

DATE: January 5, 2017

REQUESTED ACTION: Approve adding the Stormwater Management StormFilter® - PhosphoSorb® best management practice (BMP) to the list of emerging technology stormwater treatment BMPs accepted in Book 1, Chapter 3.4.6 of the Clark County Stormwater Manual with the use restrictions listed herein.

___ Consent ___ Hearing X County Manager

PUBLIC WORKS GOALS:

- Provide safe and efficient transportation systems in Clark County
- Create and maintain a vibrant system of parks, trails and green spaces
- Continue responsible stewardship of public funds
- Promote family-wage job creation and economic development to support a thriving community
- Maintain a healthy, desirable quality of life
- Increase partnerships and foster an engaged, informed community
- Cultivate a nimble, responsive work force
- Make Public Works a great place to work

BACKGROUND

Section 3.4.7.2 of the Clark County Stormwater Manual (Book 1, page 140) allows for the Responsible Official to include the use of emerging technology Best Management Practices (BMPs) in Clark County that are not currently listed in the Clark County Stormwater Manual. The Department of Public Works designed a process to review petitions to include emerging technology BMPs. The process calls for an Emerging Technology BMP review team to evaluate each petitioned emerging technology BMP and make its recommendations to the Responsible Official of Clark County on acceptance and any restrictions on its use.

The Emerging Technology BMP review team includes:

Public Works Clean Water Division:	Rod Swanson, Jeff Schnabel, and Chad Hoxeng
Public Works Road Operations Division:	Scott Wilson and Brandon Pilot
Public Works Design Section:	Ken Lader
Public Works Development Engineering Division:	Ali Safayi

The Emerging Technology BMP review team assesses the following criteria to determine the approval and allowable uses for the emerging technology BMP:

- Equivalence with the most current Stormwater Management Manual for Western Washington – Washington State Department of Ecology approval level
- Cost of maintenance
- Ease of access
- Worker safety
- Long-term serviceability
- Sole source availability

Clark County received a petition from Sean Darcy at Contech Engineered Solutions, LLC for the Stormwater Management StormFilter® - PhosphoSorb® emerging technology BMP. The Stormwater Management StormFilter system is typically a concrete structure (precast vault, manhole, or cast in place structure) containing one or more PhosphoSorb media cartridges. The concrete structure contains the inlet and outlet. The cartridges are connected to a pipe manifold, which is connected to the outlet. An overflow outlet is provided for flows in excess of cartridge capacity.

The Stormwater Management StormFilter - PhosphoSorb is a stormwater treatment BMP developed by Contech Engineered Solutions Technologies, LLC and has been evaluated with approved protocols and requirements of the Washington State Department of Ecology (Ecology) Technology Assessment Protocol (TAPE). The Stormwater Management StormFilter - PhosphoSorb Ecology General Use Level Designation (GULD) is for Basic Treatment (total suspended solids) and phosphorus treatment.

The Emerging Technology BMP review team assessed the following Clark County Stormwater Manual approval criteria to determine if the Stormwater Management StormFilter - with PhosphoSorb media should be included as an acceptable emerging technology.

Equivalence with the most current *Stormwater Management Manual for Western Washington* – Washington State Department of Ecology approval level:

- Ecology awarded a GULD for basic (total suspended solids) and phosphorus treatment for the StormFilter with PhosphoSorb media.

Cost of maintenance – *information describing the nature and frequency of maintenance actions and materials costs to predict maintenance costs, knowledge to maintain BMP, and capital costs for maintenance equipment:*

- The StormFilter has a long established history in Clark County. Routine inspection with PhosphoSorb media is no different than StormFilter installations throughout Clark County.
- There are no changes to the maintenance inspection and defects table included in the Clark County Stormwater Manual (Book 4) or Clark County's Maintenance Management System (MMS) database.
- StormFilter cartridges are designed to have a minimum maintenance cycle of annually. Clark County systems typically change cartridges every 2 years.
- Small systems with 1 to 4 cartridges take approximately 30 minutes for full service. Systems that have less than 50 cartridges can take 4 to 6 hours to fully service.
- StormFilter replacement cartridge costs vary depending upon cartridge media, cartridge height, and number of cartridges purchased. An 18-inch cartridge has an approximate replacement cost up to \$140. Empty cartridges (basket, hood, top cap, center tube, float) will have to be returned to manufacturer for re-use.
- Capital costs are moderate, and operations and maintenance are low to moderate.
- A vactor truck is not required but recommended. Standard mobilization costs are \$500 + \$250/hr operator cost. Typical tipping fees range from \$40 to \$80 per ton for a dewatered load, if disposal is not included in the contractual agreement.

Ease of access – *degree of need for confined space entry. Equipment required to perform maintenance:*

- Confined space entry is required for maintenance.
- Maintenance involves a crew of 2-4 personnel. A vactor truck is not required but recommended.
- Several specialized tools are available (but not required) from Contech or an independent local supplier (Lifting Hook, Filter Cap Remover, Hood Remover, etc.).
- All replacement components and tools are locally sourced in both Vancouver and Portland.

Worker safety – *the BMP’s typical location (e.g. street, tract, etc.), weights of components or materials to be lifted, and confined space concerns:*

- Manufacturer recommends that the system has an unconstrained path to allow access for a tractor truck.
- Manufacturer recommends dumping media on the vault floor or to vacuum media directly from cartridge. Individual cartridge components (hood, basket, center tube, float) weigh less than 10 lbs.
- Alternatively, a lifting hook can assist with raising the exhausted cartridge. At the time of replacement, StormFilter with PhosphoSorb media cartridges may weigh between 40 to 80 pounds, depending on cartridge height, loading, etc.

Long-term serviceability – *demonstrated track record of the manufacturer. Ramifications if the manufacturer goes out of business. The use of the BMP regionally or nationally:*

- The StormFilter product is a locally manufactured product and has a proven track record in Clark County. For 20 years, the StormFilter has been installed in Clark County.
- There are 16 Certified Maintenance Providers currently available for the Clark County area for inspection and maintenance.
- The manufacturer has local staff available for trainings and/or onsite consultation.
- Local businesses are available to continue supply in the unlikely event that the manufacturer goes out of business.

Sole source availability – *replacement parts and media are available from more than one source:*

- Replacement cartridge components and replacement media are available for purchase from Contech Engineered Solutions, LLC or a Certified Maintenance Service Provider.

COUNCIL POLICY IMPLICATIONS

This action does not propose change in policy, a refinement of existing policy, confirmation or renewal of existing policy, or new policy. This action does not require a change to county code, levy a tax, change a budget, establish compensation, involve a comprehensive or development plan, set collective bargaining parameters, or involve a committee appointment.

ADMINISTRATIVE POLICY IMPLICATIONS

The Emerging Technology BMP review team recommends approval of adding the Stormwater Management StormFilter with PhosphoSorb stormwater media as a treatment BMP to the list of emerging technology stormwater treatment BMPs accepted in Book 1, Chapter 3.4.6 of the Clark County Stormwater Manual, for use in Clark County with the following restrictions:

- The Stormwater Management StormFilter with PhosphoSorb media shall be sized at a hydraulic loading rate of no greater than 1.67 gallons per minute per square foot of media surface as stated in Ecology’s General Use Level Designation dated November 2015.
- Manhole lid types are not allowed. All below-ground Stormwater Management StormFilter manholes and vaults must have hatches for inspection and maintenance accessibility.

COMMUNITY OUTREACH

The staff report approval will be added to the Clark County Stormwater Code and Manual web page and an update sent to manual stakeholders.

BUDGET IMPLICATIONS

YES	NO	
X		Action falls within existing budget capacity.
	X	Action falls within existing budget capacity but requires a change of purpose within existing appropriation
	X	Additional budget capacity is necessary and will be requested at the next supplemental. If YES, please complete the budget impact statement. If YES, this action will be referred to the county council with a recommendation from the county manager.

BUDGET DETAILS

Local Fund Dollar Amount	n/a
Grant Fund Dollar Amount	n/a
Account	n/a
Company Name	n/a

DISTRIBUTION:

County staff will post all Emerging Technology BMP review staff reports to Clean Water Division Stormwater Code and Manual webpage under "Acceptable Emerging Technology Best Management Practices (BMPs)." <https://www.clark.wa.gov/public-works/stormwater-code-and-manual>



Dean Boening
Clean Water Division Manager



Heath H. Henderson, PE
Public Works Director/County Engineer

APPROVED: _____
CLARK COUNTY, WASHINGTON
BOARD OF COUNTY COUNCILORS

DATE: _____

SR# _____

APPROVED: 
Mark McCauley, County Manager

DATE: 1/9/17

Exhibit A – Submittal Attachments:

1. **001 StormFilter PhosphoSorb Technical Evaluation Report_100915 public.PDF**
This document describes the design of the study conducted to determine the effectiveness of Stormwater Management StormFilter® - with PhosphoSorb® media.
2. **002 Appendix G- Lab Reports- all events, screening parameters and duplicates.pdf**
This document describes the laboratory analyses for influent and effluent storm water.
3. **003 DOE GULD STORMFILTERphosphosorbCONTECH.pdf**
GULD approval from Ecology dated November 2015.
4. **004 StormFilter PhosphoSorb Operation and Maintenance.pdf**
Media Cartridge Filters Operation and Maintenance table from the 2015 Clark County Stormwater Manual.