Controlling Run-off from New Development and Redevelopment – MCM #5

Part II.C.7.e

Responsible Person(s):

Identify the responsible person(s) for implementing this MCM. There may be more than one person or department responsible for various portions of this control measure. If so, discuss.

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19.b.	Title:	Stormwater Specialist
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19.a.	Name:	Gayle Fratto
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19.g. Is another entity sharing responsibility for this MCM? If so, who?
No, Environmental Health and Safety will oversee the overall implementation of the Controlling Runoff from New Development and Redevelopment Program.

Tip: This MCM will likely have more than one department responsible for implementation. Often planning, zoning, building, public works; sewer boards, and stormwater managers are involved in the new development and re-development program. Explain who deals with each component of this MCM.

Control Objectives and BMPs

19.h. State your overall objective for this MCM.
Continue to implement an ongoing program to reduce pollutants and decrease the volume of stormwater runoff for new development and redevelopment activities.

MCM Components

Watershed Protection Elements
Part II.C.7.e.7
19.i. Have you incorporated the six watershed protection elements into your subdivision ordinance or equivalent document? Name the document(s) where each element is found and give the review date for the document. * If there is no review, describe how you will incorporate the element into your document(s).

Partially, as a non-municipal MS4, WVU's Planning Documents are the alternative to a Subdivision Ordinance. Table 5.1 describes the six watershed protection elements and how they are related to the BMPs.

Planning Documents
WVU maintains a series of documents to guide the growth of programs and facilities on campus. These planning documents include, but are not limited to:

- 2020 Strategic Plan for the Future
- Ten-Year Master Plan
- Agriculture Conservation Plans
- Transportation and Parking Plan
- Parking Facilities Master Plans
- PRT Facilities Master Plan

The majority of WVU's planning documents currently have few references to stormwater management. However, through the previous permit cycle WVU has promoted stormwater management concepts to specialized departments across campus. Therefore, as WVU continues to grow it will it will apply the Watershed Protection Elements where applicable and focus on stormwater management techniques in Table 5.2.

Design Standards
WVU's Design Guidelines and Construction Standards, offers guidelines to contractors performing work at WVU campuses. There are several sections that are pertinent to stormwater management, but are not limited to: Building Demolition, Earthwork, Exterior Improvements, and Utilities.

WVU will review the Design Guidelines and Construction Standards or any other applicable documents and add specific water quality and quantity criteria that will assist site designers and contractors in reducing the impacts of new development and redevelopment on water resources.

Planning Efforts
Over the past four years throughout the first permit cycle WVU has incorporated the 1 inch treatment of runoff from new impervious surfaces or parking lot modifications with impervious surfaces 3,000SF or greater. WVU will continue to incorporate new LID techniques to help implement the Watershed Protection Elements wherever applicable.

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19.j. List your quantifiable objectives for each watershed protection element, including time frames to achieve them.

Table 5.1. Watershed Protection Elements

Watershed Protection Element	Short term quantitative objectives (through July 2016)	Long term quantitative objectives (through July 2018)
1. Minimizing impervious surfaces	Continue to implement and update design guidelines as detailed in (BMP 5-3).	Document impervious cover reductions through the redevelopment process.
2. Preserving ecologically sensitive areas	Continue to implement and update design guidelines that buffer ecologically sensitive areas from new construction and redevelopment (BMP 5-3).	Document new buffers through the redevelopment process.
3. Reducing thermal impacts	Continue to implement design guidelines as detailed in (BMP 5-3).	Document new green infrastructure network across campus.
4. Reducing or avoiding hydromodification	Continue to implement design guidelines as detailed in (BMP 5-3).	Continue using green infrastructure.
5. Tree protection	Continue protection of trees during construction, and replacement of trees removed during construction (BMP 5-3).	Promote adding more canopy trees and more street trees on campus.
6. Protection of native soils, prevention of compaction of soils	Revise design guidelines to establish minimum standards for topsoil replacement after construction (BMP 4-1).	Promote a Plan of Action to consider naturalizing turf grass areas on campus to increase groundwater infiltration.

19.k. State and describe your BMPs. Indicate if any BMPs are part of your existing program. Each BMP was part of the existing program. Each BMPs has redefined milestones and measureable goals to better achieve implementation. Table 5.2 describes the actions WVU will carry out to implement its Post-Construction Stormwater Management Program.

Table 5.2 Post-Construction Stormwater Management BMPs.

ID #	BMP (section references point to §Part II.C.7.e of the General Permit)	Measurable Goals and Milestones	Months After SWMP Approval
5-1	**Plan of Action**. Implement and update procedures for Post-Construction Stormwater Management plan review, site inspection, for all projects on property owned or leased by WVU.	Implement a process for projects from initial concept through completion to include, but not limited to: pre-construction meetings, BMP selection, inter-departmental planning, site plan review and approval, and post-construction verification. *Milestone - Define WVU's Plan of Action for Post-Construction Stormwater Management procedures for projects disturbing less than one acre.* *Milestone – Compile stakeholder input and begin updating the Post-Construction Stormwater Management Plan of Action.*	12 8 6
5-2	**Design Guidelines**. Implement design guidelines and construction standards for new development and redevelopment	Require treatment and control of the first inch of runoff from the 24-hour storm, preceded by 48 hours of no precipitation when public streets or parking lots are modified, constructed or reconstructed and from all new impervious surfaces greater than 3,000SF. Complete amendments to the Design Guidelines and Construction Standards. *Milestone – Review and amend the Design Guidelines and Construction Standards to incorporate the Watershed Protection Elements*	6 Annually Annually
5-3	**Hot Spots**. Minimize the potential for new Hot Spots to discharge pollutants to the MS4 or surface waters.	Update Design Guidelines and Construction Standards that require water quality treatment or an appropriate BMP prior to discharging stormwater runoff from a potential hotspot. *Milestone - Update list of potential hotspots located on campus. (BMP 3-5)* Determine any potential impacts from the identified hot spots and associated discharge points. (BMP 3-1)	18 12 12
5-4	**BMP Operation and Maintenance Programs.** Review and update operations and maintenance plans for structural BMPs on campus.	Review and update operation and maintenance program for structural BMP on campus.	24
5-5	**Tracking and Inspections**. Establish a BMP tracking and inspection program	Continuing using a database to track and store information on maintenance requirements, and inspection activities for each BMP. Inspect all BMPs by the end of the permit cycle. *Milestone - Update BMP inspection procedures to gather information on BMP condition, inspection results, and maintenance activities.*	24 Expiration date 12
5-6	**Staff Training**. Train staff on Post Construction Stormwater Management concepts and Plan of Action (BMP 1-2).	Provide refresher training. *Milestone – Obtain and compile training materials to use for training staff about the IDDE Program.* *Milestone - Identify the staff and their roles participating in the Post-Construction Stormwater Management Program.* Update a schedule for providing initial and refresher training.	Annually 3 4 6
5-7	**Impervious Cover Inventory.** Revise the inventory of impervious surfaces at WVU's Morgantown area campuses.	Reassess streets and parking lots to create a prioritized list of impervious cover that could be removed or replaced with infiltration areas. *Milestone – Revise the inventory of all impervious cover on campus.*	Expiration date 36

Site Design Standards

Part II.C.7.e.11

19.l. Do you have an ordinance or other enforcement mechanism for the required site design standards? If not, what is your schedule of implementation? Include mid-term and full implementation dates for Ordinance review and enactment.

Yes, WVU's Design Guidelines and Construction Standards provide enforcement for site design standards for projects with greater than 3,000 sf of impervious cover. WVU standards also reference the Morgantown City Code for managing peak flow rates from a 2, 10, and 50 year 24-hr storm event. WVU will follow the milestones and measurable goals set forth in Table 5.2 above (BMP 5-2).

> Tip: The site design standards should include managing the 1st 1-inch of rainfall in a 24-hr storm following 48 hrs without rain.
> There are several practices that manage rainfall on site including: canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended infiltration, and evapotranspiration and any combination of these practices.

Part II.C.7.e.16.q

19.m. Does your Ordinance have provisions for reducing pollutant loadings for stormwater discharges from Hot Spots? If the project is a potential hot spot and cannot meet water quality treatment with on-site controls, are there provisions for proper disposal of stormwater discharges at a treatment/disposal facility?

Yes, as a non-municipal MS4, WVU is responsible for management of Hot Spot areas within the MS4 jurisdiction. This issue will be addressed with specialized BMPs list in Tables (3.1, 5.2, and 6.1), where Hot Spots or the equivalent will be identified and managed as applicable to prevent or reduce the potential for pollutants to impact local waterways.

Part II.C.7.e.15

19.n. Do you know where drinking water source protection areas are located within your MS4 watershed? Describe how this information will be kept confidential, and made available to WVDEP only when requested.

Yes, MUB (Morgantown area), Beckley Water Company (Beckley area) and, West Virginia American Water (Montgomery area) are the only drinking water producers within the MS4 jurisdiction. This information will only be provided upon verification of the requesting party.

> Tip: You may need to coordinate with your local Health Department about where additional discharge protections may be needed to comply with source water protection. Document any obstacles that you encounter in regards to this component.

Part II.C.7.e.13 and Part II.C.7.e.16.v

19.o. Describe your program for reducing impervious surfaces.

WVU will incorporate impervious cover reduction by implementation of Low Impact Development (LID) practices through BMP 5-2 and BMP 5-7.

19.p. If you choose mitigation/payment in lieu for those projects that cannot implement the one inch runoff reduction requirements, please provide a time frame for creating an inventory of appropriate mitigation projects, and your process to develop standards to value, evaluate, and track transactions. (Note: WVDEP has plans to create standard criteria and guidance material to assist MS4's in developing a mitigation and payment in lieu program. If your MS4 does not already have a mitigation or payment in lieu program – make a statement in the SWMP that you do not have one. If you want to use what WVDEP develops, then make a statement to that effect. If you are planning to develop your own mitigation and payment in lieu program, then your SWMP has to include a time frame for development of this program.)

As a non-municipal MS4, the creation of a payment in lieu program does not apply to WVU. However, to support an off-site mitigation program, WVU will conduct an inventory of areas on campus where new infiltration or retention areas could be installed (BMP 5-2 and BMP 5-7). By developing this inventory, WVU may find logical areas on campus to create stormwater infiltration BMPs that could be used to offset detention and infiltration requirements from other construction projects across campus. This form of off-site mitigation could be more cost effective for WVU than installing retention BMPs at each development or redevelopment site. Further, by taking a comprehensive view, WVU can create a campus-wide stormwater management plan.

Part II.C.7.e.16.m

19.q. Describe the planning process for new development and redevelopment projects in your MS4.

WVU is a state entity and is therefore exempt from some local land use ordinances. Therefore, the zoning and subdivision ordinances that apply to other landowners in the Morgantown area do not apply to WVU. However, in relation to stormwater management, WVU is under the jurisdiction of WVDEP construction and post-construction stormwater management permits. Internally, two offices within WVU's office of Administration and Finance manage the planning process for land development projects: 1. Facilities Planning, 2. Design and Construction.

The Facilities Planning office staffs the University Planning Committee, a group of WVU officials appointed by the Board of Governors. The University Planning Committee creates major land development projects while approving conceptual designs and budgets for each projects.

After funding has been approved, the project is relayed to Design and Construction where a project manager is assigned the overall development and construction.

Part II.C.7.e.16.m

19.r. Describe your plan review and approval process for new development and redevelopment projects.

Once the University Planning Committee approves conceptual projects and budgets the Design and Construction division takes the project to the next phase, site layout and architectural. Design and Construction coordinates the interdepartmental review process to project completion (BMP 5-1). The review process includes working with the department that will use the new facility to ensure their educational and operational needs are met. Design and Construction also seeks input from other departments across campus, to ensure their specific standards are addressed for design, operation and maintenance.

Tip: Plan review, approval and enforcement processes include:

a. Procedures for review and approval of a pre-application concept plan
b. Procedures for site plan review and approval
c. Submittal of as-built drawings
d. Post construction verification
e. An educational program targeting internal staff and external project proponents about the stormwater management requirements.

Part II.C.7.e.16.n

19.s. Describe your maintenance procedures for structural stormwater control practices including a detailed discussion about maintenance agreements and your ability to enforce them.

Within WVU, the Roads and Grounds division of Facilities Management maintains most structural stormwater control practices on campus. Current maintenance practices vary depending on age of the structure, public visibility, and location. WVU operates stormwater control practices such as, but not limited to catch basins, detention basins, bioretention cells/swales, rain gardens, green roofs, underground detention systems. Because WVU staff manage all stormwater BMPs on WVU property, all enforcement activities are performed internally. WVU will keep accurate records of BMP maintenance and activities.

Part II.C.7.e.16.r

19.t. Describe your method of inventory and tracking of stormwater control practices for this MCM.

See SRA §15.p, WVU will continually update all review map(s) annually to ensure new structures are added (BMP 3-1). WVU will implement (BMP 5-4 and BMP 5-5) in Table 5.2.

Tip: The tracking system should accommodate: Source control practices, treatment practices, GIS locations, digital photographs, maintenance requirements, and inspection data.

Part II.C.7.e.16.s

19.u. Describe your inspection protocol for ensuring stormwater control BMPs/practices function as designed and constructed: How many per year? How often?

WVU will update an ongoing inspection protocol and calendar so that each structural BMP is inspected by the expiration date of this permit (BMP 5-4 and BMP 5-5). BMP inspection reports will include facility type, inspection date, name of inspector, location, description of BMP condition, photo documentation, and maintenance needs. WVU will inspect 25% of its permanent stormwater BMPs per year.

Part II.C.7.e.16.v

19.v. Does your MS4 have requirements for street design, parking, and parking lots? If so, which departments regulate this?

Design and Construction establishes standards for parking and parking lot design in the Design Guidelines and Construction Standards (DGCS §321216). Two other departments, Transportation and Parking and Facilities Planning, add input on parking and parking lot design (BMP 5-2).

Schedule

Part II.C.7.e

19.w. Describe how and when you will implement each component of this minimum control measure. Include mid-point and full implementation dates for Ordinance revisions, implementation of plan review and approval, inspection and enforcement procedures, and for developing/acquiring and using a tracking system.

See Table 5.2

Measurable Goals

Part II.C.7.e

19.x. List and describe your measurable goals for this MCM.

See Table 5.2

Tracking

Part II.B.7

See SRA §15.p, BMP 5-4, and BMP 5-5.

Evaluation

Part II.B.7

19.y. Describe how you plan to gauge the effectiveness of your program for this MCM.

WVU will evaluate the location and performance of BMPs installed and compare results to the TMDL sections of SRA §14.