

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

Part II.C.b.5

**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.

- 19.a. Name: Karen E. Kirtley [Ron May]  
 19.b. Title: Assistant Vice President for Administration  
 [Director of Facilities, Planning and Management]  
 19.c. Department: Administration  
 19.d. Address: One John Marshall Drive. Huntington, West Virginia 25755-5320  
 19.e. Phone number: (304) 696-3328 [(304) 696-2585]  
 19.f. Email address: kirtley@marshall.edu [mayr@marshall.edu]

- 19.g. Is another entity sharing responsibility for this MCM? If so, who? No

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 & BMPs**

- 19.h. State your overall objective for this MCM.
- a. Marshall University will develop and implement a program to evaluate new development and redevelopment projects for projects disturbing 1 acre or greater to minimize impacts to stormwater.
  - b. Marshall University will attempt to reduce the amount of new impervious surfaces in future projects.
  - c. Marshall University will use non-structural BMPs (i.e., minimization of disturbance and imperviousness, and maximization of open space) and structural BMPs (i.e., catch basins, trenches, grass swales, etc.) where applicable.
  - d. Marshall University will continue communicating with the Huntington Sanitary Board regarding the discharge of stormwater at Huntington's combined sewer lines.
  - e. Marshall University will attempt to manage the first one inch of rainfall on site when able. Marshall University will contact the WVDEP for further discussions when this cannot be achieved.

## MCM Components

### *Watershed Protection Elements*

Part II.C.b.5.ai.

- 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 & give the review date for the document. \* If there is no review, describe how you will incorporate the element into your document(s).

As a newly permitted MS4, Marshall must begin implementation of this MCM within two years of SWMP approval. Implementation includes the process of incorporating the six watershed protection elements into Marshall's planning documents. During the design phase the six watershed protection elements will be placed in the scope of work to attempt to address the issues. If unachievable Marshall University will contact the WVDEP for further discussions.

Watershed Protection Elements	Name of document that contains the element	*Review Date
1. Minimizing impervious surfaces		
2. Preserving ecologically sensitive areas		
3. Reducing thermal impacts		
4. Reducing or avoiding hydromodification		
5. Tree protection		
6. Protection of native soils, prevention of compaction of soils		

## Part II.C.b.5.a.i.B

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

Watershed Protection Element	Short term quantitative objectives (through July 2013)	Long term quantitative objectives (through July 2015)
1. Minimizing impervious surfaces	Develop design guidelines that require new development to attempt to manage on site the first one inch of rainfall from a 24-hour storm preceded by 48 hours of no precipitation.	Establish a Plan of Action to consider impervious cover reduction through the redevelopment process.
2. Preserving ecologically sensitive areas	Develop design guidelines that buffer ecologically sensitive areas from new construction and redevelopment.	Establish a Plan of Action to consider creating new buffers through the redevelopment process.
3. Reducing thermal impacts	<p>Develop design guidelines that minimized minimize the area of connected impervious cover flowing to the MS4</p> <p>Develop design standards that establish a minimum standard for green infrastructure components in new construction and redevelopment.</p>	Establish a Plan of Action to consider using the development and redevelopment process to expand the green infrastructure network on campus
4. Reducing or avoiding hydromodification	Develop design guidelines that minimize hydromodification occurring through the development and redevelopment process.	Establish a Plan of Action to consider reconstruction of culverts and channels on campus through the development and redevelopment process.
5. Tree protection	<p>Develop design guidelines that require tree protection during construction, including construction site inspection and enforcement strategies.</p> <p>Develop design guidelines that require replacement of trees removed during construction.</p>	Establish a Plan of Action to consider adding more canopy trees on campus.
6. Protection of native soils, prevention of compaction of soils	<p>Develop design guidelines to minimize the limit of disturbance on construction sites.</p> <p>Develop design guidelines to establish minimum standards for topsoil replacement after construction.</p>	<p>Enforce limits of disturbance on all construction sites.</p> <p>Establish a Plan of Action to consider naturalizing turf grass areas on campus to increase groundwater infiltration.</p>

- 19.k. State and describe your BMPs. Indicate if any BMPs are part of your existing program.
- a. Add post-construction stormwater management concepts and projects in planning documents
  - b. Develop a Plan of Action to define authority and procedures for Post-Construction Stormwater Management plan review, site inspections, and enforcement for all projects disturbing one acre or greater.
  - c. Develop design guidelines and construction standards for new development and redevelopment, including the requirement to develop maintenance plans for new BMP's.
  - d. Minimize the potential for new spots to discharge pollutants to the MS4 or surface waters.
  - e. Train staff on Post Construction Stormwater management concepts and Plan of Action
  - f. Develop an inventory of existing impervious surfaces at Marshall's campus.

### *Site Design Standards*

Part II.C.b.5a.ii.A.1.

- 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.

As a newly-permitted MS4, the permit requires that Marshall begin implementation of a Post-Construction Stormwater Management Program that meets permit standards within four years of SWMP approval. Marshall will have a Plan of Action in place to meet this schedule following the Milestones listed below.

- a. Present stormwater management concepts to the University Planning Committee.
- b. Identify the timeframe for the updates needed for the planning documents.
- c. Consider staff input and begin drafting the Post-Construction Stormwater Management Plan of Action.
- d. Identify if there are current documents that pertain to the site planning and site design review process.
- e. Identify if there are current documents that pertain to the Post-Construction Stormwater Management.
- f. Begin drafting or consider amendments to existing documents to require the attempt to manage the first one inch of rainfall in a 24-hr storm, preceded by 48 hours of no precipitation from all new impervious surfaces greater than 3000sf.
- g. Begin drafting or consider amendments to existing documents to incorporate the six Watershed Protection Elements.
- h. Identify the staff and their roles participating in the Post-Construction Stormwater Management Program.
- i. Develop training programs for the different staff functions in the Post-Construction Stormwater Management Program.

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.b.5.ii.A.2.i.ii

- 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? No

## Part II.C.b.5.ii.A.2.iii

- 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.

There are no drinking water source protection areas within the Marshall University MS4 boundary.

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.

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

Marshall University will evaluate reducing and minimizing impervious surfaces on a project by project basis.

- 19.p. If you choose mitigation/payment in lieu for those projects that cannot implement the one inch runoff reduction requirement, 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 Marshall. However, to support an off-site mitigation program, Marshall will conduct an inventory of areas on campus where new infiltration and retention areas could be installed. By developing this inventory, Marshall 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.

## Part II.C.b.5.ii.B. (1)

- 19.q. Describe the planning process for new development and redevelopment projects in your MS4. Marshall will evaluate each project on a case by case basis and will present the plan to the WVDEP. See Item 19.p. above.

## Part II.C.b.5.ii.B (2)&amp;(3)

- 19.r. Describe your plan review and approval process for new development and redevelopment projects. Marshall will evaluate each project on a case by case basis.

- 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.b.5.ii.C

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

If Marshall constructs any retention structures, Marshall will maintain the structures.

Part II.C.b.5.ii.D

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

Marshall will place structural stormwater structures on the site map.

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

Part II.C.b.5.ii.E

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

Marshall will inspect structural stormwater controls on a quarterly basis as to performance.

Part II.C.b.5.b.

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

Marshall will develop design criteria for development projects on a case by case basis.

## **Schedule**

Part II.C.b.5

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.

Applicable components of the MCM will be implemented by July 2013 and will be fully implemented by July 2015.

## **Measurable Goals**

Part IV.A

- 19.x. List and describe your measurable goals for this MCM.
- a. Incorporate low impact design practices where feasible considering space utilization, cost, and function.

## **Evaluation**

Part II.B.7

- 19.y. Describe how you plan to gauge the effectiveness of your program for this MCM.  
Marshall will gauge the effectiveness of the program on a case by case basis.