

Appendix E.2 Region 9 Stormwater Best Management Practices Inventory

Results as of August 31, 2011

Policy or Practice	Berkeley County	Hedgesville	Martinsburg	Morgan County	Bath	Paw Paw	
A. Ordinances and Tracking							
A.1	We have or are in the process of developing a process to collect information and establish a GIS or other comprehensive mapping of water quality features and impacts such as: waterways, floodways, floodplains, land uses, changes in land use, soil type, impervious surface coverage, public wastewater treatment coverage, storm sewer system mapping, location and size of stormwater structural BMPs, etc. If yes, complete the inventory on Page 2.	Current GIS system has information on floodways, floodplains, streams, water bodies, public wastewater treatment coverage, and some SWM structural BMPs.		ongoing	No		
A.2	We have or are in the process of developing an ordinance that requires 1 inch or better capture rate of stormwater onsite with no discharge to surface waters for new development and redevelopment.	January 28, 2010		WITHIN NEXT 3 YEARS	We will be researching this for possible integration into our existing stormwater management regulations.		
A.3	We have or are in the process of developing an ordinance that requires the protection of streams by measures such as: requiring tree cover, regulating mowing along streams, requiring riparian buffers, prohibiting new septic systems in the 100-year floodplain, and/or requiring structures within the floodway to have rigorous pollution prevention controls.	Adopted 9/1/2009: Section 4.1 calls for no encroachments within floodway without details engineering analysis. Section 6H. Flood Protection Setback 1. A Flood Protection Setback equal to twice the width of the watercourse channel measuring from the top of one bank to the top of the opposite bank or 50 feet, whichever is less, shall be maintained from the top of the banks of all watercourses. To reduce erosion, natural vegetation shall be maintained in this area. Where natural vegetation does not exist along the watercourse and conditions for replanting are suitable, high priority shall be given to planting vegetation in the setback area to stabilize banks and enhance aquatic resources.		Section 1771.04: calls for no encroachments within floodway without details engineering analysis	Health Department restricts septic within 100-year floodplain. Floodplain Ordinance restricts development within 100-year and encourages replanting along streambanks.	Chapter 38: Floodplain Ordinance. May prohibit encroachments within floodway. Double Check	Health Department restricts septic within 100-year floodplain. Floodplain Ordinance restricts development within 100-year and encourages replanting along streambanks.
A.4	We have or are in the process of developing an ordinance that controls erosion and sediment at construction sites and minimizes water quality impacts.	January 28, 2010	a "Construction Agreement" found in the Building Process Packet requires a general erosion and sediment control practices (stabilized construction entrance, silt fence, etc)	ENACTED JANUARY 2011	1983 & 1996	Town of Bath Code Section 14-91 & Section 14-123	
A.5	We have or are in the process of developing an ordinance that requires new and replacement septic systems that have advanced nitrogen removal technology.	No		No	No		
A.6	We are tracking or are in the process of setting a system to track Best Management Practices (BMPs), especially Stormwater Management BMPs. If yes, complete the inventory on Page 2.	on going		N/A	No		
B. Public Education and Participation							
B.1	We have or are in the process of instituting a public education program that communicates and distributes information and materials about the impacts of stormwater discharges and the steps to reduce stormwater pollution through tools such as: brochures, websites, programs, events, and signage.	Already Completed		ONGOING SINCE JANUARY 2011	We are currently applying for grant funds to do a comparison of existing regulations and proposed EPA/DEP WIP requirements and research economic impact of these proposed regulations.		
B.2	We have or are in the process of instituting public involvement by holding public meetings and/or convening citizen panels on water quality and Bay issues.	Already Completed		PER CURRENT MS4 NPDES APPLICATION	We are currently applying for grant funds to do a comparison of existing regulations and proposed EPA/DEP WIP requirements and research economic impact of these proposed regulations. Three public forums are proposed as the educational portion of the project.		
B.3	We have or are in the process of instituting public involvement process through volunteer water quality monitoring.	November 7-8, 2008 Shepherd University Students and the Opequon Creek Project team participated in Water Quality Stream Monitoring Training on Mill Creek		PER CURRENT MS4 NPDES APPLICATION	Monitoring by Sleepy Creek Watershed Group		
B.4	We have or are in the process of instituting public involvement through community clean-up or adopt a waterway or storm drain programs.	Yes		ONGOING FOR SEVERAL YEARS	Local watershed groups plan clean-up events annually.	Free seasonal (spring and fall) yard debris pick up for Municipal Solid Waste customers.	
C. Land Use Planning, Capacity Building, and Incentives							
C.1	We have or are in the process of developing a planning document that anticipates location and size of growth for next five to ten years.	June 15, 2006		No	March, 2007 - Completed		
C.2	We have or are in the process of developing an ordinance that disables grandfathering of legacy platted subdivisions by requiring them to meet current and new local regulations.	No		No	No		
C.3	We have or are in the process of adding staff capacity to address Chesapeake Bay issues.	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator
C.4	We have or are developing a process and dedicating staff to provide technical assistance to homeowners and/or businesses.	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator
C.5	We have or are in the process of building local capacity (social infrastructure) for voluntary implementation in the form of watershed associations and Community Environmental Management.	Yes	Sponsors a "Spring Clean Up" day. April 16, 2011	No	Morgan County has three watershed groups in place.	Warm Springs Watershed group (one of the 3 in Morgan County) is within Town of Bath limits	
C.6	We have or are in the process of establishing a stormwater utility to facilitate a dedicated funding stream to address stormwater priorities such as maintenance and stormwater management retrofits.	The Berkeley County Council transferred ownership of the MS4 permit to the Berkeley County Public Service Sewer District. An Existing Utility department.		No	No		
C.7	We have or are in the process of inventorying and prioritizing the need for retrofitting of existing development for runoff reduction.	No		No	No		
C.8	We have or are in the process of providing incentives to retrofit existing developed areas with enhanced stormwater management.	No		No	No		
C.9	We have or are in the process of providing incentives to septic system owners to install advanced nitrogen removal technology.	No		No	No		
C.10	We have or are in the process of providing incentives for tree planting along waterways and/or to replace large lawns.	No		No	Floodplain Regulations encourage plantings along streambanks.	Floodplain Regulations encourage plantings along streambanks.	

LEGEND

Ordinance or policy is adopted that has the potential to result in quantifiable BMPs	Quantification of BMPs may be possible in future	Good practice that supports implementing quantifiable BMPs	Not Applicable (N/A) or not in process	BMPs are quantified, see Page 2
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Results as of August 31, 2011

Policy or Practice	Jefferson County	Bolivar	Charles Town	Harpers Ferry	Ranson	Shepherds-town
A. Ordinances and Tracking						
A.1 We have or are in the process of developing a process to collect information and establish a GIS or other comprehensive mapping of water quality features and impacts such as: waterways, floodways, floodplains, land uses, changes in land use, soil type, impervious surface coverage, public wastewater treatment coverage, storm sewer system mapping, location and size of stormwater structural BMPs, etc. If yes, complete the inventory on Page 2.	Current GIS system has information on floodways, floodplains, streams, water bodies, land uses (zoning districts), NRCS soils types; need to keep adding other information needed to better manage stormwater runoff pollution. Need Region 9 representative to establish information standards for the different GIS systems in Region 9		No		working on as time allows	
A.2 We have or are in the process of developing an ordinance that requires 1 inch or better capture rate of stormwater onsite with no discharge to surface waters for new development and redevelopment.	No	Ordinance under development	September, 2011	Ordinance under development	No	
A.3 We have or are in the process of developing an ordinance that requires the protection of streams by measures such as: requiring tree cover, regulating mowing along streams, requiring riparian buffers, prohibiting new septic systems in the 100-year floodplain, and/or requiring structures within the floodway to have rigorous pollution prevention controls.	all 5 municipalities and the county are currently reviewing draft Urban Tree canopy goals for adoption in the Fall 2011	Subdivision Regulations: Section 1325.07.P - Vegetation and Preservation "Stream buffers strongly encouraged"; Section 1325.07.R - Landscaping requirements "one tree every 60 feet is required along streets; Section 1325.07.S. 3.A. "all subdivisions shall be provided with a complete public sanitary sewer connections (**No on site systems permitted???)	September, 2011		5-172, calls for no encroachments within floodway without details engineering analysis	
A.4 We have or are in the process of developing an ordinance that controls erosion and sediment at construction sites and minimizes water quality impacts.	Existing Subdivision Ordinance requires Sediment & Erosion Control Plan for new residential and commercial/industrial land development. All building/demo permits have the following statement that must be signed by applicant: "All roadways and properties shall be protected from damage and the deposit of mud, dirt, silt, trash and debris, etc., resulting from the work covered by this permit application. The property owner shall be responsible for any resulting damage and clean up costs.	Section 1302 - "Clearing" defined as clearing or excavating of more than 10% of a lot requires a permit and proper sediment and erosion control practices. **note** clearing requirements are not limited to subdivision project. The zoning administrator conducts routine inspections during construction to ensure proper SEC practices are in place and performing properly.	September, 2011		Section 16-97 states: The building official shall neither issue a building permit nor release a certificate of Occupancy within a Subdivision with outstanding erosion and sediment control violations & Section 16-175	
A.5 We have or are in the process of developing an ordinance that requires new and replacement septic systems that have advanced nitrogen removal technology.	No		No		No	
A.6 We are tracking or are in the process of setting a system to track Best Management Practices (BMPs), especially Stormwater Management BMPs. If yes, complete the inventory on Page 2.	N/A		complete annual report as requested by WV DEP		complete annual report as requested by WV DEP	
B. Public Education and Participation						
B.1 We have or are in the process of instituting a public education program that communicates and distributes information and materials about the impacts of stormwater discharges and the steps to reduce stormwater pollution through tools such as: brochures, websites, programs, events, and signage.	No		No	Discusses growth within the 2007 Comprehensive Plan on pages 11-15. http://www.harpersferrywv.us/council/compplan.pdf	No	
B.2 We have or are in the process of instituting public involvement by holding public meetings and/or convening citizen panels on water quality and Bay issues.	as relates to the Urban Tree Canopy Plan		No		No	
B.3 We have or are in the process of instituting public involvement process through volunteer water quality monitoring.	working with students from Shepherd University to conduct water quality monitoring over the last few years		No		No	
B.4 We have or are in the process of instituting public involvement through community clean-up or adopt a waterway or storm drain programs.	No		No		No	
C. Land Use Planning, Capacity Building, and Incentives						
C.1 We have or are in the process of developing a planning document that anticipates location and size of growth for next five to ten years.	2004 County Comprehensive Plan without detailed land use mapping		Comp Plan adopted 2006 and updated 2010	Discusses growth within the 2007 Comprehensive Plan on pages 11-15. http://www.harpersferrywv.us/council/compplan.pdf	Yes - 2004	
C.2 We have or are in the process of developing an ordinance that disables grandfathering of legacy platted subdivisions by requiring them to meet current and new local regulations.	No		No		No	
C.3 We have or are in the process of adding staff capacity to address Chesapeake Bay issues.	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator
C.4 We have or are developing a process and dedicating staff to provide technical assistance to homeowners and/or businesses.	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator	Region 9 Chesapeake Bay Coordinator
C.5 We have or are in the process of building local capacity (social infrastructure) for voluntary implementation in the form of watershed associations and Community Environmental Management.	Yes		No		No	
C.6 We have or are in the process of establishing a stormwater utility to facilitate a dedicated funding stream to address stormwater priorities such as maintenance and stormwater management retrofits.	Talk to Jefferson County PSSD about future vision on this issue.		No		No	
C.7 We have or are in the process of inventorying and prioritizing the need for retrofitting of existing development for runoff reduction.	No		No		No	
C.8 We have or are in the process of providing incentives to retrofit existing developed areas with enhanced stormwater management.	No		No		No	
C.9 We have or are in the process of providing incentives to septic system owners to install advanced nitrogen removal technology.	No		No		No	
C.10 We have or are in the process of providing incentives for tree planting along waterways and/or to replace large lawns.	Sec. 22.504.B Riparian Buffer Requirements (page 38)		No	"Encourage property owners of land within the steep sided stream valleys to donate tax deductible easements to the town, or a nonprofit organization, so as to eliminate future development and allow for pedestrian access." (2007 Comp Plan Pg.8) http://www.harpersferrywv.us/council/compplan.pdf	16-176, discusses preservation of existing trees	

LEGEND

Ordinance or policy is adopted that has the potential to result in quantifiable BMPs	Quantification of BMPs may be possible in future	Good practice that supports implementing quantifiable BMPs	Not Applicable (N/A) or not in process	BMPs are quantified, see Page 2
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Appendix E.2 Region 9 Stormwater Best Management Practices Inventory

Results as of August 31, 2011

Policy or Practice	*Already Installed						Reduction Efficiency (per Scenario Builder)			
	Region 9: Total	Berkeley County	Martins-burg	Jefferson County	Charles Town	Ranson	Morgan County	TN	TP	SED
D. BMP Implementation										
D.1 Forest Buffers along waterways (linear feet)	1,893	273		1,600			20	25%	50%	50%
D.2 Wet Ponds and Wetlands (acreage managed by BMP)	8,629	6,179		2,435			16	20%	45%	60%
D.3 Dry Detention Ponds and Hydrodynamic Structures	-	-		-			-	5%	10%	10%
D.4 Dry Extended Detention Ponds	32,806	21,157		11,199			450	20%	20%	60%
D.5 Infiltration Practices w/o Sand, Vegetation	92	37		54			1	80%	85%	95%
D.6 Infiltration Practices w/ Sand, Vegetation	see D.5	see D.5		see D.5			see D.5	85%	85%	95%
D.7 Filtering Practices	600	426	APPROX 2 AC	174	2 acres		1	40%	60%	80%
D.8 Bioretention C/D soils, underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	25%	45%	55%
D.9 Bioretention A/B soils, underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	70%	75%	80%
D.10 Bioretention A/B soils, no underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	80%	85%	90%
D.11 Vegetated Open Channels C/D soils, no underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	10%	10%	50%
D.12 Vegetated Open Channels A/B soils, no underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	45%	45%	70%
D.13 Bioswales	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	70%	75%	80%
D.14 Permeable Pavement w/o Sand, Vegetation C/D soils, underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	10%	20%	55%
D.15 Permeable Pavement w/o Sand, Vegetation A/B soils, underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	45%	50%	70%
D.16 Permeable Pavement w/o Sand, Vegetation A/B soils, no underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	75%	80%	85%
D.17 Permeable Pavement w/ Sand, Vegetation C/D soils, underdrain	see D.5 or D.7	see D.5 or D.7	APPROX 1 AC	see D.5 or D.7			see D.5 or D.7	20%	20%	55%
D.18 Permeable Pavement w/ Sand, Vegetation A/B soils, underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	50%	50%	70%
D.19 Permeable Pavement w/ Sand, Vegetation A/B soils, no underdrain	see D.5 or D.7	see D.5 or D.7		see D.5 or D.7			see D.5 or D.7	80%	80%	85%
D.20 Urban Stream Restoration	263	263		-			-	0.02LB/FT	0.003LB/FT	2LB/FT
D.21 Erosion and Sediment Control	13,423	9,453		3,642			327	25%	40%	40%
D.22 Nutrient Management on municipally owned lands	2,688	1,425		908			355	17%	22%	N/A
D.23 Nutrient Management on institutional lands or golf courses	see D.22	see D.22		see D.22			see D.22	17%	22%	N/A
D.24 Nutrient Management on residential land								17%	22%	N/A
D.25 Septic Denitrification	0	0		0			0	50%	N/A	N/A

* Note: The interest is in inventorying BMPs that can be quantified. Please provide the collective acreage that is managed by the stormwater BMP.