

Response to Public Comments on Prince George's County Local TMDL Restoration Plans

Restoration Plan for the Anacostia River Watershed in Prince George's County

Restoration Plan for the Mattawoman Creek Watershed in Prince George's County

Restoration Plan for the Piscataway Creek Watershed in Prince George's County

Restoration Plan for the Upper Patuxent River and Rocky Gorge Reservoir Watersheds in Prince George's County

Restoration Plan for PCB-Impacted Water Bodies in Prince George's County

Prepared for:

Prince George's County, Maryland
Department of the Environment
Stormwater Management Division

Prepared by:

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December 30, 2014

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Introduction

On January 2, 2014 the Maryland Department of the Environment (MDE) issued Prince George's County (County) a new municipal separate storm sewer system (MS4) permit under the National Pollutant Discharge Elimination System (NPDES). The County's new MS4 permit requires that the County develop local watershed restoration plans to address each U.S. Environmental Protection Agency (EPA) approved total maximum daily load (TMDL) with stormwater wasteload allocations (WLA). Each stormwater WLA provides a numerical pollutant load limit that the water body of concern can receive from urban stormwater runoff and still meet its water quality standards.

The general public was notified of the progress on the plans via public meetings and the posting of information on the County website. In mid-July, 2014, two public meetings were held during the initial development phase of the restoration plans. They broadly presented the County's vision and method to develop the plans. The draft restoration plans were finalized by end of October 2014 and the plans were posted online for public review and comment. The public comment period for the plans was from November 1, 2014 to December 1, 2014. During this period, a third public meeting (November 12, 2014) was held to directly present the overall restoration strategy of the plans and to receive additional comments from the public.

Public comments were received during the meeting presentations and in writing during the comment period. The County has prepared responses to all comments received and, where required, has edited the plans to reflect the comment request. This document provides a summary of the November 12, 2014 public hearing, a copy of the hand-written comment obtained that night, and the subsequent public comments and responses from the County.

List of commenters during public comment period

Commenter	Title	Organization
Dan Smith	(Not provided.)	Comments from Anacostia Watershed Society
Diane Cameron	Conservation Program Director	Comments from Audubon Naturalist Society and Natural Resources Defense Council
Elaine Lutz	CBF Staff Attorney	Comments from Chesapeake Bay Foundation
Marian Dombroski	(Not provided.)	Comments from Friends of Quincy Run Watershed
Jim Long	President	Comments from Mattawoman Watershed Society
Phong Trieu	(Not provided.)	Comments from Metropolitan Washington Council of Governments
Rebecca Hammer	Staff Attorney, Water Program	Comments from Natural Resources Defense Council
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Public Hearing on Watershed Restoration in Prince George's County

November 12, 2014 • Largo, MD



Hearing Summary

Introduction

A public hearing was held November 12, 2014, from 6:30 p.m. to 8:30 p.m., at the office of the Prince George's County Department of the Environment at 1801 McCormick Drive (Suite 140) in Largo, Maryland, to collect comments on the County's draft local total maximum daily load (TMDL) restoration plans during the 30-day public comment period which began November 1, 2014. The plans are designed to meet permit requirements under the National Pollutant Discharge Elimination System (NPDES). Under the permit, the County must control pollutant discharges to the storm drain system using a multi-faceted approach, including developing and implementing restoration plans to address pollutant reduction goals established under approved TMDLs. Draft plans for five watersheds were presented at the hearing. Members of the public were invited to comment orally or in writing. The draft plans were posted online for public review at www.princegeorgescountymd.gov/sites/StormwaterManagement/Services/Streams-Watersheds/Restoration-Planning/Pages/default.aspx.

Presentation

Jerry Maldonado of Prince George's County Department of the Environment provided opening remarks, and then several staff from Tetra Tech, Inc. (the County's consultant) provided background and information on the restoration plans. A copy of the slide presentation shown at the hearing is provided as Appendix A.

Comments Received at the Hearing

One written comment was submitted via comment form at the hearing and is provided as Appendix B. In addition, several attendees provided oral comments. A summary of those comments and the responses given at the hearing are provided as Appendix C.

Attendees

Twenty-five members of the public (shown below) attended the hearing.

Name	Affiliation
Lori Baranoff	Anacostia Watershed Society
Bonnie Bick	Citizen
John Brown	Citizen
Cary Coppock	Citizen
Elizabeth Crittenden	Citizen
Steve Darcey	Citizen
Marian Dombroski	Citizen
Lunique Estime	Citizen
Jacqueline Goodall	Citizen



Public Hearing on Watershed Restoration in Prince George's County

November 12, 2014 • Largo, MD



Name	Affiliation
Terri Hruby	Citizen
Bruce Gilmore	Anacostia Watershed Society
James Graham	Citizen
Jim Long	Citizen
Chancee Lundy	Nspiregreen
Rebecca Hammer	Natural Resources Defense Council
Sarah Pomerantz	Citizen
Jon Robinson	Citizen
Matt Robinson	District Department of Environment
Matt T. Salo	Citizen
Sheila Salo	Citizen
Dan Smith	Anacostia Watershed Society
Timothy X. Toohey	Citizen
Phong Trieu	Metropolitan Washington Council of Governments
Bill Walmsley	Citizen
Christopher Williams	Citizen



Public Hearing on Watershed Restoration in Prince George's County

November 12, 2014 • Largo, MD



Appendix A: Slide Presentation

Welcome to your
DEPARTMENT OF THE ENVIRONMENT
 Watershed Restoration in Prince George's County
 November 12, 2014

DEPARTMENT OF THE ENVIRONMENT

Prince George's County,
 Maryland

Welcome
 from
Jerry Maldonado

DEPARTMENT OF THE ENVIRONMENT

Purpose of Hearing

- Review why watershed restoration plans are needed in Prince George's County.
- Inform the public of contents of the draft watershed restoration plans.
- Answer questions and collect comments on the draft plans.

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Speakers

- Melissa DeSantis, Environmental Scientist, Tetra Tech
- Mark Sievers, Environmental Engineer, Tetra Tech
- Sam Stribling, Biologist/Monitoring and Assessment Specialist, Tetra Tech

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Technical Panel

- Jerry Maldonado, DoE
- Lilantha Tennekoon, DoE
- Mike Clar, Tetra Tech
- Mark Sievers, Tetra Tech
- Sam Stribling, Tetra Tech

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REGULATORY OVERVIEW

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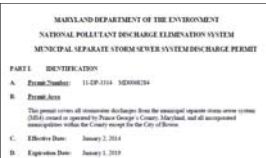
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Two Regulatory Drivers



Under the Clean Water Act

1. Municipal Separate Storm Sewer System (MS4) Permit
2. Total Maximum Daily Loads (TMDLs) = *Pollution Diet*



Water Quality Impairments



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What is an MS4?



Municipal Separate Storm Sewer System (MS4) = Conveyance system owned by a state, city, town, or other public entity that discharges to waters of the United States.



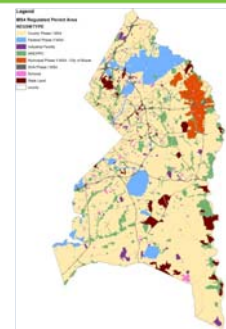
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County's MS4 Regulated Lands



Excluded Properties:

- Federal
- State
- SHA
- City of Bowie
- M-NCPPC
- Board of Education

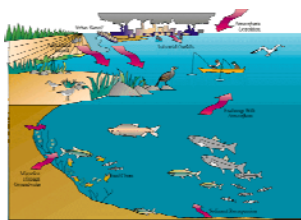


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Pollution Diet (TMDLs)



- Addresses a single pollutant or stressor.
- Allocations issued to natural, point, and nonpoint sources.



TMDLs can be viewed as a pollution diet.

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Watershed Mechanics



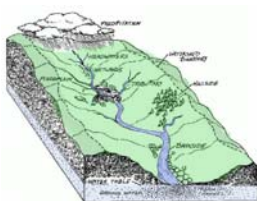
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What Is a Watershed?



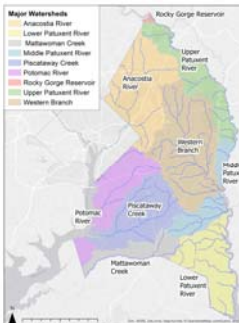
Watersheds are like sponges and drain like funnels . . .

- Land accumulates pollutants from urban, agricultural, and other areas.
- Whatever is on the land washes into the waterways directly or via storm drains.
- Appropriate land management practices can greatly reduce polluted runoff.



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County Watersheds



Five Restoration Plans

- Anacostia River
- Patuxent River Basin
- Mattawoman Creek
- Piscataway Creek
- PCB-Impacted Water Bodies

(PCB = polychlorinated biphenyl)

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Pollutant Types



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Pollutants and Sources



- Bacteria** from animal waste and sewer leaks and overflows
- Nutrients** and **Biochemical Oxygen Demand (BOD)** from sanitary waste, fertilizers, and organic material
- Sediment** from construction sites, bare soils, and eroding streambanks
- Trash** from littering
- Toxics** (polychlorinated biphenyls [PCBs]) from legacy contaminated sites
- ALL** can be contributed from urban stormwater

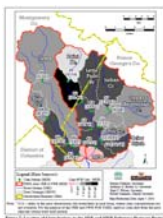


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Polychlorinated Biphenyls (PCBs)



- Group of similar chemicals
 - Do not readily break down in environment
 - Tend to bioaccumulate and be associated with sediment
 - Are carcinogenic
 - Are man made



Map Credit: MDE 2011

- Uses**
 - Electrical insulation
 - Cooling applications
 - Hydraulic fluids
 - Heat transfer fluid
 - Lubricants
 - PCB fluorescent light ballasts
 - Caulk
 - Paints
 - Power transformers
- Sources**
 - Contaminated upland soils/sites
 - Contaminated stream sediments
 - Facility point sources
 - Aerial deposition

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Pollution & Impairment Limits



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What Is a Pollution Diet/TMDL?

- TMDL = Total Maximum Daily Load (Pollution Diet)
- The maximum amount of a pollutant that a water body can assimilate and still meet water quality standards and designated uses.

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Maryland's TMDL Program

- Maryland Department of the Environment (MDE) is the state's regulatory agency for TMDLs.
- Maryland is required under the Clean Water Act to list impaired waters and to take action to restore them.
- Impaired waters are identified every two years.
- A two-part process is used for restoration:
 1. Establish and submit a TMDL to EPA.
 2. Once TMDL is approved, develop a restoration plan.

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Restoration Strategies

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How Will We Get There? Restoration Planning Steps

<p>Characterize Watershed</p> <ul style="list-style-type: none"> – Gather existing data – Inventory TMDLs – Create data inventory – Identify data gaps – Collect additional data, if needed – Analyze data 	<p>Design Restoration Program</p> <ul style="list-style-type: none"> – Develop restoration strategies – Develop restoration schedule and milestones – Develop monitoring component and evaluation process – Identify financial assistance needed 	<p>Implement Restoration Plan</p> <ul style="list-style-type: none"> – Implement management strategies – Conduct monitoring – Conduct outreach activities 	<p>Measure Progress and Make Adjustments (Adaptive Mgmt)</p> <ul style="list-style-type: none"> – Review and evaluate – Share results – Prepare annual plans – Make adjustments
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Draft Watershed Restoration Plans

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Elements of Restoration Plans

- Introduction
- Watershed Characterization
- Restoration Plan Goals and Objectives
- Current Management Activities
- Strategy Development
- Implementation Process Discussion
- Tracking and Adaptive Management
- Other Sections: References, Best Management Practices (BMP) Examples, Funding Opportunities

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County Goals



- Protect, restore, and enhance habitat for healthier ecosystems.
- Conduct restoration efforts with a balanced approach.
- Support compliance with regional, state, and federal regulatory requirements.
- Increase awareness and stewardship by the public and policymakers.
- Protect human health, safety, and property.
- Improve quality of life and recreational opportunities.



Curb cuts shunt runoff from roads and parking lots to pervious areas.

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County Objectives



- Protect land with critical habitat.
- Implement BMPs and programmatic initiatives.
- Protect downstream aquatic habitat and designated uses.
- Comply with regulatory requirements.
- Educate stakeholders on how to prevent pollution and how to get involved.
- Integrate watershed protection/restoration into policy-making.



Swales and other bioretention practices filter runoff from roads and other impervious surfaces.

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Current County Programs and Activities Addressing Impairments



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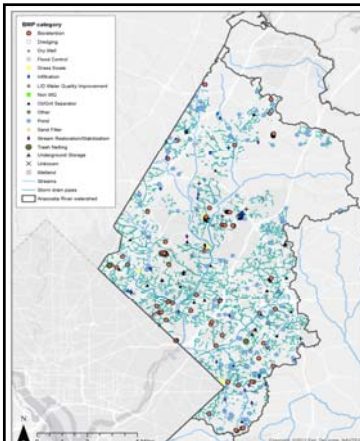
Current Management Activities and BMPs



- Reviewed practices and activities currently in place that can be credited to pollution reduction.
- Determined *how much* each activity or practice *contributes* to reducing pollutant loads.

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Existing BMP Locations in the Anacostia River Watershed



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Existing County Programs




- Stormwater-Specific Programs
 - Stormwater Management Program
 - P3 - Restoration
 - Rain Check Rebate and Grant Program
 - Alternative Compliance Program
 - Countywide Green/Complete Streets Program
 - Street sweeping, stormdrain stenciling, litter control, illicit discharge detection and elimination, cross-connections elimination
- Tree-Planting Programs
 - Tree ReLeaf, volunteer tree planting, Neighborhood Design Center, Arbor Day Every Day
- Public Education Programs
 - Master Gardeners, Transforming Neighborhood Initiative, flood awareness, animal management
- Transit/Transportation Programs
 - Commuter and carpool programs (e.g., Ride Smart Commuter, Park and Ride lots, Metrobus/rail, and TheBus)




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Load Reduction Targets



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Waste Load Reduction Needs

Water Treatment Model (WTM) used to determine the amount of reductions that still need to be achieved.

Load reductions from current BMPs compared to required load reductions for the County's MS4 area in the Anacostia Watershed. (Based on Current County Restoration Efforts.)

Parameter	Baseline	Percent Reduction	WLA	Required Reduction	Reduction from Current BMPs	Remaining Reduction or Cap	Percent of Required Load Reduction Satisfied by Current BMPs
Total nitrogen (lb/yr)	281,378	81.00%	53,462	227,917	4,759	223,157	2.09%
Total phosphorus (lb/yr)*	45,041	81.20%	8,467	36,573	1,366	35,208	3.73%
TSS (ton/yr)*	14,532	85.00%	2,180	12,352	2,600	9,752	21.05%
BOD (lb/yr)	1,151,816	58.00%	483,763	668,053	31,017	637,037	4.64%
Fecal coliform bacteria (MPN B/yr)	4,375,323	86.40%	594,281	3,781,042	39,756	3,741,286	1.05%

* Includes contributions from streambank erosion.


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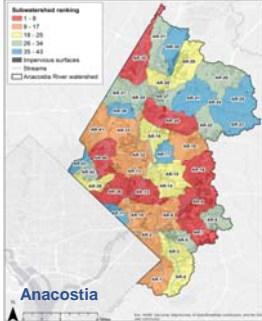
Prioritize Watersheds



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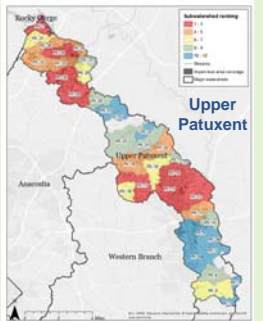


Priority Subwatersheds



Anacostia


Priority Pollutants: Nitrogen, Phosphorus, BOD, Bacteria, Sediment



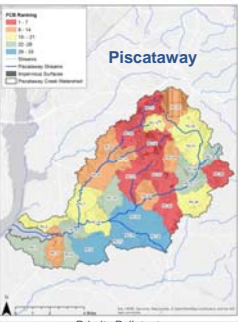
Upper Patuxent

Priority Pollutants: Bacteria, Sediment, Phosphorus - Rocky Gorge only

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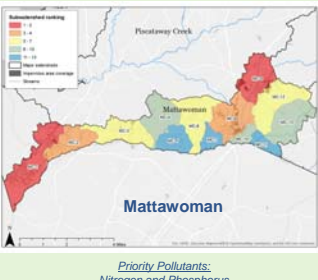


Priority Subwatersheds



Piscataway


Priority Pollutant: Bacteria



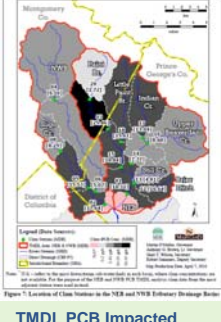
Mattawoman

Priority Pollutants: Nitrogen and Phosphorus

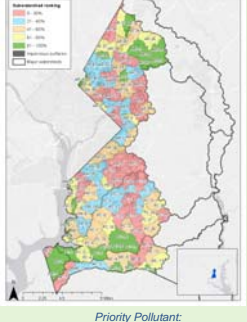
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Priority Subwatersheds




TMDL PCB Impacted Subwatersheds



Priority Pollutant: PCBs -Due to TSS Transport

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Proposed Strategies & Activities




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Determine Restoration Strategies

- Keep effective current and planned BMPs and programmatic initiatives.
 - Rain Check Rebate Program, Alternative Compliance Program, Street Sweeping, etc.
- Add new activities to supplement.
- Physical BMPs vs. programmatic initiatives.



Redirecting downspouts from impervious areas to landscaped features can reduce runoff volume.



Rain Garden Signage

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Future BMP Activities

- Examples include:
 - Retrofit of existing County dry ponds.
 - New right-of-way BMPs through County programs.
 - New BMPs on County property.
 - Partner with schools, libraries, churches, fire and police stations, hospitals, etc. to install new BMPs.



Bioretention in a right-of-way makes this a green street.



Alternative Compliance Kickoff Event at a Local Church.

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Potential Future Programmatic Activities

- Continue existing programmatic activities mentioned previously (Rain Check, Alternative Compliance, etc.)
- New outreach programs
 - Pet waste pickup
 - Lawn stewardship
 - Dumpster stewardship
 - Targeted reforestation
 - Municipal partnerships





Homeowners who install practices like rain gardens will help us meet our goals.

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What Can We Achieve from These Strategies & Activities?



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Impervious Acre Restoration Goals by Watershed

Year	Annual Available Impervious Acres	Anacostis River		Mattawoman Creek		Potomac River		Piscataway Creek		Rocky Gorge Reservoir		PCB Watersheds*		Cost (\$M)
		Acres	Est. TSS (tons)	Acres	Est. TSS (tons)	Acres	Est. TSS (tons)	Acres	Est. TSS (tons)	Acres	Est. TSS (tons)	Acres	Est. TSS (tons)	
2015	1,000	750	140	9.1	1.6	29	3.9	47	8.1	0.2	0.05	165	20	\$60.02
2016	1,000	750	140	9.1	1.6	29	3.9	47	8.1	0.2	0.05	165	20	\$60.02
2017	1,000	750	140	9.1	1.6	29	3.9	47	8.1	0.2	0.05	165	20	\$60.02
2018	1,000	650	122	12.8	2.2	40	5.4	66	11.4	0.3	0.07	230	28	\$56.04
2019	1,000	500	94	18.3	3.2	57	7.7	95	16.4	0.4	0.09	329	39	\$56.04
2020	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2021	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2022	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2023	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2024	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2025	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2026	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2027	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2028	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2029	1,000	642	120	13.1	2.3	41	5.5	68	11.8	0.3	0.07	236	28	\$56.04
2030	215	136	25	2.9	0.5	9	1.2	15	2.6	0.1	0.02	52	6	\$12.05
Total	15,215	9,955	1,864	192	33.4	603	81.5	997	172.5	4.3	1.01	3,463	416	\$864.62

* The watershed acreage and the TSS tonnage have no relationship in this table to PCB loads.

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Timeline for Implementation




Target	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Public Outreach																
Increase public outreach for Rain Check Rebates, Alternative Compliance, and other programs. (Continuous outreach that spans throughout the County)	X	X														
Establish public outreach campaigns for pet waste and lawn care	X	X														
Public outreach (e.g. campaigns for pet waste and lawn care, education and outreach on Alternative Compliance and Rain Check Rebates)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
BMP Implementation																
BMP planning and design	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
BMP implementation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NPODES MS4 Permit and WIP (Countywide)																
MS4 treatment: 20% of untreated impervious cover	X	X	X	X												
Projected MS4 requirement: 20% of untreated impervious cover					X	X	X	X	X							
WIP goal: 30% of untreated impervious cover	X	X	X													
WIP goal: 20% of untreated impervious cover				X	X	X	X	X	X							
Monitoring																
Complete Round 3 of the biological monitoring	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Complete selection of water quality chemical monitoring stations	X															
Results of chemical monitoring	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tracking and Reporting																
Update County geodatabase with new BMP, programmatic, and monitoring information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MS4 Annual Report	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Restoration Implementation Costs




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Cost Estimate for Restoration



- Approach (Programmatic & Structural BMPs)
 - Estimated costs to maintain current programs and to implement future activities and install/retrofit BMPs.
 - BMP costs were adapted from the University of Maryland Center for Environmental Science report *Costs of Stormwater Management Practices in Maryland Counties*, prepared for MDE (King and Hagan 2011).

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Estimated Cost to Implement Each Plan




- Anacostia River : \$681 million
- Piscataway Creek : \$43 million
- Mattawoman Creek : \$8 million
- Patuxent River : \$21 million
- Rocky Gorge Reservoir : \$0.2 million
- PCB-Impaired water bodies: \$112 million (Potomac River portion only)
- Chesapeake Bay WIP: \$727 million

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Covering Costs



- How will the County pay for this work?
 - Current funds include Capital Improvement Program (CIP) budget, Clean Water Act fee, and stormwater ad valorem tax.
 - Additional sources will include grants, watershed restoration partners, and the sale of municipal bonds.



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Tracking Progress




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Tracking Progress



Three Main Activities

1. Track with required annual MS4 report
 - Document restoration BMP installation and activities such as outreach
2. Environmental monitoring
 - Biological and water quality
3. Geo-referenced database
 - Project locations, type, amount of imperviousness surface treated, etc.

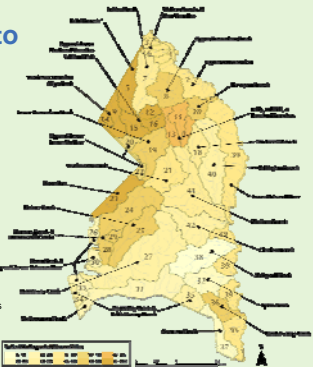


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How Will Biological Monitoring Be Used to Track Changes?

Watershed Status, Biological Condition (2013)

- Round 3 biological monitoring (2015-17)
- County will look for **substantial reductions** in "percent biological degradation"
 - Countywide scale
 - Subwatershed scale
- Can start to think about setting goals for reduced pct. degradation
- Interpret monitoring and assessment results in context of
 - Improved habitat and water chemistry conditions
 - Effectiveness of overall restoration activities (different from implementation effectiveness)



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Water Quality Monitoring



- Will be conducted in only one priority subwatershed.
 - County will ask permission from MDE to move the require NPDES monitoring locations in Bear Branch to the newly selected priority area in the Anacostia River watershed.
- Location will be selected within 6 months of plan finalization. Monitoring to begin within one year of plan finalization.
- Will monitor total nitrogen, total phosphorus, TSS, BOD, and fecal coliform bacteria.
- Monitoring assistance from MDE.

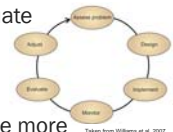


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Adaptive Management



- Learn and change as we go.
- After strategies are in place, evaluate changes in:
 - Pollutants relative to TMDL
 - Biological integrity
- Advances in technology will provide more effective, smaller, cheaper reduction measures.
- Multiple bottom-line benefits.
- Determine needs for additional controls.
- Continue monitoring and evaluation.



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What Is Next?



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Your Role in Restoration



- Become informed.
- Provide input.
- Support implementation by preventing stormwater pollution.
 - Pick up after pets, plant trees, install rain barrels, leave grass clippings on lawn, don't litter, etc.
- Use County Click (<http://countyclick.princegeorgescountymd.gov/>).



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30-Day Comment Period



- Public comments accepted Nov. 1 – Nov. 30.
- Submit Comments:

- Tonight:

- Comment forms
- Orally at hearing

- After Tonight:

- Email: LTennekoon@co.pg.md.us
- Regular mail:
Attn: Lilantha Tennekoon
Prince George's County Government
Stormwater Management Division
Department of the Environment
1801 McCormick Drive, Suite 500
Largo, MD 20774



Photo Credit: J. Anderson/ Canal Hygiene

Questions?



- Contact:
Mr. Lilantha Tennekoon
301-883-6198
LTennekoon@co.pg.md.us
- www.princegeorgescountymd.gov/sites/stormwatermanagement
- Comments due November 30, 2014

Thank you for attending!
Please remember to sign in if you have not done so already and turn in your comment forms!



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**Public Hearing on Watershed
Restoration in Prince George's County**
November 12, 2014 • Largo, MD



Appendix B: Written Comment



Public Hearing on the Draft Watershed Restoration Plans for Prince George's County



November 12, 2014 • Largo, MD

Comment Form

Comments can also be submitted by email to Mr. Lilantha Tennekoon at: LTennekoon@co.pg.md.us

Or by regular mail to:

Attn: Lilantha Tennekoon
Prince George's County Government
Stormwater Management Division
Department of the Environment
1801 McCormick Drive, Suite 500
Largo, MD 20774

For more information or to review the draft plans, visit:

www.princegeorgescountymd.gov/sites/StormwaterManagement/Services/Streams-Watersheds/Restoration-Planning/Pages/default.aspx

Name: BILL WALMSLEY

Organization: _____

Address: 5915 Justina Drive, Lanham, MD 20786

Email: bwalmsley@gosps.com

Affiliation Type (please check a box):

- Private citizen
- Environmental organization
- Business/commercial
- Local government
- State government
- Federal government
- Other:

Comments:

Understand that county has taken steps to stream line development permitting process but a step should be added for an environmental review to insure that BMP's are being incorporated into that new development. Otherwise we will be spending time & money to fix ~~the~~ existing situations at some time as more new problems are being added. We don't want to necessarily curtail (limit) development but to insure it's done right.

lower care education may need to be strengthened to extent of literacy that allows much commercial firms ~~can~~ can apply ~~what~~ what, when & how. Getting to individual residence grows ever more difficult particularly when constantly bombarded with advertising promoting additional low care products.

Thank you for your participation!



**Public Hearing on Watershed
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Appendix C: Summary of Oral Comments and Responses

Summary of Comments Provided Orally at the November 12, 2014, Public Hearing on the Draft Restoration Plans

Provided below is a brief summary of the comments given orally at the public hearing. Many comment summaries are a compilation of similar comments provided by different attendees.

Community Participation

Comment Summary: The plans should provide more information on how community organizations and citizens can participate in implementation. For example, local groups can tell the County about the breaking of ground in their areas so they can work with the County to ensure that proper stormwater controls are in place. In addition, some groups would like the County to provide them with tools to monitor progress and identify projects, plans, and priorities in local sub-watersheds. This could increase the public's confidence in the program in general and in terms of specific best management practices (BMPs). Community groups would like to be involved early on in project selection. Community groups would also like to receive professional advice or have access to an information clearinghouse and expert speakers.

Response Summary: Community organizations and citizen groups can participate in several ways in the restoration plans. One way is to get involved with local non-profit groups with which the County is currently partnering. The County will be using non-profits to help find grant opportunities so they do not have to wait for the County programs. This additional funding will allow quick upgrades or installation of BMPs throughout various municipalities. In addition, groups can help by identifying potential projects and assisting with public outreach on a variety of water quality topics such as the upcoming litter and pet waste campaigns. Groups can meet with homeowner associations and other civic leaders to relay the messages that will be pushed with the campaigns and participate in community trash pickups or the Rain Check Rebate Program. The County will add more details on these types of opportunities in the plans.

Enforceability

Comment Summary: There is no discussion of enforceability in the restoration plans. The County should specify how these plans will be enforced at the end of the 5-year term. The County should not wait until 2030 to raise the question about enforceability.

Response Summary: Maryland Department of the Environment (MDE) will be holding the County accountable for what is in this plan when submitted on January 2, 2015. The County will have to show MDE how much of the BMP goals were accomplished.

Load Reductions from Programmatic Activities

Comment Summary: The County assumes that there will be load reductions resulting from several programmatic activities. However, there is not enough explanation for some of the programmatic activities on how the estimated load reductions were developed. For other programmatic activities, there is no explanation of expected load reductions. Several attendees voiced the opinion that the programmatic activities described in the plan are supplementary and will not get the County very far in terms of actual load reductions. They feel that the section on programmatic activities is a repackaging of existing programs that are not sufficient.

Response Summary: The programmatic goals will always have a risk associated with them since. For example, in the case of education and outreach, some outreach programs might be more successful and some less successful. The County must not toss these tools out. We have to see what reduction results they produce. It is too early in the game to know which programmatic goals will be successful and which will not, however, that should not stop us from hoping to have results from them. With adaptive management, we will be able to learn year by year whether these programs are producing or not. Programs like street sweeping can be a good tool. It is one of the tools in our toolbox. In the case of street sweeping, we used MDE's mass loading approach for estimating nutrient and sediment load reductions associated with this activity based on tons of dirt collected. Under this plan, the County is looking at whether it should alter the locations for street sweeping, increase sweeping frequency, or increase the number of streets swept. For other programmatic activities, the County relied on some research and judgment to determine reduction estimates. However, there are obviously activities that the County cannot quantify in terms of expected pollutant reduction amounts, such as repairs to reduce combined sewer overflows (CSOs). We know that WSSC is working to repair and replace many sewers but we do not yet know how those improvements are going to do for the entire system. Adaptive management will help us understand these impacts going forward.

The restoration plans do not rely on programmatic initiatives alone. Because the County owns the public streets, which have a very large percentage of impervious surfaces, the County is focusing on restoring all of the public streets that are not already treated. Secondly, we are focusing on publicly owned property which includes schools and libraries. The bulk of the restoration program will involve retrofitting streets and public areas. The final area we looked at was private residential land, which we hope to tackle with programmatic initiatives and structural practices.

Type and Location of Monitoring Sites

Comment Summary: You talk a lot about adaptive management, but with plans for only one water quality monitoring site in the County, how will you do that? How do you know that Piscataway Creek or Mattawoman Creek will respond to the BMPs if you do not monitor water quality there? You have stated that the adaptive management process is all about trial and error to get feedback. However, feedback comes from monitoring. How can one monitoring site collect data representative for the whole gamut of various BMPs, various types of specific land uses, etc.?

Response Summary: Monitoring is very expensive, and it takes a long time to get the results. We have many biological monitoring sites to help us get there. Although the County has proposed only one location for water quality monitoring, biological monitoring is distributed throughout the County. The County looks at the biological data for various watersheds and will be targeting the areas that have the largest biological challenges. We can consider for protection watersheds where biological conditions are rated as fair. The ones in poor condition would be addressed with on-the-ground BMPs. The County conducts its own biological monitoring program; it is separate from the Maryland Biological Stream Survey (MBSS) program. Exact sites monitored can be found in separate monitoring reports that the

County can provide to anyone who wants a copy. In addition, the existing condition reports prepared as a precursor to the restoration plans provides more information on biological monitoring. Those existing conditions report are also available on the County's website.

Development Impacts

Comment Summary: In Prince George's County, it seems that politicians have been favoring development over the environment, and there is little oversight of what is allowed to be developed, where it occurs, and how it occurs. In these plans, is the County looking at the permitting process and how its permitted activities impact the environment?

Response Summary: It is not part of this plan; however, we do agree that this is a concern. Any change in land use has an impact on the watershed in the long-run. The County's goal through these plans is to address the existing damage. The assumption today is that new developments are providing controls to the maximum extent practicable to at least protect what is already in good condition. Any new development currently must go through a very rigorous process with the planning commission, and they must implement the MDE Environmental Site Design procedures for developing land. In addition, sediment and erosion control plans have to be developed to meet stormwater management requirements during construction. We are hopeful that this environmental design process will result in development that has little, if any, impact on streets.

Percent Reductions Required

Comment Summary: How did you come up with the 14 percent figure for Mattawoman Creek for nitrogen and phosphorus? There seems to be a disconnect between this 14 percent reduction in nitrogen and phosphorus and the percentage that is listed in the actual TMDL, which gave an overall reduction of 40 percent (broken down into the annual average for storm water to a 50 percent reduction).

Response Summary: MDE developed all of these TMDLs. They also developed something called the Maryland *TMDL Data Center*. MDE has gone through excruciating detail to enter all the TMDLs they have completed into the data center and figure out the load reduction for entities like Prince George's County. In addition, as a result of a County inquiry about the data, MDE recently updated the data center to correct some inaccurate information. In these plans, the County used MDE's calculated percentages from the data center.

Load Reduction Contributions at the Municipal Level

Comment Summary: How have local municipalities' stormwater reduction activities like street sweeping been taken into account and credited? How will all the local efforts underway be reported and tracked?

Response Summary: The County hopes to develop a data center where all of these activities have to be reported. That may take about a year to build. Once completed, this tool will be centralized so that all the different partners—non-profits, community organizers, cities, and towns—would report on their progress in terms of BMPs they have installed, so we should be able to account for all activities this way.

Protection Versus Restoration

Comment Summary: Do the plans include plans to protect areas that are not yet very developed such as forested areas (particularly those that surround feeder streams)? It is better to protect an area from damage rather than fixing it after it has been damaged. Can the County use program dollars to acquire land to be

kept as undeveloped park land?

Response Summary: Although this is not in the restoration plan, we are definitely planning to look more at protection activities. Protection is one of the County's overall strategies that we will be looking at in the next few years.

Comment Summary: How will the County determine to what degree they need to seek a change in behavior from developers and others that are contributing to water quality problems?

Response Summary: Initially the reaction from all sides has been to fix degraded waterbodies, fix what is fixable, observe what happens once fixed, and then proceed from there. The County will be looking to see if changes we are making are fixing the problems and if not, do we have evidence of a need to push forward with purchasing lands in conjunction with restoration and move in that direction? The County has to compete with development. Developers find money to buy land and develop it. Therefore, the County should be doing the same thing in the long term. However, that is currently not part of the restoration plan. We have to consider timing, and during this economic downturn, now may not be the right time. What we can do is tied to the economy in our area.

Public Outreach

Comment Summary: One commenter mentioned that there was no discussion in terms of public outreach that acknowledges the diverse population that lives in the County. From a health education and behavior change perspective, it is important to consider the cultural appropriateness of any type campaign. Similarly, it should be addressed in this plan. In addition, one commenter mentioned that transparency is essential to success. Maps of current and completed stormwater projects would help citizens understand where we are and where we are going.

Response Summary: The County is going to be tackling some of those issues when it develops outreach campaigns for pet waste, lawn stewardship, and other topics in the future. We are going to be looking at different languages and cultures throughout the County trying to learn how those populations best receive information, what events they attend, etc. The County will be focusing on the best way to reach diverse groups with different messaging and methods to make sure that they are getting the message and acting on it.

Illegal Dumping

Comment Summary: There is a major issue with people dumping on Cold Spring Road. They dump everything from old batteries to mattresses.

Response Summary: These illegal dumping locations are scattered around the County. There are a couple of forums that the County has ongoing to try to tackle this issue. There has even been talk of perhaps putting cameras in different locations to prevent dumping.

Small Business Opportunities for Green Technology

Comment Summary: Has there been any attempt in the past, or plans for the future, to incentivize small businesses to adopt and incorporate green technology, especially where the environment is concerned?

Response Summary: There has been related discussions with respect to the County Jobs First Act. There will certainly be opportunities for businesses to participate with the programs we are going to be relying on, such as providing materials for training residents or businesses. This work is being conducted by

another group at the County.

Runoff from Roads

Comment Summary: Is there an effort being made to narrow some of the streets to make them greener?

Response Summary: Yes. It is one of our strategies for street restoration. Which streets are narrowed and how it is done will depend on the type of road and how much traffic that road gets.

Other Comments

Comment Summary: How much of this restoration work will be conducted by the public-private-partnership (P3)?

Response Summary: The P3 will accelerate the restoration effort and manage a bulk of it. The P3 should be able to have more flexibility than the County process currently provides our staff people. The County can only do so many projects a year because we are limited in staff.

Comment Summary: How often is this plan going to be updated, and how much will it change in the future?

Response Summary: This restoration plan will not be in concrete. MDE does not expect that from us, and we are going to go back to it with modifications and adjustments based on what we learn along the way. Therefore, we are looking at it as a starting point. We are not going to write a plan that gets shelved. It is going to be a living plan because a lot is going into it. Our citizens are spending money on it, and there is accountability involved. We will be modifying the plans to ensure that the programs that we know are effective will grow, and the ones that are not will be reduced.

Comments from Jon Robinson

From: Jon Robinson

Sent: Thursday, November 27, 2014 11:41 PM

To: Tennekoon, Lilantha

Cc: Lori Baranoff; Daniel Smith

Subject: Comments on the 2014 draft Anacostia Restoration Plan

Dear Mr. Lilantha Tennekoon

Below are my general comments on Prince George's County plan for improving Anacostia Watershed. I have also attached a link to Hightail.com which contains the commented version of the PDF document that was on the County's web site.

- Include links to the technical memoranda mentioned in the planning document for easy access.
Response: The County intends to add the necessary link to the technical memorandum after MDE has approved the restoration plans.
- There should be a discussion of alternative funding mechanisms if the storm water tax is canceled.
Response: The County is committed to reducing pollutant loads in urban stormwater and is prepared to look for different funding opportunities to compensate for this unlikely outcome.
- In the fall of 2014, the county public works added curb and gutter on Cool Spring Road. It seems this would be counter to the plan's preferred state as it accelerates run off into the Northwest Branch and channelization of the wetlands between Cool Spring Road and the Northwest Branch.
Response: We do not disagree on the impact of curb and gutter in increasing concentrated flow. DPW&T is also instituting a green street program to provide stormwater controls on ROW of this type.
- The failure to include the acquisition of land to either protect existing forest in the watershed or to reforest previously developed land is a critical short coming of this plan. There should be a provision to include coordinating acquisition of currently forested but privately held land with MNCPPC to avoid the increased pollutant loads developing these lands would cause. The flow chart accounting for TMDL reduction fails to include the increased load caused by developing currently forested lands. The cost of mitigating the increased waste loads caused by developing currently forested lands needs to be included in designing the optimal solution. The early on the report says land acquisition was taken off the table as a management tool. There is no reason given for this. One can only conclude it was a political decision pushed by the developer community.
Response: We will add text to the Adaptive Management section to recommend the County will explore other alternative restoration activities, such as land preservation, which can be a viable option for restoration activities.
- As the report states, effective reduction of waste loads will require coordination between agencies; however, no mechanism such as memorandum of understandings or new enabling legislation were suggested to achieve the required coordination.
Response: The County's commitment to the WIP and recently issued MS4 permit already provides assurance with respect to roles at County agencies about programs associated with pollutant load reductions. We do not see the need to have separate memorandums of understanding on this regard.

NOTE: Specific comments were imbedded in a PDF version of the Anacostia River Watershed Restoration Plan. These were copied and pasted below so that the County could respond to each.

1. PDF page 10, 1.1 Purpose of Report and Restoration Planning

Change section title to Purpose of Report and Restoration and Preservation Planning. This recognizes that there are still some areas that have natural land cover and that these need to be preserved.

Preserving natural forest land cover is less expensive and more effective for protecting water quality than trying to remediate it after it is developed.

Response: While, the County agrees that acquisition of forests, open spaces, and wetlands is important; the purpose of acquisitions is preservation and protecting the County's water resources by preventing development. The purpose of these plans is to identify restoration activities to improve the health of the Counties waters through a reduction in pollutant loads.

2. PDF page 12, second bullet

Suggest a table with ranking of land cover surfaces in terms of their rate of contribution in units/acre to the TMDL budget and the cost per acre to remediate various man influenced areas -- agriculture, suburban, urban, industrial, commercial areas to natural land cover rates.

Response: The technical memorandum contains a table of different loading rates and costs by land uses.

3. PDF page 16, Table 1-4 "Station" column

Need more descriptive name or near by map reference

Response: We will add station names to the table. The *Anacostia River Watershed Existing Conditions Report* (available on the TMDL Restoration Plan website) contains a map of all water quality stations, including these. In addition, the original TMDL document contains maps of their location.

4. PDF page 17, second paragraph "Certain restoration activities... were removed from this list"

There needs to be some explanation as to why land acquisition was removed from the list as retailing and restoring land to its natural land cover condition is the most effective way to reduce runoff.

Response: Please refer to response to specific comment #1. Table 1-5 is meant to show the number of identified potential restoration activities in the watershed as presented in the Anacostia Watershed Restoration Partnership's subwatershed action plans.

5. PDF page 18, Table 1-5

Should include increases in run off expected from developing existing forest land, and intensifying development in the watershed to see the cost of mitigating future development.

Response: Table 1-5 is meant to show the number of identified potential restoration activities in the watershed as presented in the Anacostia Watershed Restoration Partnership's subwatershed action plans. Specific costs and other information may be obtained from these specific action plans.

6. PDF page 19, third paragraph last sentence

It should be pointed out that this is due to the large amount of impervious surface in the watershed. Fix by adding the parenthetical remark (because of the large proportion of developed and impervious land surfaces)

Response: The County will add the suggested text to the paragraph.

7. PDF page 20, second paragraph “Soils affected by urbanization...”

Add a table and or graph with the comparative runoff rates for natural and developed land covers for each soil type to allow clear illustration of how much development increases runoff for each soil type.

Response: We believe there is adequate information in U.S. Department of Agriculture literature regarding soils and linking hydrology and infiltration. It is not the intent of this document to go over already established principles and behavior of urban soils. Some relevant information is available in Table 2-2a in the *Urban Hydrology for Small Watersheds* by U.S. Department of Agriculture, Natural Resources Conservation Service, Conservation Engineering Division. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf)

8. PDF page 22, Table 2-2

Acres of forested wetlands should be specified

Response: Forested wetland is not a category in the land use data set (MDP 2010) that was used to create the table.

9. PDF page 26, second paragraph “Round 2 assessment report...”

This data should be available for more detailed analysis.

Response: The *Anacostia River Watershed Existing Conditions Report* (available on the TMDL Restoration Plan website) contains additional information.

10. PDF page 28, second paragraph last sentence

List facilities in a parenthetical remark.

Response: This information will be added to the restoration plan. Additional information is also available in the *Anacostia River Watershed Existing Conditions Report* (available on the TMDL Restoration Plan website).

11. PDF page 30, seventh bullet

How are you going to do this if you are not considering acquiring undeveloped land, or developed land to be returned to a natural undeveloped state?

Response: Protecting the County’s habitats can be done through a variety of methods. Please see response to your general bullet #4. However, the topic of land preservation is addressed, by reference, in the *Anacostia Watershed Forest Management and Protection Strategy* by MWCOG Department of Environmental Programs for the Anacostia Watershed Restoration Committee.

12. PDF page 30, eighth bullet

You need specific numerical goals, such as change % of water running directly off impervious surfaces from x to y. Decreasing the velocity of water in streams from f to s given r inches of rain fall in h hours.

Response: Hydrology, water quality, and habitat will be restored through implementing activities identified in Chapter 6 of the restoration plans.

13. PDF page 30, ninth bullet

You need numerical goals

Response: Numeric restoration activity goals are presented in Chapter 6 of the restoration plans.

14. PDF page 30, twelfth bullet

Specific methods and changes to the law that would ensure zoning and development practices include this. Coordination with MNCPPC open space acquisition should be included.

Response: The M-NCPPC's *Water Resources Functional Master Plan* and the countywide *Green Infrastructure Plan* outlines the County's zoning and developmental policies. While we agree open space acquisition is part of the overall strategy to improve water quality, these plans focus on restoration activities, both structural and programmatic.

15. PDF page 32, third or fourth paragraph (third full paragraph)

It would seem that you would want to verify the correspondence between the SWMM and WTM for more than one watershed to be confident you can generalize the relation.

Response: The watersheds' pervious responses are similar to each other. Impervious runoff is a function of both area and connectivity. WTM explicitly accounts for both processes.

16. PDF page 34, second paragraph last sentence

This would seem to be of critical importance to understanding the impact of further development of areas currently covered by forest.

Response: MDE has developed new regulations *environmental site design*, which focus on controlling the amount of runoff volumes to match the pre-development conditions to a forest standard and thus protect the integrity of the receiving streams.

17. PDF page 45, bullet carrying over from page 44 "Illicit Discharge Detection and Elimination" last sentence

Don't you have estimates of the amount dumped from reported violations?

Response: Illicit discharges can be highly variable. The County has expanded the inspection program by contracting consulting services to increase the inspection workforce. Better numerical values of enforcement and detection is expected.

18. PDF page 45, first bullet "Cross-Connections Elimination" "the location and size of the connections are unknown until reported"

Once reported you should be able to estimate the rate of dumping and could use statistical methods to estimate what is left to discover.

Response: See response to comment #17.

19. PDF page 46, bullet carrying over from page 45 “Tree ReLeaf Grant Program” “These trees were mostly planted in Mount Rainier and New Carrollton...”

There should be a plan for taking possession of clearing and reforesting abandon properties.

Response: Current County efforts include a new program called Transform Neighborhood Initiative (TNI), which targets neighborhoods that are economically stressed. Under the program, the County works with the community to address issues regarding abandoned properties.

20. PDF page 46, last bullet “Arbor Day Every Day” last sentence

Look at establish a method where seedlings could be obtained from open or cleared property that is going through succession instead of buying larger trees.

Response: The option could be considered under the TNI program.

21. PDF page 50, third paragraph

You should be taking into account the distribution of rain fall rates and how it is expected to change with anthropogenic global warming in calculating your expected efficiencies.

Response: While the global warming topic remains an important discussion at the federal and state level, the County developed this plan using the current pollutant removal efficiencies established by MDE and EPA.

22. PDF page 57, “Retrofit Existing BMPs (Dry Ponds) to enhance load reductions” box

Acquisition of undeveloped forest as park land, or the development of forested land should be included as either forgoing or increasing loads respectively.

Response: As stated in our response to your general bullet #4, these plans are for restoration, and not for preservation.

23. PDF page 57, “Do reductions meet target load reduction?” diamond

Anticipated activities that increase the load also need to be included in this flow chart. One example above.

Response: MDE has developed new regulations environmental site design, which focus on controlling the amount of runoff volumes to match the pre-development conditions to a forest standard and thus protect the integrity of the receiving streams.

24. PDF page 64, Table 5-2, “Tree Planting and Reforestation”

You should include the repair of channelization of wetlands from road culverts as a retrofit for areas like wetlands in stream valley parks.

Response: During project assessment for implementation, the County will welcome the opportunity to restore channelization or degraded wetlands based on costs, opportunity, and land ownership. The County will stay open to pursuing these types of opportunities.

25. PDF page 93, second paragraph first sentence

The County should also seek funds to acquire undeveloped forest land in the watershed to protect it from development.

Response: As stated in response to your general bullet #3, these plans are for restoration, and not for preservation.

26. PDF page 96, Table 6-10

It looks like you just took the total number of acres and divided by the number of years to get close to an equal number of acres each year. It would seem that unless the areas to be remediated are very fine grained, that the number of acres per year would be more variable. This suggests that the areas to be remediated and the priority of the areas to be done over the course of the project have not really been determined.

Response: That is correct. Restoration activities on this scale are difficult to plan to the exact acres treated. These restoration plans are a guide to the amount of work that is needed to meet reduction goals. The amount of impervious acres to be treated every year will vary depending on site selection, but will average out to the acres listed in the table. It is always the County's goal to exceed these numbers to speed up the restoration process. Text will be added that the values are estimates and are expected to vary slightly.

27. PDF page 105, second paragraph under 7.1

It seems that the emphasis is on BMP structures built or improved when the real goal is reduced nutrient and sediment loads that can be measured by sampling in the sub watersheds. Developing cooperative plans with local colleges and perhaps even high schools to do regular water sampling in watersheds could significantly reduce costs of water sampling and simultaneously get credit for public outreach and education

Response: It is a novel idea to include colleges and high schools in a water quality sampling/monitoring program. However, the County's MS4 permit has strict protocols for water quality sampling methodologies that are outside the capabilities of professional services. Therefore the benefits of community sampling efforts would be limited in obtaining certifiable water quality data.

28. PDF page 106, section 7.2

Are the sampling frequency and sampling locations of MDE known? Will the MDE results be included in the County database?

Response: MDE follows a 5-year cyclic watershed-monitoring period. (http://www.mde.state.md.us/programs/ResearchCenter/EnvironmentalData/Documents/www.mde.state.md.us/assets/document/Maryland_Monitoring_Strategy2009.pdf) The MDE data will need to be accessed through the state.

29. PDF page 107, first paragraph

What variables were used to stratify the sampling locations?

Response: The variables were Wadeable, nontidal streams, generally 1st through 4th order (based on the Strahler system and 1:100,000 map scale; distribution of sample locations more heavily

weighted to smaller 1st and 2nd order streams). Sample locations were stratified by the County's 41 subwatersheds.

30. PDF page 108, second paragraph "If monitoring were to be conducted for each subwatershed..."

What are the estimated costs of regularly sampling water at a location? Break down the costs between sample collection and sample analysis.

Response: Costs are estimated to be roughly \$200,000 per site for monthly sample collection, analysis and data management. The majority of the costs are for staffing resources for sample collection and maintenance of automatic water collecting samplers.

31. PDF page 108, third paragraph

These are standard practices. More sites could be sampled if coordination with University of MD classes teaching water testing. Perhaps include Prince George's Community College if they teach such classes.

Response: See response for #27.

32. PDF page 108, fourth paragraph

Measuring chemical water quality in only one site allows for gaming the system.

Response: The County will evaluate options for the appropriate monitoring program in consultation with MDE.

33. PDF page 108, fourth paragraph

How expensive are each of these alternatives. It would seem that electronic flow measurement along with automated electronic data transmittal would save significant labor costs. A staff gage needs to be manually read and the information manually entered into a database, increasing the opportunity for error to be introduced.

Response: Exact costs for these options have not been developed. Each method has its pros and cons. Electronic measurement would give constant stream height readings and would involve a stream height to flow rating curve that would need to be developed, so there is still the opportunity of error to be introduced. However, the electronic equipment can be used in combination with automatic water samplers.

34. PDF page 108, fifth paragraph

Given that the land cover, land use, state of storm water management facilities fluctuate over time, it would seem prudent to continue monitoring after the water quality has been met on a less frequent basis to ensure there is no deterioration.

Response: The County will take your comment into consideration. As stated in the restoration plan, "once water quality standards have been met or restoration practices have been in place for 5 years, the County *might* [emphasis added] consider discontinuing monitoring of the chemical water quality for that subwatershed." The decision to continue monitoring would be made at that time and be dependent on various factors.

35. PDF page 110, second paragraph “... the installed BMPs might not operate at the level of pollutant...”

This points out the importance of water testing before and after implementation of a BMP.

Response: It is to be expected that not all BMP practices will perform at the same efficiency levels. However, the County has built in protocols to ensure the construction of these facilities are done according to industry standards and therefore will perform reasonably close to average pollutant removal efficiencies established by researchers and the State. It would be cost prohibitive to increase the level of monitoring to capture the treatment efficiency of BMP practices at the site level.

36. PDF page 110, second paragraph “Potential reasons for the lags could be a lack of available land...”

This points out the importance of including land acquisition as a tool in meeting TMDL requirements.

Response: As with any water quality project, land acquisition, easements, and ROW availability are variables that affect the installation of BMP devices. The County addresses these variables on a case by case basis.

37. PDF page 110, second paragraph

What are the contingency plans for lapses in funding? What are the costs of not meeting the schedule?

Response: The County has a Capital Improvement Program (CIP) annual budget through which we project construction budgeting projections for 6 years into the future. Therefore, predicting funding lapses beyond this would not be reasonable. Through this plan, the County is making a concerted effort to project a level of effort required to reduce loads from various watersheds and impairments. The County realizes that some efforts maybe more successful than others with respect to the schedule. This is the reason why the implementation plan offers an adaptive management component to ensure issues are identified and addressed early.

38. PDF page 111, third paragraph “county departments will meet on a more frequent basis to discuss progress...”

At a minimum there should be written memos of understanding about the responsibilities and contact points between departments and a specification of who makes the final decision. In the absence of enforceable MoUs, there should be County legislation laying this out.

Response: See response to last comment under “General Comments”.

39. PDF page 111, third paragraph

Why not request County legislation that would ban permitting activities that would increase waste loads?

Response: MDE has developed new regulations environmental site design, which focus on controlling the amount of runoff volumes to match the pre-development conditions to a forest standard and thus protect the integrity of the receiving streams.

Comments from Natural Resources Defense Council



NATURAL RESOURCES DEFENSE COUNCIL

together with:

**ANACOSTIA WATERSHED SOCIETY · AUDUBON NATURALIST SOCIETY
CLEAN WATER ACTION · FRIENDS OF QUINCY RUN WATERSHED
MATTAWOMAN WATERSHED SOCIETY**

December 1, 2014

Mr. Lilantha Tennekoon

Prince George's County Department of the Environment

Stormwater Management Division

1801 McCormick Drive, Suite 500

Largo, MD 20772

Submitted via email [to LTennekoon@co.pg.md.us](mailto:LTennekoon@co.pg.md.us)

Re: Prince George's County Draft Restoration Plans

Dear Mr. Tennekoon:

Thank you for this opportunity to comment on Prince George's County's draft watershed restoration plans. The release of these plans is an exciting moment for clean water in the County, as they set forth the vision for the important restoration work that will be done over the coming decades.

These comments are submitted on behalf of the Natural Resources Defense Council, together with the Anacostia Watershed Society, Audubon Naturalist Society, Clean Water Action, Friends of Quincy Run Watershed, and Mattawoman Watershed Society. Our organizations are committed to helping the County succeed at developing robust plans that will chart a course toward cleaner streams and greener communities, while also fulfilling the obligations of the County's stormwater permit. The comments that follow below are offered in this spirit of support and collaboration.

I. These Plans Are Critically Important to Achieving Clean Water in Prince George's County.

These draft plans represent the first time the County has ever put together a comprehensive strategy for reducing its stormwater runoff pollution and cleaning up its waterways. It is clear that the plans are hugely important for both local rivers and streams and the Chesapeake Bay clean-up effort, and they present a once-in-a-lifetime opportunity to commit to investing in a more sustainable and livable Prince George's County.

Polluted runoff is a serious problem in the County. As the draft plans note, many water bodies in Prince George's are impaired, with up to 78% of stream miles being assessed as degraded in the Anacostia River basin. This pollution prevents the County's natural resources from providing all of the benefits they have the potential to offer. Restoring these watersheds will allow our rivers, streams, and lakes to fulfill their potential. Cleaner waters stimulate local economies by providing recreational opportunities and increasing property values. They boost public health. And using green "environmental site design" (ESD) practices to undertake the restoration work, as discussed in more detail below, will provide a host of other benefits ranging from cleaner air to more wildlife habitat.

It is essential to get these plans right – to set ambitious goals and ensure they are well-supported by science. These plans are especially important given that recent restoration efforts have resulted in neither improvements nor declines in water quality in the Anacostia River watershed, as indicated by the County's Round 2 bioassessment (mentioned in the draft plan). While it is promising to see water quality conditions are not continuing to degrade, there is much work to be done to reverse this trajectory and grow healthier communities as a result. These documents will help us get there by directing the County's efforts for many years to come. Both the County's government leaders and its citizens must have confidence that the strategies are designed to succeed, so that we know public resources will be well spent and our progress will be worth the effort. Even though the County has the ability to modify the plans in the future as part of an adaptive management approach, the first iteration of the plans will have established a structure and an overall framework that may be difficult to deviate from once the County and stakeholders have committed to it. Now is the time to ensure that the foundation of the plans is strong.

These plans are also critical from a legal and regulatory perspective, as they establish timetables and strategies for attainment of the County's total maximum daily load (TMDL) wasteload allocations (WLAs) for stormwater. The deadlines and milestones set out in the plans will be enforceable, per the terms of the County's state-issued municipal separate storm sewer system (MS4) permit. It is therefore in the County's best interest to make sure that the plans set out a clear and well-reasoned path to achieving all specified end dates, ensuring continued compliance with the permit. In short, the better these plans are, the more likely it is that the County will achieve all of its goals and set the standard for clean water in the region and beyond.

We believe that if the County takes our comments into consideration, the result will be stronger plans that put the County in a better position to meet all of its legal obligations and to achieve its restoration objectives on schedule.

II. The County Should Commit to Greater Public Involvement in the Development and Implementation of Cleanup Plans.

While we appreciate the opportunity to provide formal comments on these draft plans, we believe our feedback would have been more useful if we had had the chance to provide it earlier in the process. These draft plans are already fully developed. In our experience, once a document reaches this stage, it is more difficult for any significant changes to be made as a result of public comments, as an agency can become committed to its selected course of action. We are also mindful of the fact that offering criticism of what the County considers a “near-finished” product creates a potentially adversarial situation that could have been avoided with earlier citizen outreach. The Maryland Department of the Environment (MDE) recognizes the pitfalls that come with public engagement late in the process, which is why the County’s MS4 permit requires it to “provide *continual* outreach to the public regarding the development of its watershed assessments and restoration plans.”¹¹

Response: The County held two public meetings in July 2014 at the beginning of the restoration plan development process to lay out its plans and to seek public input. The County sent a public notice about the July meetings via email to stakeholders, citizen groups, and others, posted two notices in the Gazette newspaper, and posted meeting information on the DoE Facebook page. Letters to County Council Members were also sent to notify them and their constituents of the meetings. Several local watershed groups attended the July meetings, including the Anacostia Watershed Society. At those meetings, local watershed groups were advised to contact the County direction via email or phone with any specific issues they would like to discuss in further detail.

The County only had one year to develop the plans, which did not provide substantial time to involve all interested parties. From the July 2014 informational meeting, the County had 3 months to develop the restoration plans and perform internal reviews before the public comment period in November. This short timeframe did not provide for interaction with the public at regular intervals. Given the adaptive nature of the plans, the county will reach out to different groups over the course of the restoration activities, share information, and evolve the plans based on new data and information.

Additionally, we note that 30 days is a very short comment period for plans with this degree of length and complexity. We recognize that the County’s MS4 permit requires a “minimum” 30-day comment period. However, the County’s choice to comply with the requirement to the minimum extent possible, and not to provide pre-draft materials for review prior to the official comment period, hampered stakeholders’ ability to provide the most constructive feedback possible. In particular, we were put at a significant disadvantage

¹ Maryland Department Of The Environment, National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Discharge Permit Number 11-DP-3314/MD0068284 for Prince George’s County, Maryland, at Section IV.E.3 (Jan. 2014), *available at* <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/Prince%20George%27s%20county%20final%20permit%20January%202%202014.pdf> (emphasis added) (hereinafter “M54 Permit”).

by the County's decision not to provide its "technical memo" containing detailed information about modeling assumptions and outputs until more than two-thirds of the way through the comment period, on November 21. Even then, it was only provided after our groups specifically requested it; it was never published online or made available to other stakeholders. We were ultimately left with only a few days to read and understand this technical information, and to integrate our reactions into these comments. Had we received the draft when it was available to the County on June 30 (according to the initial date on the document), or soon after, we would have had ample time to review and submit comments, and the County would have had more time to fully consider them and adjust both the technical document and the plans that are highly dependent upon it.

Response: Given the tight timeframe allotted by MDE in the MS4 permit, a longer review period was not possible. The initial technical memorandum was developed by June 30, 2014, but it only included initial model set up and calibration. It did not contain any information on pollution reduction techniques. As stated above, the County held two public informational meetings in July.

The technical memorandum was not finalized at the time of the initial release of the restoration plans for public comment. During public comment, a working copy of the technical memorandum was released, upon specific written request, with the disclaimer that County review had not been completed, thus making the technical memorandum unfinished. Once finalized, the technical memorandum will be placed on the TMDL restoration plan website.

In the future, we ask that the County engage citizens more consistently, and earlier in the process, when it is developing or modifying environmental clean-up plans. We also hope that the County will increase citizen outreach and engagement as it moves into the implementation phase of the watershed restoration effort. Transparency and openness are critical to citizen buy-in, and they can lead to better plans and ultimately environmental outcomes as well, which is why public participation is one of the fundamental goals of the Clean Water Act.²

For example, we urge the County to set up a process like the one currently underway in the District of Columbia, where a citizen stakeholder group has been convened and meets regularly to discuss the District's process in analyzing watershed data and developing a plan to meet pollution targets.³ This process has improved stakeholder confidence in the planning process and has led to substantive improvements in the District's planning documents.

² See 33 U.S.C. § 1251(e); see also *Environmental Defense Center v. EPA*, 344 F.3d 832, 856 (9th Cir. 2003) ("Congress clearly intended to guarantee the public a meaningful role in the implementation of the Clean Water Act.").

³ See District Department of the Environment, "DC Stormwater Plan – Stakeholders," <http://dcstormwaterplan.org/project-background/>.

Baltimore County has also committed to establishing a Watershed Advisory Group that will meet regularly to discuss implementation progress and monitoring results.⁴ This process could serve as a potential model in Prince George's.

Response: The County agrees with the comment and will explore the suggestion. The plans include text that the County will look into developing watershed action teams.

III. The Plans Are Strong in Certain Key Respects.

We take this opportunity to recognize the strongest elements of the plans, and to commend the County and its partners at Tetra Tech for their work.

In particular, the watershed assessments and the descriptions of the County's ongoing programs are very comprehensive. These sections of the plans could serve as a model for other jurisdictions working on similar planning efforts. They also provide a considerable amount of information that will be a helpful reference for interested citizens and other stakeholders who want to learn more about stormwater pollution in the County and how their taxes and fees are being used to address the problem.

We support the decision to calculate past load reductions only from those best management practices (BMPs) that were implemented after the water samples used to develop the relevant TMDLs were collected. This decision ensures that BMPs that were already removing pollutants from the watershed at the time of TMDL development are not credited inappropriately. However, we also note that it is important for the County to account for BMP maintenance. The plans and the technical memo are not clear on the question of whether the maintenance and ongoing proper function of all post-TMDL BMPs was a factor in the calculations of the current loads. We urge the County to verify that maintenance was considered, and to provide confirmation of this fact in the final versions of the plans.

Response: MDE and the County require that all BMPs have regular inspection and maintenance performed and are required to submit confirmation data to MDE. Thus, all BMPs are considered to be in good working order.

To the extent that the County has monitoring data that can shed light on the accuracy of the modeled baseline (current) loadings, we urge the County to include that information in the final plans as well. By way of comparison, we refer to Appendix E of the District Department of

⁴ See, e.g., Baltimore County Department of Environmental Protection and Sustainability, *Baltimore County TMDL Implementation Plan: Sediment in Gwynns Falls* at 11-2 (Nov. 2014), available at <http://resources.baltimorecountymd.gov/Documents/Environment/tmdl/2014/ipgftssdraftfinal.pdf> (hereinafter "Gwynns Falls Sediment TMDL Plan").

Environment’s TMDL baseline analysis, which evaluates past monitoring results in the context of determining whether any progress has been made to date toward attaining WLAs.⁵

Response: Thank you for your comment. The County will consider this when it revisits the restoration plans as part of its adaptive management program.

Finally, we strongly support the decision to use ESD practices as the sole form of new structural BMP to be implemented by the County under the plans. Decades of research have shown that ESD (or “green infrastructure”) practices perform consistently and reliably to reduce pollutant concentrations and loads.⁶ ESD can often provide more benefits at lesser cost than single-purpose gray infrastructure based on ponds and pipes. Numerous studies have documented the cost savings that can be achieved by using a green approach to stormwater management.⁷ Importantly, these practices provide myriad benefits for the County’s waters and its residents that traditional stormwater controls do not offer. Vegetation-based ESD practices use plants to filter pollution out of the air, improving respiratory health.⁸ They reduce the urban heat island effect, keeping built areas cooler during the summer, a benefit that will become increasingly valuable as the climate continues to change.⁹ By reducing local temperatures and shading building surfaces, ESD practices lessen the cooling and heating demand for buildings, reducing energy needs.¹⁰ They create wildlife habitat and recreation space. Importantly, they create construction and on-going maintenance jobs, and using them can increase property values, benefiting both developers and homeowners.¹¹ We are encouraged by the County’s decision to use ESD as its sole type of BMP, as it provides us with confidence that the County is truly committed to a greener and healthier future.

Response: Thank you for your comment. The County agrees that using ESD practices will help achieve sustainable results.

IV. Certain Components of the Plans Should Be Improved.

⁵ DDOE, *Consolidated TMDL Implementation Plan – Draft Comprehensive Baseline Analysis – Appendix E – Review of MS4 Outfall Monitoring and Water Quality Conditions to Assess MS4 WLAs and TMDLs* (Aug. 2014), available at http://dcstormwaterplan.org/wp-content/uploads/AppE_MS4Review_DraftFinalCBA_0924_2014.pdf.

⁶ See U.S. EPA, “Green Infrastructure – Performance,”

http://water.epa.gov/infrastructure/greeninfrastructure/gi_performance.cfm.

⁷ See U.S. EPA, “Green Infrastructure – Cost-Benefit Resources,”

http://water.epa.gov/infrastructure/greeninfrastructure/gi_costbenefits.cfm.

⁸ See U.S. EPA, “Green Infrastructure – Why Green Infrastructure?,”

http://water.epa.gov/infrastructure/greeninfrastructure/gi_why.cfm.

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*; see also NRDC, *The Green Edge: How Commercial Property Investment in Green Infrastructure Creates Value* (Dec. 2013), available at <http://www.nrdc.org/water/files/commercial-value-green-infrastructure-report.pdf>.

While some sections of the plans are strong, creating a solid foundation for our understanding of current conditions and our vision for the County's green future, other sections dedicated to the details of the County's implementation strategy should be improved in order to create a truly robust roadmap for future efforts and to meet MS4 permit requirements.

A. The County Must Correct the Erroneous Wasteload Allocations in the Plans.

The purpose of these restoration plans is to develop a strategy for meeting the County's wasteload allocations. The MS4 permit requires the plans to explain how and when WLAs will be achieved.¹² In light of this fundamental objective, we are very concerned by the fact that the WLAs contained in the plans are incorrect. The County must revise the plans so they contain the correct, EPA-approved wasteload allocations. If the County does not do so, the plans will violate the MS4 permit, which states: "By regulation at 40 C.F.R. § 122.44, BMPs and programs implemented pursuant to this permit must be consistent with applicable WLAs developed under EPA-approved TMDLs."¹³

Table 3-3 purports to set forth all of the wasteload allocations that the County must attain through implementation of the plans. However, the WLAs in this table are erroneous and do not match the wasteload allocations contained in the original TMDL documents. For example, in the Anacostia plan, Table 3-3 states that the nitrogen WLA is 53,462 pounds per year, when according to MDE's wasteload allocation database, the Anacostia nitrogen WLA for the County is actually 51,442 pounds per year.¹⁴ The WLAs for the other pollutants are also incorrect: the table shows a phosphorus WLA of 8,467 pounds per year, a TSS WLA of 2,180 tons per year, and a BOD WLA of 483,763 pounds per year, when these figures should actually be 6,966 pounds per year, 1,898 tons per year, and 466,485 pounds per year, respectively.¹⁵

The County's technical memo explains how these incorrect WLAs were included in the plans.¹⁶ According to that memo, the County used MDE's TMDL database to attain its wasteload allocation information, which includes both the actual WLAs as well as the percent by which the County would need to reduce its pollutant loadings in order to attain the WLAs. These percent reductions displayed on the MDE website are based on an estimate of the County's pollutant loadings *at the time of TMDL development*. Then, the County calculated updated estimates of its *current* pollutant loadings, using land use and other data, to account for development that has occurred since the TMDLs were developed. But instead of determining the new percent reductions needed to achieve the WLAs from the current pollutant loading level, the County did the opposite: it applied the old percent reductions to come up with revised wasteload allocations. (The plans themselves also confirm that this is

¹² MS4 Permit at IV.E.2.b.

¹³ *Id.* at IV.E.

¹⁴ MDE, "TMDL Data Center," <http://wlat.mde.state.md.us/ByMS4.aspx>.

¹⁵ *Id.*

¹⁶ Technical Memo at 1.

what the County did – they refer to using the percent reductions from the TMDLs to arrive at “the resulting WLA.”¹⁷) The technical memo provides the following illustration of the County’s process:

For instance, if the baseline condition was 100 pounds per day of a pollutant and the TMDL called for 50 pounds per day, then a 50 percent reduction would be needed on the basis of the TMDL. In the restoration plan calculations, if the same watershed was calculated to have 125 pounds per day as a baseline load, then the TMDL value would be 62.5 pounds per day because of the 50 percent reduction.¹⁸

This description does not comport with the way TMDLs and wasteload allocations function as a legal and scientific matter. A TMDL represents the maximum pollutant loading that a water body can handle and still meet water quality standards. In other words, it is a pollution cap based on the assimilative capacity of the water body. The Clean Water Act states that TMDLs are “established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety...”¹⁹ A wasteload allocation, in turn, is the portion of this loading cap that is allocated to a particular discharger, such as the County’s MS4. Federal regulations define a wasteload allocation as “[t]he portion of a receiving water’s loading capacity that is allocated to one of its existing or future point sources of pollution.”²⁰ As described by EPA guidance:

The objective of a TMDL is to determine the loading capacity of the water body and to allocate that load among different pollutant sources so that the appropriate control actions can be taken and water quality standards achieved. ... All contributing sources of the pollutants (point and nonpoint sources) are identified, and they are allocated a portion of the allowable load that usually requires a reduction in their pollution discharge in order to help solve the problem.²¹

A TMDL, including its wasteload allocations, cannot be changed unless a revised TMDL is submitted to and approved by EPA.²² Absent this process, wasteload allocations are immutable. Regardless of the current pollution discharges from the County’s MS4 – whether they increase or decrease – the wasteload allocation, the ultimate target, stays the same. The percent reductions expressed in MDE’s TMDL database are only an expression of the reductions it would take to get from the *original TMDL baseline* to the WLA. If the County’s current loadings differ from that original baseline, then the percent reduction needed to attain the WLA will also be different. The County’s legal obligation is to reduce its pollutant loadings to the absolute loading level expressed in the wasteload allocation, *not* to reduce its loadings by the

¹⁷ Anacostia Plan at 29.

¹⁸ Technical Memo at 1.

¹⁹ 33 U.S.C. § 1313(d)(1)(C).

²⁰ 40 C.F.R. § 130.2(h).

²¹ EPA, “What is a TMDL?”, <http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/overviewoftmdl.cfm>.

²² 33 U.S.C. § 1313(d)(2); *see also* EPA, “TMDLs – EPA and State Responsibilities,” <http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/dec4.cfm>.

percentage that was calculated back when the TMDL was developed. It is unlawful for the County to apply that percentage to its new loading analysis and create a “new WLA.” The amount of pollution that the water body can handle (e.g., 50 pounds, in the example described in the County’s technical memo) has not changed simply because the County has increased its loadings in the time since the TMDL was finalized.

The following hypothetical scenario illustrates this point. Suppose that the original documents for a certain TMDL determined that the County’s baseline loadings were 100 pounds, and that the County’s wasteload allocation is 75 pounds, requiring a 25% reduction. Later, the County analyzes its current loadings and finds that in the years since the TMDL’s adoption, the County’s loadings have dropped to 70 pounds (e.g., through the use of new BMPs), and the WLA has been attained. Under this scenario, it would make absolutely no sense for the County to conclude that it still needs to reduce its loadings by 25%. This is because the percent reduction expressed in the TMDL is not the requirement that applies to the County. The requirement is to attain the objective pollution discharge load that is expressed in the form of the wasteload allocation.

It seems from the technical memo that the County believes that MDE guidance condones its approach. Reviewing the MDE guidance document cited in the technical memo, it is clear that the guidance nowhere authorizes the County to revise its own wasteload allocations.²³ Even if the guidance *did* authorize such action, the guidance would be illegal, because it cannot override the federal and state laws governing TMDLs.

In fact, separate MDE guidance confirms that the County’s approach is not appropriate when current loading estimates differ from the original TMDL’s baseline loadings: “In general, the year in which the monitoring data were gathered to support the TMDL should be used as the year to establish stormwater baseline loads. This becomes the starting point where compliance with the targeted load reductions will be measured. Local stormwater program and restoration efforts implemented after the baseline year, along with the associated pollutant load reductions, can then be measured against the stormwater WLAs to determine if

²³The guidance states: “Since local jurisdictions have the option to use scientifically defensible LULC data, loading rates, and modeling techniques different than those applied within the TMDL, the baseline load modeled by the local jurisdiction will often differ from the baseline load within the TMDL, which would result in varying levels of effort. However, the reduction percentages required from the baseline conditions to achieve water quality standards should not vary among models. Therefore, it is recommended that local jurisdictions demonstrate their progress towards achieving SWWLAs by comparing reduction percentages rather than absolute loads.” Note that this language refers to *demonstrating progress towards achieving WLAs, not revising the WLAs themselves*. MDE, “General Guidance for Developing a Stormwater Wasteload Allocation (SW-WLA) Implementation Plan” at 6 (Oct. 2014), available at http://www.mde.state.md.us/programs/Water/TMDL/DataCenter/Documents/General_Implementation_Plan_Guidance_clean.pdf.

benchmarks are being met.”²⁴ In other words, the County can measure its progress from the new loading estimate, but its ultimate reduction target (the WLA) remains the same.

The County must replace the incorrect wasteload allocations in its plans with the correct ones, as reflected in the original TMDL documents, and must recalculate the reductions needed to attain those WLAs, taking into account the fact that current loadings differ from the TMDL estimated baseline loadings. These reductions should be expressed as both percentages and absolute load reductions. The County must further revise all of the other calculations that appear throughout the plans to reflect the new (correct) pollution reduction targets.

Because attaining wasteload allocations is the reason the County is developing these plans in the first place, it is absolutely essential that the plans contain the correct wasteload allocations. The inclusion of erroneous WLAs is a fundamental legal error and must be remedied before the plans are finalized. If the County does not correct this mistake, the plans will violate the terms of the MS4 permit, and MDE will not be able to approve them.

Response: DoE contacted MDE in September to verify that our TMDL restoration calculation methodology was following their guidance. We received an affirmative response. Following the receipt of this comment, we again contacted MDE. Their response reaffirmed our approach. MDE stated:

Prince George’s County Department of the Environment (DoE) states that they used MDE’s document, *General Guidance for Developing a Stormwater Wasteload Allocation Implementation Plan* (May 2014), to develop their implementation plans. MDE supports the use of this method and believes that any implementation plans that follow this methodology and which make scientifically-defensible and technically-sound assumptions will be deemed to be consistent with the TMDL.

MDE does not support changing WLAs outside of the TMDL, but it appears that this was not the intent of DoE. Rather than making a change to the WLA, it seems that DoE used a method to convert a target load from one model—the *TMDL model*—to another—the *implementation model*. This was done with the understanding that the level-of-effort (LOE), or load reduction percentage, put forth to meet Water Quality Standards (WQSs) would be the same between models, as described in MDE’s General Guidance.

Implicit in this approach is that the loads reductions from the implementation model could be converted back into TMDL model-compatible loads to measure attainment of the official WLA. This is the correct technical method for comparing load reductions among water quality models, since absolute loads can vary between models, but LOE

²⁴ MDE, “Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated” at 10 (Aug. 2014), available at <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/NPDES%20MS4%20Guidance%20August%2018%202014.pdf>.

remains constant. If this is not already stated clearly, DoE should change the language in their document to indicate that the official WLA is not being changed.

DoE will modify the language in the TMDL restoration plans and technical memorandum to better reflect our approach.

B. The Plans Should Provide More Information About Calculating Reductions from Programmatic Activities, and Activities Whose Reductions Are Not Accurately Quantifiable Should Not Be Included in the Plans.

Programmatic activities are a central component of the County’s strategy for achieving pollution reductions and attaining WLAs. Consequently, it is very important for stakeholders to understand the methodology that the County used to estimate the reductions that can be achieved through these activities. We must be able to evaluate the basis for the County’s assertion that these activities can achieve such a large percentage of the needed pollution cuts. As currently drafted, the plans and the associated technical memo are not sufficiently transparent about how these calculations were done.

The reductions the County expects to gain from programmatic activities are listed in Table 6-3. (Note: all page, table, and figure numbers referenced in these comments refer to the planning document for the Anacostia watershed; our comments should be considered equally applicable to all analogous text, tables, and figures in the plans for the other watersheds in the County.) It is difficult to understand how the County arrived at some of these reduction estimates given other statements – and omissions – made elsewhere in the plans.

For example, Table 4-3 does not provide removal efficiencies for all of the proposed nonstructural approaches. The plans state in several places that the acreage to be treated using various programs has not yet been estimated.²⁵ Similarly, according to the plans, the County’s level of effort for several programs has not yet been estimated.²⁶ While the plans project estimated adoption rates for some, though not all, programmatic activities, the plans do not explain how the County arrived at these figures or provide the calculations for translating them

²⁵ See, e.g., Anacostia Plan at 68 (“The acreage that will be treated using this program [Rain Check] has not yet been estimated”), 69 (“The acreage that will be treated using this program [Green/Complete Streets] has not yet been estimated”).

²⁶ See, e.g., *id.* at 71 (“An effort is currently underway to develop a pet waste outreach campaign. When developing the campaign strategy, the County will determine exactly what methods and materials will be used to reach target audiences about proper disposal of pet waste.”).

into anticipated load reductions.²⁷ The technical memo provides some additional information, but does not completely explain the calculations for each activity.²⁸

Response: Table 4-3 presents removal efficiencies from structural and on-the-ground BMPs, not non-structural activities. Reductions from pet waste and other campaigns are included in the technical memorandum as well as how as these assumptions are made. DoE will review the technical memorandum for clarity and revise as necessary.

The County recognizes the inherent difficulties and challenges related to programmatic “outreach” activities. This is emphasized by MDE also, in the County’s MS4 permit requiring measurable outcomes. On this topic, much remains to be addressed during implementation.

The planning documents developed by the District of Columbia note that two specific types of information are needed in order to quantify load reduction impacts from non-structural programmatic activities. First, one must have information about a quantitative aspect of the practice (for example, the number of lane-miles swept using street sweeping, the number of public outreach sessions conducted, or the number of stream miles restored). Second, one must have a method for linking the quantifiable aspect of the practice to a specific pollutant load reduction (for example, a unit load reduction per lane-mile swept, or a unit load reduction per stream mile restored).²⁹

We assume that the County must have these two pieces of information for each of the programmatic activities whose reductions are estimated in Table 6-3; otherwise, it would not have been able to arrive at those estimates in the first place. But this information is not included for each activity in the plans themselves or in the technical memo. The technical memo does provide both pieces of information for tree canopy installation (number of trees to be planted, and pollutant reductions per 100 trees planted).³⁰ But it only provides one piece of information for lawn care management (providing removal efficiencies for lawn management efforts, but not estimated success rates for lawn care education programs).³¹ And it provides neither piece of information for pet waste programs (neither the adoption rate for such a program nor the pollution reduction effectiveness of the program).³²

²⁷ See *id.* at 75 (“For the restoration plan, it was assumed that there will be an 80 percent compliance rate [with pet waste education measures] in the NEB and NWB watersheds and an 85 percent compliance rate in the Lower Beaverdam and Tidal Anacostia River portions of the watershed”), 76 (“It is assumed that a 65 percent adoption rate of such programs [household and commercial waste disposal] will be obtained in the Anacostia River watershed”).

²⁸ Technical Memo at 50-51.

²⁹ DDOE, *Consolidated TMDL Implementation Plan – Draft Comprehensive Baseline Analysis – Appendix F – BMPs and BMP Implementation* at 33 (Aug. 2014), available at http://dcstormwaterplan.org/wp-content/uploads/AppF_BMPImplementation_DraftFinalCBA_0924_2014.pdf.

³⁰ Technical Memo at 50.

³¹ *Id.*

³² *Id.* at 51. The technical memo contains general references to the percentage effectiveness of a pet waste adoption program, and to the percentage adoption of the program, but does not state what they are.

The County must include both pieces of information for each activity in the final versions of the plans, or in an updated technical appendix, for the sake of transparency and so that the basis for the estimates can be understood and independently evaluated. This information is necessary in order to understand statements like the one on page 77 that pet waste campaigns can be expected to achieve half of the needed bacteria reductions. The kind of description presented in the District of Columbia's BMP appendix would be helpful to see in the County's plans.³³

If, however, the County does *not* have either of the two pieces of quantitative information described above for any programmatic activity, that activity should not be included as a component of the County's strategy, at least until the requisite information has been gathered. For example, the District of Columbia has decided not to include pet waste programs in its TMDL implementation model because it does not have information about a quantitative aspect of the practice: it is not currently tracking dog waste bag usage.³⁴ And it decided to leave out public outreach and education as well, as no accurate removal efficiency is available for those programs: "there is no established mathematical relationship between attending an outreach session and reducing pollutant load."³⁵

Like the District, the County should not include any non-quantifiable activities in its plans. We recognize that the County's plans state that unquantifiable activities were omitted (such as storm drain stenciling and litter control), but we are concerned about the inclusion of programmatic activities for which a "quantitative aspect of the practice," like acres treated, has not yet been estimated, as discussed above.

Including this type of quantitative information in the plans, and rejecting strategies whose reductions cannot be accurately quantified, is central to stakeholders' ability to have confidence in the plans. We must have some idea of the expected reductions from each type of activity that is included in the plans so that we can assess the County's proposed level of effort before the fact, and verify what the County has achieved after the fact. With regard to the latter point, accurate quantification after the fact is necessary from a permit compliance standpoint, as well as fundamental to the County's planned adaptive management approach. Stakeholders, the County, and MDE need to know whether targets have been met and whether adjustments need to occur to ensure that future goals are also achieved. This is not possible without a reasonably precise way of estimating the reductions achieved through programmatic measures.

In sum, we ask the County to provide its underlying data, assumptions, and calculations for *all* programmatic activity reductions, and to omit activities whose reductions are not accurately quantifiable from its implementation strategy.

³³ *See id.* at 32-50.

³⁴ *Id.* at

³⁵ *Id.* at 33.

Response: DoE will include additional information on calculations in the restoration plans in the technical memorandum. Some of the requested numbers are already in the restoration plans. The County will make it easier for readers to find the information.

The County has chosen a different strategy than the District of Columbia. It should be noted that other Maryland counties have included these types of programs. To that end, MDE has guidance for Phase I counties to use when looking at different programmatic activities for stormwater pollution reduction.

The County strongly disagrees with removing from the plans those programs (such as outreach and education) for which pollution reduction targets are difficult to estimate. In doing so, it would appear that these programs do not have merit in improving the County's water bodies, thus risking essential funding to these programs. The County's MS4 permit has requirements for both public outreach and public involvement in stormwater pollution prevention. The County feels that every citizen has a role to play in watershed restoration by taking steps, small or large, to cumulatively help improve local water quality. The Anacostia River watershed has high percent reductions for all parameters. BMPs alone will not meet these load reduction goals. If programmatic activities were not included in the plans, the plans would not meet its reduction goals.

In regard to pet waste, it should be noted that Appendix F of the District of Columbia's TMDL Implementation Plan (to which you referred) describes the literature review they conducted regarding the pollutant removal effectiveness of pet waste education programs. Based on their literature, they looked into the possibility of including pet waste removal BMP in their IP Modeling Tool along with other non-structural BMPs such as street sweeping. As stated in their document, "Recent research has focused on estimating behavior changes in people using dog parks – primarily in estimating the increase in people who pick up after their pets if they use dog parks, and the corresponding decrease in pet waste that is available to be washed into receiving waters. *These behavior changes and the corresponding decreases in pet waste that can enter receiving waters can be quantified to determine load reduction [emphasis added].*" The DC plan also provides a calculation to quantify pet waste reductions from pet waste bag usage. The District decided that they currently did not have in place any established mechanism to count bags used or replenish bags at their dog parks. They did leave open the possibility that it might be possible to track load reductions from pet waste pickup in the future if bag usage is tracked and reported. If that was to happen then then the number of bags used per park could be used in their IP Modeling Tool. The County has chosen to develop and conduct a pet waste outreach campaign. One of the objectives of the campaign will be to increase the amount and use of pet waste bag dispensers throughout the County. In doing so, the County will also work toward a consistent method of counting bags used and replenishing bags on a regular basis so that load reductions can be estimated.

C. The Plans Should Explain More Clearly How Reduction Goals Were Allocated Among Strategies.

In Table 6-3, the plans allocate the pollution reductions needed to meet WLAs among strategy types – dry pond retrofits, ESD practices, and various programmatic activities. Table 6-2 further allocates the reductions assigned to ESD practices among different land uses – public right-of-way, institutional land, commercial/industrial land, and residential land.

It would be very helpful to readers of the plans if they included a clearer explanation of the process by which these allocations were made. The current draft plans explain the process in general terms: “After programmatic initiatives were applied, the general approach in the strategy development was to first upgrade dry ponds (which have a low pollution-reduction efficiency), then install ESD BMPs on public ROW and public areas... If additional load reduction is needed, the plan suggests that the County form partnerships with other entities...to install BMPs on private land.”³⁶ And further: “Proposed BMPs and their associated load reductions and impervious area treated were subtracted from the necessary load reductions. This was first done for ROW, then institutional land, followed by commercial and industrial land, and lastly residential land.”³⁷ The technical memo phrases the process slightly differently:

[T]he restoration evaluation procedure calls for maximizing ESDs in County ROW as much as possible...If load reduction gaps still exist after implementing BMPs on roads/ROWs, then the next step is to determine if institutional properties...could help to fill the remaining gap. Likewise, impervious areas from commercial/industrial land uses and residential properties are included if a load reduction gap remained. If a load gap still remained after residential properties were considered, the evaluation returned to public ROW land uses to increase the amount of impervious treated area beyond what had been previously selected. In this manner, the loop was followed systematically with the amount of BMPs implemented being increased at each step until the WLA was met and no load reduction gap remained.³⁸

We request that the County provide more detail about this allocation process. Specifically, we hope the County can explain whether opportunities in each strategy were completely exhausted before turning to the next strategy on the priority list. The description in the plans and the technical memo are contradictory on this point. The passage from the technical memo quoted above suggests initially that opportunities were “maxed out” in each category before moving on to the next (the procedure “calls for maximizing” BMPs in the ROW “as much as possible”), but the description of the “loop” process later in the quote indicates otherwise; if opportunities were maximized in the ROW as much as possible in the first place, it would not make sense for the evaluation to return to the ROW to increase the amount of area treated even further.

³⁶ Anacostia Plan at 73.

³⁷ *Id.* at 74

³⁸ Technical Memo at 55-56.

Stating the question differently, referring again to Table 6-2: did the County estimate that it could achieve *at most* 29,601 pounds of nitrogen reductions on right-of-way land in the Anacostia before it turned its attention to the next land use category in the list (institutional)? If 29,601 pounds is not the maximum amount the County deemed achievable, how was the decision made to set the reduction goal at that quantity? We request that the final draft of the plans provide additional clarity about the allocation process.

This request is important to stakeholders because we want to ensure that the County has truly maximized its opportunities in the easiest-to-achieve strategies (the “low-hanging fruit”) before assigning reductions to harder-to-achieve strategies. As discussed in more detail below, the plans for almost every watershed allocate the majority of ESD practice reductions to BMPs on private land, over which the County has no direct control. And out of the ESD reductions assigned to private land, in the Anacostia watershed, the majority are designated for residential property, which is the most difficult land use category to regulate or otherwise fold into implementation efforts. For this reason, it is crucial to verify that the County exhausted all its other options before assigning such significant pollution reductions to these challenging strategies.

Response: The text will be reviewed and revised as to explain the process. Explanation is included in Section 5.1.1. An appendix will be added to show the impervious area and load reduction per subwatershed along with additional information for each land use. The County agrees that it has no control over private land, however treating only county-owned land will not meet load reduction goals.

D. The County Should Strengthen the Plans’ Strategy for Achieving Reductions on Private Property and Consider Whether New Policies Are Needed to Implement the Strategy.

As mentioned in the previous section of these comments, most of the plans call for the greatest amount of ESD implementation on private property – specifically, residential properties (in the Anacostia) and commercial/industrial properties (in the Mattawoman and Upper Patuxent). Yet the County has no right of access to install BMPs on these properties, as it recognizes in the plans,³⁹ and no regulatory mechanisms currently in place to require private landowners to retrofit their properties themselves.

Response: The required load reductions are too great to be met with just right-of-way lands and institutional land, so there will need to be implementation on private land. Although more acres of impervious land must be treated on residential land than public land, it should be noted that the amount of residential land in comparison with other land is much larger.

³⁹ See, e.g., *id.* at 57.

We are concerned that the plans currently lack a clear strategy for getting ESD practices implemented on private land, as they provide little information about how the County intends to turn its expectations into reality. (The technical memo provides no information at all on this subject.) In the section of the plans discussing BMP implementation on commercial, industrial, and residential property, two existing County programs are mentioned as options to incentivize BMP installation on those sites. The first is the Rain Check Rebate and Grant Program, through which the County provides reductions on a landowner's stormwater fee if ESD practices are installed. The other is the Alternative Compliance program, which also provides stormwater fee reductions in exchange for an easement allowing the County to install ESD practices on sites owned by nonprofit organizations. The plans also mention the possibility of the County partnering with apartment and condominium communities to implement BMPs in common areas, but it seems from the discussion in the text that this program does not yet exist.

Response: The County will pursue opportunities to partner with multi-family residential communities using knowledge gained from its current programs on partnering with private entities.

The plans do not provide an estimate of how many acres each individual program will treat, how many BMPs it will implement, or how much pollution it will reduce. The Anacostia plan states that current funding allows up to 1,500 single family properties or up to 150 other properties to receive Rain Check rebates, but it does not indicate whether a maximum participation rate is realistic to expect, or the impact of BMP implementation at 1,500 homes in terms of acreage or pollution outcomes – especially given that the same discussion states that the acreage treated using this program has not yet been estimated.⁴⁰ It also does not address the fact that the County Council recently passed a bill that doubles the maximum allowable rebate per residential property, which could effectively halve the number of properties participating in the program.⁴¹

The plans do include some estimates of expected outcomes from the Alternative Compliance program: up to 35 acres per year could be treated through the program.⁴² But this estimate is based on an assumption (that the County will install BMPs on 10% of the eligible sites annually – each requiring the County to obtain easements and institutional maintenance agreements – that is not fully explained. In particular, it is unclear whether institutions will commit to the needed level of maintenance, which is estimated in Table 6-6 to cost \$1,286 per year, at the institution's own expense. Also, 35 acres, while an important step in the right direction, is also a fairly small land area compared to the several hundred acres that the County needs to treat annually, according to Table 6-10. The plans do not

⁴⁰ *Id.* at 68; *see also id.* at 76 (stating that the County does not yet have any data on the Rain Check program).

⁴¹ CB-86-2014; *see also* Transportation, Housing and the Environment Committee Report for CB-26-2014 (Oct. 16, 2014).

⁴² Anacostia Plan at 69.

provide any estimates at all regarding the expected outcomes of the apartment/condominium partnership idea that is mentioned as another potential strategy.

Response: The restoration plans will be updated with the new Rain Check Rebate and Tree ReLeaf Grant Program information. This program can treat up to the stated amount, but the actual amount is dependent on public participation in the program. While the County hopes that the public participation will max out the funded amount, the program is in its infancy and only 40 properties have used the program to date.

In certain cases, it is true that property owners may not welcome the maintenance responsibilities of installed practices. If economically conducive, in such cases the County will install BMPs in the ROW while treating the same impervious area.

The 35 acres annual goal for the Alternative Compliance Program was arrived at by dividing the overall target of 500 acres by the restoration plan timeline of 15 years. This value is an estimate and will be revised once more information on the program's success is known.

Because estimates are not provided for most of the individual programs, the plans consequently also do not provide documentation about how all of the programs mentioned will work together in combination to meet WLA reduction goals. The pollution reductions called for in Table 6-2, in this context, seem more like a problem statement of what needs to be achieved rather than an estimate of what can actually be achieved. This is most true of the residential land use category, which seems to have been used as a catch-all category after the other land use opportunities were exhausted. (We recognize that the County may have a better idea of what can be achieved on other land use types, but it is unclear from the discussion of the allocation process, as discussed above.)

We want the County to be positioned for success. With that goal in mind, we urge the County to take a hard look at the section of the plans dealing with ESD implementation on private property and actually map out how it will achieve the needed reductions. The plans recognize that the County will need to use outreach, education, standards, ordinances, and grants in order to get private landowners to install ESD practices.⁴³ That is certainly true, but the plans stop short of identifying exactly *how* the County will use those tools to meet its targets. This planning process is the opportunity to undergo that exercise and formulate a more detailed strategy.

The County needs to ask questions like the following: How many BMPs can we install, and how many acres can we treat and pollutants can we reduce, using a given policy? What happens if we structure that policy in different ways and make its requirements more or less demanding, or its incentives greater or lesser? What level of BMP implementation does that produce? Once the County has the answers to these questions, it can start doing the math to

⁴³*Id.* at 52.

determine which policies need to be adopted and how they need to be structured in order for them, in combination, to achieve the County's reduction goals.

To be clear, we are *not* asking the County to commit to using specific BMP types or implementing BMPs at specific site locations in these plans. The County is correct when it states that commitments at that level of granularity overly constrain the County's efforts and eliminate needed flexibility. Rather, we urge the County to provide more information about how its policies and programs can reasonably be expected to result in the implementation of enough BMPs on private land to treat the necessary number of acres and reduce the target amount of pollutants.

For example, the County may find that the Rain Check program at the current funding level is not sufficient to result in BMP implementation on residential property sufficient to meet the goals set forth in the plans.⁴⁴ This finding might lead the County to consider dedicating more funding to the program so that it can achieve more results, and/or adopting additional policies to make up the shortfall. The same analysis can be done for the Alternative Compliance program on institutional property – how much can be achieved at the current funding level, and if the anticipated results are not sufficient, how can the County increase the funding or effort it puts into the program? The problem with the current draft of the plans is that they do not tell us whether the Rain Check or Alternative Compliance programs will do enough to meet the goals of the plan. The last thing that stakeholders want is for the County to rely on one or two programs exclusively, only to find out years later that they did not produce the needed results. This is why the planning must be done upfront.

Response: The County plans on conducting biennial reviews of each program to assess progress and make necessary adjustments. Additional text will be added to the restoration plans to reflect this. Calculation of the impervious area that needs to be treated was a necessary first step in the restoration process. There are several new programs aimed at restoring the County's water bodies. The County is not focusing only on the two programs listed. The P3 program and the County CIP program will be two of the largest programs that will be used to implement practices to treat impervious areas. Most of these programs are new and data on them will be developed as they come into full operation. The restoration efforts on public lands will take several years that will likely provide key lessons learned that will help the County develop the most effective strategies for watershed improvements on private property. The County and MDE also meet annually to discuss permit issues where deficiencies/ improvements to the plans are discussed.

⁴⁴ We express no opinion on whether or not this is actually the case. However, by way of comparison, the analogous Washington, DC RiverSmart Rewards program has, over the past year, resulted in the implementation of BMPs at 81 properties, significantly fewer than the 1,500 homes or 150 other properties the County's plans mention in connection with the Rain Check program. (Information on RiverSmart Rewards program results was obtained via email from Matthew Espie, DDOE, Nov. 21, 2014.)

Given the limited number of options laid out in the plans for addressing private property, and the chance that the County’s existing incentive-based programs may have limited impact, we recommend that the County move forward with planning for new policies that can achieve the remainder of the needed reductions. We present two regulatory options and one voluntary initiative.

First, the County could consider asking MDE to exercise its “residual designation authority” to require large privately-owned developments in the County to control their runoff pollution. The Clean Water Act provides that if a stormwater discharge, or category of discharges, is a significant contributor of pollutants or is causing or contributing to a violation of water quality standards, EPA or a state can “designate” the discharge(s) as requiring a discharge permit.⁴⁵ It would not be difficult for MDE to make the requisite factual showing that impervious surfaces on large private developments in the County are significant contributors of pollutants and/or are contributing to violations of water quality standards in the Anacostia and other water bodies. Once this showing is made, MDE – with input from the County – can issue a general permit that would grant these sites the authority to continue discharging into the County’s rivers and streams, as long as they take steps to reduce their pollution. This approach has been used in several watersheds in New England, with good results.⁴⁶ It is a very effective strategy because it is a mechanism that directly addresses the existing development that is causing water quality problems in the County. We would be happy to discuss this option with you further if the County is interested in pursuing it.

A second regulatory option would be to work with the Prince George’s County Council to strengthen the County’s stormwater management requirements for redevelopment projects. The current baseline load estimates in the plans include loadings from sites in the County that are already developed. The redevelopment of these sites is an opportunity to require the installment of stormwater controls there and to reduce loadings beyond the current level. The fact that the County’s regulations set a lower stormwater management standard for redevelopment sites than for new development sites passes up this opportunity and misses the chance to make a large dent in the County’s pollution loadings from private property. We urge the County to explore the option of working with the Council to bring requirements for redevelopment up to the same level as what is required of new development.

The County essentially rules out the exercise of its regulatory authority by stating in the plans, “Without forming partnerships and being granted access, the County will only be able to install BMPs on property it has direct access to, such as ROW or on County

⁴⁵ See 33 U.S.C. §§ 1342(p)(2)(E), (p)(6); 40 C.F.R. §§ 122.26(a)(1)(v), (a)(9)(i)(D), (f)(2).

⁴⁶ See, e.g., U.S. EPA Region I, Charles River Residual Designation,

<http://www.epa.gov/region1/npdes/charlesriver/>; Vermont Department of Environmental Conservation, Residual Designation of Five Watersheds, http://www.watershedmanagement.vt.gov/stormwater/hwm/sw_RDA.htm; Maine Department of Environmental Protection/U.S. EPA Region I, Long Creek Residual Designation, https://www1.maine.gov/dep/water/wd/long_creek/index.html.

government-owned land.”⁴⁷ While it is true that the County cannot *itself* implement BMPs on private property without permission, the County should not dismiss the option of using policy and regulations to require the private sites causing the most pollution to take action on their own – at least until the County has shown using reliable modeling estimates that the County’s own programs can achieve all necessary reductions on private land. The current draft of the plans do not make this showing.

There are also additional non-regulatory, voluntary options that the County could consider to boost BMP implementation on private property. For example, the County could incentivize voluntary BMP installation through a partnership effort with landscaping companies. The County could recruit landscaping firms to act as messengers to private landowners about the benefits of retrofitting homes and office buildings with ESD practices. The messages could take the form of information passed from landscapers to clients about potential Rain Check rebates for which they could become eligible if they retrofit (with the retrofits to be performed by the landscaper). This outreach would help to supplement the ongoing education efforts by DOE and its partners. Alternatively, landscaping firms could advocate for ESD retrofits outside of the Rain Check context (given that Rain Check rebate funding is limited) by urging homeowners to sign up for installation of lower-cost ESD practices, like rain gardens and swales, for reasons that could include reduction of stormwater fees, property beautification, or even simply a sense of environmental stewardship. The landscaping firms would benefit from this partnership because it would increase their business and expand their market share. It would also allow them to brand themselves as green, watershed-friendly companies. The County is already seeking to expand the number of companies with this expertise and experience, both through incentives in its new P3 program and through partnerships to offer courses at Prince George’s Community College. We would be excited to explore this option with the County if there is interest in pursuing it.

Ultimately, we want these plans to be as effective as possible so that the County is positioned for success. An effective plan is one that lays out a roadmap establishing the combination of programs and policies, along with details about the level of implementation, that will be sufficient to take the County “over the finish line.” Right now, the plans do not live up to their potential as planning tools. We urge the County to make the effort now, when it is most useful, of developing a strategy for BMP implementation on private land.

Response: Thank you for your ideas and suggestions. We will take them in to consideration during future review of the restoration plans.

E. The County Should Include More Detail in the Plans’ Implementation Schedules.

The implementation schedules in the plans are important for the County from a planning perspective, allowing it to budget, allocate resources, and the like. They are also

⁴⁷Anacostia Plan at 91.

important for MDE and citizens, because they allow observers to determine whether the County is staying on track to meet its final deadlines. The fact that the restoration plans – including the schedules – are enforceable is what allows stakeholders to hold the County accountable for progress. Thus, we must ensure that the schedules make sense and provide enough detail to function as both planning tools and accountability mechanisms.

First, the plans do not adequately justify the proposed final WLA attainment date of 2030. As an initial matter, the plans currently state that this deadline pertains to plan implementation; the plans must be revised to make clear that the deadline pertains to *WLA attainment*, in accordance with the MS4 permit.⁴⁸ With regard to the deadline itself, federal regulations require that compliance schedules, such as these restoration plans, provide for attainment by the soonest possible date.⁴⁹ The County is already required to take all implementation measures for the Chesapeake Bay TMDL by 2025, in accordance with the TMDL documents and Maryland’s watershed implementation plans (WIPs). The plans do not explain why an additional five years are needed to implement the County’s local TMDLs, given that the actions taken to reduce the Bay TMDL pollutants will also reduce loadings of other TMDL pollutants at the same time. Moreover, the County’s public-private partnership is intended to substantially accelerate implementation of stormwater retrofits. We encourage the County to accelerate implementation across *all* programs, and to demonstrate leadership by pushing for attainment as expeditiously as possible. In light of these circumstances, the County must provide a justification for 2030 as the soonest possible attainment date. Because the plans do not currently provide this justification, we believe that the ultimate date for compliance should align with the Chesapeake Bay TMDL deadline of 2025.

Response: The 2030 end date was developed using realistic estimates of the number of acres of impervious area that could be treated each year. These restoration plans call for a large amount of BMP implementation in existing communities, which can create conflicts and limit the pace at which the restoration can be accomplished. Faster implementation would require more resources sooner. This would include more staff to manage the P3 Program, a greater number of available construction firms, more staff to track progress, and so forth.

The County has the ability to raise Clean Water Act fees, however raising them has the potential to put unnecessary burden on lower income residents and on small business, thus preventing economic growth. With economic growth comes the opportunity for additional funding. Without economic growth funding could be shifted to lessen the burden of lower income residents and small businesses, thus reducing funding. It is a delicate balancing act. There are also delays in implementation through the permitting process. Additional staff at the local and state level would be needed to review and approve BMP plans and permits. Most, if

⁴⁸ MS4 Permit at IV.E.2.b.i (“As part of the restoration plans, Prince George’s County shall: Include the final date for *meeting applicable WLAs*”) (emphasis added).

⁴⁹ 40 C.F.R. § 122.47(a)(1).

not all, local jurisdictions will be implementing their restoration plans in a similar timeframe. This means that costs could increase due to supply and demand of construction firms that will need to install BMPs from all local plans. Spreading out implementation will lessen the burden on these limited number of firms.

The longer timeline will also allow for more time to perform adaptive management if practices and initiatives are not working as planned. If the County proposed to meet the restoration load reduction targets by 2025, then the County would be held liable to that date, which is likely not realistic.

The other major component of the implementation schedules that the County must improve is the interim milestones. The number of acres to be treated each year is a useful metric, but it is not sufficient on its own, for two reasons.

First, the plans have not specifically connected pollutant reductions to acres treated. The plans state that the County has done these calculations in its model (although the technical memo does not provide any additional information on the subject).⁵⁰ Therefore, we believe that the County has the capacity to add pollutant reduction milestones into Table 6-10 alongside the acreage milestones. By comparison, Baltimore County has integrated pollutant reduction milestones into its draft plans.⁵¹ Doing the same in Prince George's would improve the transparency and clarity of the plans. It would allow citizens to track not only what actions the County is taking, but also the results its actions are achieving in terms of water quality improvements. It would also establish a link between the milestones and the County's monitoring results, which will take the form of pollutant loadings; citizens and MDE must be able to compare the monitoring results to the proposed milestones. The plans state, "To evaluate whether interim milestones have been achieved, expected load reductions from implementation progress will be compared to monitoring results and the tracking database."⁵² But the plans do not explain how this comparison will be done if the milestones are expressed exclusively as acres.

Including pollutant reductions as milestones is also important in the context of the plans' reliance on programmatic activities. For many of those activities, the plans do not express the expected outcomes in terms of acres treated, only pollution reduced, so it is impossible to tell from the face of the plans how the proposed acreage milestones relate to anticipated implementation of programmatic activities over time. Without this information, MDE and other stakeholders will not be able to determine whether the County has achieved its milestone in any given year. (In the event that we have misunderstood the purpose of Table 6-

⁵⁰ Anacostia Plan at 52.

⁵¹ See Gwynns Falls Sediment TMDL Plan at 9-4 (incorporating pollutant reductions and BIBI scores as interim milestones); Baltimore County Department of Environmental Protection and Sustainability, *Baltimore County TMDL Implementation Plan: Bacteria in Herring Run* at 9-2 (Nov. 2014), available at <http://resources.baltimorecountymd.gov/Documents/Environment/tmdl/2014/ipbrbdraftfinal.pdf> (incorporating mean bacteria densities as interim milestones).

⁵² *Id.* at 103.

10, and its schedule only addresses BMP implementation, which correlates directly to acres treated, please mention this fact explicitly in the plans.) We acknowledge the County’s desire to retain flexibility, but it would also be helpful if the plans were to include an estimate of how the acreage milestones will be achieved on different land uses in each year.

Second, the milestones included in the plans are not detailed enough to meet the requirements of the County’s MS4 permit. That permit requires the plans to: “Include the final date for meeting applicable WLAs and a detailed schedule for implementing all structural and nonstructural water quality improvement projects, enhanced stormwater management programs, and alternative stormwater control initiatives necessary for meeting applicable WLAs.”⁵³ The plans do include final dates and a schedule of the number of acres to be treated each year, as discussed above. The plans also include a chart (Table 6-11) that establishes a “target timeline” for watershed restoration strategies. However, the current draft of this timeline is not “a detailed schedule” as currently presented, as it does not provide concrete information about which actions will be taken when. For example, the table indicates that “BMP implementation” will be ongoing every year between now and 2030, but provides no further details. We ask the County to flesh out this timeline and include a schedule for the implementation of *specific* programs and initiatives.

Again, we acknowledge the County’s stated goal of preserving flexibility. We understand the importance of this objective to the County’s adaptive management approach. Yet there is a balance to be struck between the plans’ flexibility, on the one hand, and their effectiveness and enforceability, on the other. Some specific actions must be proposed on a specific timeline so that the County can be held accountable for achieving progress. These specific proposals can be modified in the future if conditions change – this type of modification is inherent in the concept of adaptive management. (Indeed, the plans state that the County will reevaluate them during the next permit cycle.⁵⁴) “Flexibility” does not necessarily require the schedule to be vague and noncommittal from the outset. We urge the County to embrace this opportunity to set a timeline for specific actions that can guide its progress over the coming years.

Response: Table 6-10 does indicate the impervious area expected to be treated yearly. Programmatic initiatives—such as outreach and education or street sweeping—will be ongoing, like indicated in Table 6-11. A new table with the estimated load reduction pounds per year will be added between existing tables 6-10 and 6-11. The pounds reduced depends on several factors such as land use and BMP type. Therefore, the values will be estimates. The County will also modify the existing Table 6-11 to include additional information.

F. The County Should Clarify Certain Aspects of the Cost Estimates.

⁵³MS4 Permit § IV.E.2.b.i.

⁵⁴ Anacostia Plan at 104.

We commend the County for estimating the costs of TMDL implementation so that it can plan its budget, resources, and staff time accordingly. Cost information is also important for public transparency, as it allows citizens to understand how their taxes and fees are being used to restore their watersheds. The cost information presented in the plans would achieve these purposes better if it were clarified in a few ways.

First, the section of the plans discussing the costs of right-of-way BMPs⁵⁵ does not mention the County's recently-approved public private partnership (P3), which, as discussed elsewhere in the plans, will be used to install many BMPs in the County's ROW. It is unclear whether the costs discussed in that section are related to the terms of the County's contract with its P3 contractor, or whether they otherwise result from the total compensation authorized by the County Council in connection with the P3 initiative. The County should explain how the P3 affects the cost estimates presented in this discussion.

Second, the same discussion also states that the costs for different types of BMPs were weighted to arrive at a final "average" BMP cost.⁵⁶ In the section relating to the County's right-of-way, the plans state that 20% can be treated with impervious disconnection credit, 30% with swales and bioswales, 40% with vegetated open channels, and 25% with permeable pavement. Similar statements are made with regard to the other land use areas where BMPs will be implemented. For example, the plans state that residential land use could be treated with 25% rooftop disconnection, 10% non-rooftop disconnection, 20% bioswales, 40% rain gardens, and 5% permeable pavement.⁵⁷ We request that the County explain how it arrived at these percentages. The text implies that they are based on how much area is susceptible to treatment by a given BMP, but it does not explain how the plans addressed situations where an area could potentially be treated by different types of BMPs equally well. Was the lower-cost BMP chosen? Or were these percentages based instead on data showing the average frequency of use to date in the County and beyond? We ask the County to explain the reasoning behind the BMP breakdowns so that we can better understand the overall expected costs.

Response: Our cost estimate is based on the BMP type that will be used regardless of who does the work. The BMP contract had not been signed or approved by the County Council at the time that the Draft Restoration Plan was prepared and at this time we have limited data on what the performance of the P3 contract will provide, although the County has high expectations for this approach.

The percentages of which BMP type could be used were based on professional judgment and retrofit experience for the past 15 years. As the work gets underway and actual restoration data is obtained the assumptions will be reviewed and updated to match the

⁵⁵ *Id.* at 82.

⁵⁶ *Id.*

⁵⁷ *Id.* at 83.

County's experience. In general, BMP selection progressed from the lowest cost BMPs through a range of BMP types and costs to match our current experience in this type of work.

Finally, the plans present the costs of implementing BMPs on private property, as if the County would be incurring these costs directly.⁵⁸ However, this is not always going to be the case. The plans state that the Rain Check program will be used to incentivize BMP retrofits on private land; under that program, the County pays up to \$4,000 per residential property, and the private landowner pays for the balance of the retrofits. The cost to the County of these rebates is capped by legislation at \$3 million per year. The County's only other cost is decreased revenue under the stormwater fee. (The costs to manage and implement the Rain Check program are discussed in a different section, in the programmatic activities category.⁵⁹) The regulatory options described above also would not require the County to bear the full (or any) costs of BMP implementation. There is only one strategy clearly outlined in the plan (the Alternative Compliance program) that results in the County itself installing BMPs on private (institutional) land. There are no strategies laid out in the plans that result in the County installing BMPs on industrial, commercial, or residential land. Given these facts, how do the costs of implementing BMPs on private land relate to the total costs *to the County* of ESD implementation presented in section 6.2.3? We request that the County more thoroughly explain the reasoning behind including these costs in the plans.

Response: Section 6.2.3 lays out the projected overall cost for BMP installation, not just costs to the County. If private entities take an active role in implementation, the overall cost for the County will be reduced. (The commenter notes that there will be a cost associated with decreased Clean Water Act fees from rebates. The County performs annual analyses to see if the fee structure should increase, decrease, remain the same, or if other changes are needed for the next fiscal year.)

While no specific strategies for installing BMPs on private land are mentioned in the plans, one strategy available to the County is its CIP Program, which has a Participation Project category. Under this, property owners can participate with the County and perform restoration projects to achieve mutual goals.

G. The Plans Should Provide More Information About How Monitoring Data Will Be Used.

The County's MS4 permit states: "Assessment of controls is critical for determining the effectiveness of the NPDES stormwater management program and progress toward improving water quality. The County shall use chemical, biological, and physical monitoring to assess watershed restoration efforts, document BMP effectiveness, or calibrate water quality models

⁵⁸ *Id.* at 82-83.

⁵⁹ *Id.* at 80.

for showing progress toward meeting any applicable WLAs developed under EPA approved TMDLs identified above.”⁶⁰

The draft plans describe two monitoring approaches. One is biological monitoring that “reflects cumulative characteristics of stream ecosystem conditions.”⁶¹ The section on biological monitoring states that it will be “routine” and “countywide” (but focused in areas of rapid BMP implementation through the P3 program), and that the results will help to identify “sources of stressors where additional BMP or green infrastructure would be beneficial.”⁶² It seems like this information will help the County “assess watershed restoration efforts,” per the terms of the permit, at least in general terms (is stream health improving or declining?). It also seems logical that it will aid in adaptive management by suggesting areas in which to focus BMP implementation. We accept these conclusions but request that the County provide more detail about the specific uses to which the biological monitoring results will be put.

The other approach described in the plans is chemical monitoring. The plans state that one priority subwatershed will be monitored eight times per year and list chemical constituents that will be tested for in samples, along with flow measurements.⁶³ We understand that these chemical constituents are indicators for the relevant WLA pollutants for the County. However, the plans provide no information about how the chemical monitoring results will be used to achieve the goals set forth in the MS4 permit, or for any other purpose. The plans should explain how the data will be used to track progress toward meeting wasteload allocations. Will the results be used to calibrate models? To assess the attainment of interim milestones? To compare against applicable water quality criteria? We ask the County to explain what will be done with the data from these monitoring efforts.

As many of our groups have done previously in our comments to MDE on the MS4 permit, we take this opportunity to stress again the importance of monitoring in more than one watershed. Indeed, the County’s own comments to MDE incorporated and endorsed our groups’ suggested permit language that would have required the development of a more comprehensive and representative monitoring program.⁶⁴ The County’s public support for a statistically significant monitoring effort indicates that such a program is practicable. Even if the County does not have the resources to sample every subwatershed in the jurisdiction, monitoring a subset consisting of a few different watersheds would be far superior to sampling one. A broader monitoring effort would help to capture some of the variability in the County’s land cover and other factors affecting water quality. However, if the County persists in its plan

⁶⁰ MS4 Permit at IV.F.

⁶¹ Anacostia Plan at 99.

⁶² *Id.* at 100.

⁶³ *Id.* at 101.

⁶⁴ Letter from Adam Ortiz, PGDOE Acting Director (now Director), to Ray Bahr, MDE Stormwater Program Division Chief (June 27, 2013), *available at* <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/PG%20County%20Comments.pdf>.

to monitor only one subwatershed, we agree that it makes sense to ask MDE to move the location from the location specified in the MS4 permit (Bear Branch) to a high-priority watershed where the County will actually be doing implementation work.

In this vein, it is critical for the plans to explain how the County plans to extrapolate results for all of the watersheds in the County from the single monitored subwatershed. As mentioned, the County's subwatersheds are variable in a number of ways. How will the County account for these differences? Moreover, the County proposes to monitor in a subwatershed with a high level of BMP implementation. How will these results be applied in other watersheds where levels of implementation are lower? The County cannot assume the same degree of pollution reduction is occurring in other locations where fewer implementation measures have been taken. We ask the County to explain the process by which it will interpret its limited monitoring results in the context of the jurisdiction at large.

We cannot overstate the importance of the County's monitoring results. They allow MDE, the County, and stakeholders to assess progress, and perhaps even more importantly, they are absolutely critical to the adaptive management process. Adaptive management is only effective and legitimate when it is based on real, meaningful feedback on the performance of ongoing programs. The County can only adjust its efforts if it understands the effect they are having on water quality. The plans recognize this when they state that adaptive management will be based on testing, monitoring, and assessing.⁶⁵ The County must therefore structure its monitoring program very carefully and have a clear picture of how it will interpret and apply the results.

Response: The County will use the monitoring data to assess the overall load reductions from upstream activities in a watershed with a large amount of planned activity. The data will also be reviewed to assess trends. Was improvement gradual? Or did loadings significantly decrease in one year? What were the practices installed in the previous year and how do they relate to load reductions in the stream? There is natural variability in stream water quality. Looking into smaller watersheds with less amounts of implementation activities, could make it difficult to separate improvements from natural variability. By looking at a watershed with larger scale implementation, the improvements as a direct result of implementation should be more easily identified. The County can look at the observed load reductions in the stream and compare them to the projected load reductions from WTM and make adjustments accordingly. These adjustments would not only be for the monitored watershed, but applied countywide in the restoration plans. Adjustments could take the form of additional BMPs, using different types of BMPs, or adding more education and outreach.

V. Moving Forward, the County Must Be Transparent About All Attempts to Reduce Its Implementation Commitments.

⁶⁵ Anacostia Plan at 102.

In several sections, the plans mention that the County would like to identify rural roadways that can be “credited and removed from the County’s total untreated impervious area,” essentially by counting them as already being treated because the runoff drains to pervious areas.⁶⁶ According to the plans, “This program does not create additional load reductions, but it does reduce the number of impervious acres where treatment for nutrients and sediment are [sic] required by reflecting that the acres are already treated by features that approximate ESD.”⁶⁷ In other words, this program would reduce the number of acres that the County would be required to treat under the plans.

We recognize that this “crediting” program makes sense if the runoff from these areas is indeed draining to pervious surface that approximates ESD treatment. After all, there is no reason for the County to spend resources treating areas that do not need it. We simply ask that the County be completely transparent as it moves through this process. Stakeholders must be confident that the crediting and removal of these acres from the program is justified, and that the remaining acreage obligation will be sufficient for the County to meet its WLAs. Specifically, we request that the County share with the public: (a) the names and locations of any roads that are credited under this program, and (b) the information on which it has based its decision to remove these roads from the untreated area total (i.e., its decision to consider the roads “treated”).

Response: The text will be changed to better reflect the programs goals. DPW&T’s effort to identify roadways that can be considered as treated is a separate program and only affects the number of untreated impervious acres reported to MDE as part of the County’s MS4 annual report. DPW&T has been working with MDE on the protocols for the County to consider the impervious area treated and scope of this project. This number *only* affects the amount of impervious area needed to be treated by its 20 percent treatment requirement in the permit.

These impervious acres do not affect the amount of land needed to be treated to meet TMDL restoration goals. It is assumed that the same conditions were present at the time of TMDL development, thus were considered in TMDL development. During DPW&T’s exercise to identify these roadways, they will also be looking for opportunities for BMP installations that can be counted towards restoration goals. Again, this program *does not* decrease the County’s implementation commitments under these restoration plans by identifying areas that could be considered treated, but the program might help identify areas for new BMP installation that can be credited to these restoration plans.

VI. Conclusion

⁶⁶ *Id.* at 35.

⁶⁷ *Id.* at 35-36.

Thank you for considering these comments. We have offered them with constructive intentions, in the hopes of putting the County in a strong position as it moves into the implementation phase of the TMDL attainment process. Please do not hesitate to contact us with any questions. We look forward to working with DOE in the future to protect and restore clean water in Prince George's County.

Sincerely,



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Comments from Audubon Naturalist Society and Natural Resources Defense Council

Comments on the Draft Technical Memorandum: Development of Prince George's County Local TMDL Restoration Plans using WTM.

Diane Cameron for Audubon Naturalist Society and the Natural Resources Defense Council December 1, 2014

Memo of June 30, 2014 to Jerry Maldonado, Prince George's Department of the Environment, from Bill Lucas (EcoSite); Mark Sievers and Mike Clar (Tetrattech).

Summary

Prince George's County and its contractors have at our request shared this key technical document that explains the methodology, assumptions and model choices for the development of the watershed restoration – TMDL plans required by the county's MS-4 permit. The methodology by which new pollutant loading targets are calculated is seriously flawed, and must be revised to reflect the fact that baseline loadings but not target loadings (Wasteload Allocations) may be adjusted by the permittee. Other aspects of this document are critiqued, with strengths, weaknesses, and requests for clarification noted in several areas. These include the Pollutant Loading Methodology and the need to address stormwater volume and velocity.

Detailed Comments

1. The technical memorandum uses a seriously flawed methodology, which results in erroneous substitute Wasteload Allocations (WLAs, in other words, pollutant loading targets). This methodology is contrary to the requirements of the Clean Water Act, because it proposes to substitute the permittee's own target WLAs - which are not based on meeting in-stream Water Quality Standards - in place of EPA-approved WLAs. This alternative methodology also violates MDE and EPA rules and procedures governing implementation of TMDLs.
 - a. The flawed methodology assumes that the permittee – in this case, Prince George's County -- can change the baseline loadings for a given pollutant subject to a TMDL Wasteload Allocation (WLA), then apply the same percentage reduction for that WLA that is in the approved TMDL document to that newly-revised baseline loading, and thus derive a new target WLA. While science-based revisions to the baseline loadings are allowed according to MDE rules, revisions to the Wasteload Allocation are not allowed. The WLA is the target loading that permittees are supposed to meet in order to bring a given impaired waterbody into use support (fishable, swimmable, etc.) and Water Quality Standards attainment.

Here's the excerpt from this document: Page one, paragraph one:

This technical memorandum discusses the methodology used to develop the loading computations used in the subwatershed (SWS) analyses. In our original proposal, Tetra Tech suggested using area weighting to determine the County's portion of the waste load allocations (WLAs). However, on the basis of guidance posted on MDE's *TMDL Data Center* website,¹ Tetra Tech and Ecosite have developed a methodology that will build on previous work done for the County by both firms and will provide a more realistic breakdown of loads that will help in the restoration planning process, as discussed in this technical memorandum. The MDE guidance provides technical recommendations for calculating updated load estimates using specific land use and other data. The guidance allows the County to use its own data and loads, so long as the percent reduction between the baseline loads and the allocations are kept the same (MDE 2014a). Baseline conditions represent the impaired conditions that the watershed was under during TMDL development. The percent reduction of pollutants is based on those values to achieve the applicable water quality standards in specific water bodies. For instance, if the baseline condition was 100 pounds per day of a pollutant and the TMDL called for 50 pounds per day, then a 50 percent reduction would be needed on the basis of the TMDL. In the restoration plan calculations, if the same watershed was calculated to have 125 pounds per day as a baseline load, then the TMDL value would be 62.5 pounds per day because of the 50 percent reduction.

This assumption is wrong based for the following reasons:

- 1) Once a WLA is approved by EPA via its approval of a TMDL document, that WLA remains in place and cannot be altered at will by a permittee (or anyone) unless they go through EPA's process:

"The waste load allocations are EPA-approved and can't be changed unless there is a re-evaluation that is submitted and approved by EPA. The County will need to show progress toward meeting any EPA-approved stormwater WLA. The twenty percent restoration requirement is an EPA-approved effluent limit in MDE's permits." (Email from Ray Bahr, MDE, to Rebecca Hammer, NRDC, 11/25/2014).
- 2) Although a permittee may revise baseline loadings in order to refine and make more accurate the original baseline loadings published for a given TMDL, that does not allow the permittee to change the WLA. The percentage reduction figure published in a given TMDL is only the calculation needed to get from the baseline- the pollution loadings at present that are causing the ambient impairment – and the Wasteload Allocation, which is the lower loadings number based on the scientific assessment of what's needed to attain the use support and meet the Water Quality Criteria for that use designation for that waterbody.
- 3) In other words, there is nothing "fixed" or determinative about the "percentage reduction of pollutants" that is included in the approved TMDL document. What *is* fixed and determinative in the approved TMDL documents is the Wasteload Allocation. So, if the permittee alters the baseline loadings based on new or finer-grained information, they must then recalculate the percentage loading reductions that are required to meet the WLA – which is fixed.
- 4) This document does not appear to lay out a justification for this exercise of completely recalculating the runoff loadings, instead of simply using the assumptions, methods, and loading numbers used by MDE in its Anacostia TMDL documents. We are therefore unclear as to the need for this separate, intricate, and complex set of substitute calculations.

Clarifying the need for this exercise would help the public to understand why it was undertaken.

Response: DoE contacted MDE in September to verify our TMDL restoration calculation methodology was following their guidance. We received an affirmative response. Following the receipt of this comment, we again contacted MDE. Their response reaffirmed our approach. MDE stated:

Prince George's County Department of the Environment (DoE) states that they used MDE's document, *General Guidance for Developing a Stormwater Wasteload Allocation Implementation Plan* (May 2014), to develop their implementation plans. MDE supports the use of this method and believes that any implementation plans that follow this methodology and which make scientifically-defensible and technically-sound assumptions will be deemed to be consistent with the TMDL.

MDE does not support changing WLAs outside of the TMDL, but it appears that this was not the intent of DoE. Rather than making a change to the WLA, it seems that DoE used a method to convert a target load from one model—the *TMDL model*—to another—the *implementation model*. This was done with the understanding that the level-of-effort (LOE), or load reduction percentage, put forth to meet Water Quality Standards (WQSs) would be the same between models, as described in MDE's General Guidance.

Implicit in this approach is that the loads reductions from the implementation model could be converted back into TMDL model-compatible loads to measure attainment of the official WLA. This is the correct technical method for comparing load reductions among water quality models, since absolute loads can vary between models, but LOE remains constant. If this is not already stated clearly, DoE should change the language in their document to indicate that the official WLA is not being changed.

DoE will modify the language in the TMDL restoration plans and technical memorandum to better reflect our approach.

2. Assignment of priorities for subwatersheds and retrofit strategy.

The memo states on page 2 that "BMPs were first assigned to retrofit all existing dry ponds, and then county owned rights of way." After delineating the planned sequence of retrofits according to land use category, it then states that a uniform pollutant removal efficiency is assumed, but with differing costs.

The land cover analysis appears to have been done in a thorough manner that appears to have produced a reasonably accurate picture of imperviousness and turf areas – the two types of urban land covers that generate significant runoff. There are roughly 45,000 acres of imperviousness and about double that – close to 90,000 acres of turf – estimated in this analysis for the County as a whole.

Response: No response necessary.

3. Piscataway runoff analysis

We disagree with the broad-sweeping classification of all urban pervious-turf areas as “disconnected.” Turf should not be treated as fully disconnected. In our observations, there are many turf areas in poor condition (compacted, insufficient vegetation, poor landscaping practices) that deliver runoff directly to the street and thus into storm drains and thus into local streams and rivers including the Anacostia. It’s inaccurate to classify all pervious areas as “disconnected” from the storm drain discharge system. For instance, in Table 4, page 7, the “Disconnected” areas for Piscataway Creek Watershed in its entirety are assigned 0.66 inches - less than 1 inch - of surface runoff per year. Out of roughly 42” of total precipitation per year, the model assigns less than 2% to surface runoff from turf areas. We need to see ground-truth data to confirm this, as it runs counter to our knowledge of how compacted urban and suburban turf-grass areas “handle” precipitation.

Response: This comment misinterprets the meaning of the term disconnected. Disconnection only applies to impervious areas such as roofs, which flow over adjacent turf areas. The calibrated SWMM model for the Piscataway Creek showed most such runoff was interflow, not overland. Otherwise, the hydrographs would not match. Only a portion of turf was allocated as disconnected for this analysis.

The authors go on to state that when they combine shallow subsurface runoff – sometimes called interflow – with the surface runoff for the Piscataway Creek Watershed, they come up with 8” of runoff, or total runoff depth comprising roughly 20% of annual precipitation.

Response: Watershed studies (Jordan et al. 1997) on hydrograph separation in 21 different Chesapeake Bay watersheds show that approximately 20 to 25 percent of precipitation is returned as baseflow, and 10 to 20 percent is stormflow, of which most is interflow.

Top of page 7: the proportion of disconnected runoff that is conveyed by subsurface flows is over 90 percent. This section also states that “...the partitioning results in roughly two-thirds of the total ‘runoff’ hydrograph being conveyed by subsurface pathways...Thus most of the watershed ‘runoff’ is actually conveyed by subsurface flows. This....tends to eliminate TSS, FC, and most of the TP and BOD.”

We question this set of assumptions, and would like to know whether the authors have done real-world checking of this model, through monitoring of runoff and stormwater flow partitioning in representative areas in Prince George’s County. We also request information comparing the model watershed (Piscataway) with similar-size subwatersheds in the Anacostia basin, to ensure that this is an apples-to-apples comparison. For instance, are the soil types, topography, and land cover breakdowns similar enough to warrant application of this model to the Anacostia? The information in this technical memo is not sufficient to enable the reader to make their own comparisons.

Response: The Piscataway Creek SWMM model discussed in the technical memorandum is a calibrated rainfall-runoff model as clearly stated in the memorandum. The Piscataway has slightly less impervious than some other watersheds, but the pervious responses are going to be similar, given that the average hydrologic soil group of B/C is typical across all watersheds. The more impervious the watershed, the less the model would be affected by interflow partitioning.

Many studies show that turf contributes pollutant loadings and runoff volumes much higher than natural areas. In DC, compacted cover (such as lawn/turf) is assigned a runoff coefficient of 0.25 when calculating a regulated site's retention obligation, as opposed to natural cover, which gets a runoff coefficient of 0. This is to account for the fact that compacted turf areas do generate more runoff than natural areas. See section 520.3(a) at the top of page 37: <http://ddoe.dc.gov/sites/default/files/dc/sites/ddoe/pagecontent/attachments/2013%20SW%20Rule.pdf>

Response: Please cite the studies you reference. Golf courses are the exception to this rule, and not only are they relatively minor area, their management techniques have improved. The majority of the literature (as summarized in Bierman et al. (2010) shows that typical lawn runoff is neither as highly enriched nor in as high a volume as is popularly conceived. While compacted ballfields are the exception to this rule, they do not make a large proportion of the County. Even though compacted turf typical to new homes will have more runoff, infiltration capacity tends to improve over time. Given the age of the housing, and that much of the turf is open fields, overland runoff volumes are negligible. Instead, "runoff" from turf areas is dominated by interflow, not overland flow.

4. Pollutant Loading Methodology

The first paragraph on page 8 states that "The study documented how runoff from impervious areas that flows over pervious surfaces is substantially reduced." We question the validity of this assumption when applied to the Anacostia and its many subwatersheds, which are in the most heavily urbanized portions of Prince George's County. In our observations, the ultra-urban, medium-density urban, and older suburban subwatersheds of the Anacostia are characterized by imperviousness that typically is directly connected to storm drains and thus to streams, and that does not flow into pervious areas.

Response: The GIS analysis went to considerable lengths to partition the connected from the disconnected. Any impervious within 500 feet of a storm drain was classified as connected. Only small roofs were considered disconnected, since direct manifolds to the street is unusual. The technical memorandum has further discussion in Section 5.2. The model explicitly accounts for connected overland runoff to address the increased imperviousness in the Anacostia River watershed.

Furthermore, many of the turf areas in the Anacostia portion of the county are compacted fill dirt that has little or no 'sponging' capacity. We lack the capacity to provide numeric, ground-truthed confirmation of these observations, so we are requesting that the consultants provide this information to ensure that these assumptions hold up under adequate ground-truthing.

Response: Bierman et al (2010) cite approximately 20 studies that show typical lawn runoff is neither as highly enriched nor in as high a volume as is popularly conceived. Compacted ballfields are the exception to this rule, but comprise a negligible proportion. While compacted turf typical to new homes will have more runoff, infiltration capacity tends to improve over time. Given the age of the housing stock, and that much of the turf is open fields, overland runoff volumes are negligible. Instead its "runoff" is interflow.

The HSG values were downgraded to account for compaction. The model was verified by both flow duration observations at the USGS stream gage and by geomorphic observations.

Annual Mean Concentrations on Page 9: We would like to see the source of these concentrations and to find out whether Prince George's has collected real-world stormwater monitoring data and compared that with the AMCs, in order to ensure accurate representation.

Response: AMCs were derived from the literature, and then slightly adjusted (calibrated) so that the WTM loads matched the MAST loads for TSS, and for the Anacostia TMDL for TN, TP, and BOD. Fecal coliform runoff AMCs were assigned based upon the sources cited, with adjustments used to address transport losses so that their resultant numbers matched the TMDL observations. The required adjustments are thus calibrated to the observations. The Watershed Existing Condition Reports (available on the TMDL Restoration Plan website) contain existing water quality data.

Regarding Total Suspended Solids: Since MDE's figure for the contribution of stream scour, based on runoff volume and velocity, to TSS loadings in the lower Anacostia is 75%, then if you are inaccurately estimating total runoff volumes, you will also be inaccurately underestimating total TSS loadings.

Response: Our method of calculating streambank erosion is based on MDE recommendations. The runoff volumes are not inaccurate. Please remember that overland runoff is not the same as the total storm response that includes interflow. All versions of WTM use simplifications, as did MDE when developing the proportion that you cited.

HSGs are Hydrologic Soil Groups. These have been critiqued by experts as inaccurately representing how real-world soils actually perform. (For instance, see: Fennessy and Hawkins, 2001: The NRCS Curve Number, a New Look at an Old Tool. *Proceedings of the 2001 Pennsylvania Stormwater Management Symposium*, Villanova University). We recognize that this task of modeling watershed performance and runoff baseline pollutant loadings requires that factors be applied to whole watersheds and subwatersheds and that on-the-ground data collection is more expensive.

Response: Fennessy and Hawkins noted that the HSG method of using $la=0.2S$, overestimated infiltration in the smaller storm events. As a result, the effective CN had to be higher to make the model correspond to observations. Refer to the Delaware Green Technology Manual (Lucas 2004) for more discussion on this. Most hydrologists, feel that la should be closer to 0.05S (Mishra et al. 2006), however that would require completely new revisions to the CN tables. As the CN method is quite accurate for larger events, this effort would be disruptive to a long entrenched regulatory approach. The method used in the calibrated Piscataway Creek SWMM model is the Green-Ampt. The CNs were converted into the Green-Ampt parameters that would produce the same amount of runoff, but more consistently than the CN method.

However, it's crucial that adequate ground truthing be done and that adequate data to contrast conditions in one watershed with those in another be applied. Since HSG soil groups are broad categories based upon a set of assumptions with questionable application to Prince George's County conditions, it's imperative that real-world soil permeability, compaction, and other tests be performed in the field in order to verify the HSG assumptions and assigned values.

Response: The reason for this detailed approach was to allow for more refined analysis during the implementation phase, when indeed the implications become markedly different between subwatersheds that might have similar impervious cover or land uses. Very few models are developed that use real-world soil permeability, compaction, and other tests specific to an area. This methodology that was precisely designed and verified for Prince George’s County. This methodology is actually more accurate and representative than a simple land use-based approach as originally proposed in the WTM 2013 model. While any method can be calibrated to the main watershed outlet, this method is much more accurate in highlighting where the real problem areas are.

Table 8 page 13

This table, based on a run of the Watershed Treatment Model (WTM), assigns 35.7 inches of precipitation as runoff per year, out of a total of 43 inches of precipitation. This amounts to 83% of incoming precipitation being converted to runoff that hits impervious areas, and fully 17% being held by those areas and not running off. This “surface ponding and evaporation” is considerably higher than we’ve seen in other studies. DC, however, gives impervious cover a 0.95 runoff coefficient (95% of precipitation running off the impervious cover) – see the same section of the DC regulations we referenced above.

Response: As noted previously, this value was derived from the calibrated SWMM model that matched streamflow observations for 1999, which included Hurricane Floyd. However, otherwise this was a dry year, so the percent evaporation was higher than normal. Lucas and Sample (2014) observed that evaporation for urban Richmond (87 percent impervious) was 8.9 percent in a normal year, and 7.5 percent in a wet year. We are not aware of any studies showing only 5 percent evaporation for areas with climates similar to Prince George’s County.

In addition, it appears that you may be comparing two different ideas. The C value that you cite for DC is a value used in the rational formula ($Q=CIA$), which is an old formula used for sizing sewers. This method produces peak discharge values but does not compute runoff volumes. MDE recommends use of the NRCS TR55 model, which uses the curve number approach (NRCS 1986). A CN value of 98 is used for impervious surfaces, such as parking lots, which produces 0.79 inches of runoff for a rainfall depth of 1 inch (Table 2.1, page 2.3 of TR 55 manual)⁶⁸. This result is closer to our estimate.

The basis for assigning higher surface ponding and evaporation, and thus lower runoff conversion, to impervious areas needs to be shown if it is to be credible. While the difference between the Prince George’s approach and DC’s approach is not by itself conclusive evidence that the former approach is wrong, it does raise questions, such that Prince George’s County and its consultants should bear the burden of proof to explain why it is operating under such substantially different assumptions.

Response: The sensitivity to this assumption is minor, since the AMCs were adjusted to match loads reported in TMDL reports and MAST. This is compensated for by a partitioning of runoff and interflow. If the overland runoff volume were increased by 5 percent, then the AMCs would be

⁶⁸ http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf

decreased commensurately to match observed loads. As such, adjusting this parameter will not result in any significant changes to computed loads.

Likewise, we request the basis (data sets, ground-truth reports, monitoring analyses) to justify the lower runoff and higher infiltration values and partitioning assigned to the majority of roofs and to the turf areas.

Response: The analysis was calibrated specifically to local soils and rainfall and successfully represented the resultant hydrologic response. Because of this, the analysis is more applicable to the current analysis than the typical “off-the-shelf” models such as the CN method, and is more preferable to the C-value model used in DC.

Table 11, page 18

This table confirms our prior comment that the vast majority of TSS loadings are from stream scour due to excessive runoff volumes and velocities, not from TSS that is entrained in runoff coming off of urban areas (though that contribution is not negligible and must be counted as well). This table shows that the WTM result under-estimated the sediment loading in the Anacostia MS-4 area, as reported in the MDE TMDL baseline loadings, by close to 800%.

Response: WTM is not a bank erosion model. It is a simple runoff model customized—specifically for Prince George’s County—to address the effect of interflow conveyance upon total calibrated loads delivered to streams. Its predictions were very close to the MAST edge-of-stream loads. As BMPs do not intercept bank erosion loads, this is appropriate. BMPs can reduce the erosive flows.

The table on page 19 shows that the WTM model is fairly consistent with the results of the MAST model while excluding streambank erosion. So as long as the effect of stormwater volume and velocity causing stream scour is fully incorporated elsewhere, this approach for estimating TSS may be accurate. (There does seem to be a pretty big discrepancy in the estimated TP loadings, though...) The problem is that it’s not entirely clear whether the county is including the additional TSS loadings that result from streambank erosion as part of its baseline load estimates. I.e., if the county is not including TSS from streambank scour in its baseline, then it’s assuming that its TSS loadings are a lot lower than they actually are. We need to make sure that all the TSS load contributions – including from streambank scour -are being included.

Response: The streambank loads are incorporated into watersheds with phosphorus or TSS TMDLs. This was done after the initial baseline load was calculated in WTM. The method used for calculating the streambank erosion was suggested by MDE.

Role of Stormwater Volume and Velocity

We also note that the Anacostia has been listed as impaired for aquatic life. This is based on the MD DNR MBSS monitoring reports that indicate a lack of biodiversity and lack of abundance of aquatic life indicators (fish and macroinvertebrates). This impairment of aquatic life has several causes but chief among them is the heavy stormwater flows- volumes and velocities – raging through the Anacostia tributaries that rips streambanks, tears down riparian trees, enlarges

stream channels, and scours and then deposits massive quantities of sand, silt, and rocks in the stream beds, smothering the aquatic life communities.

This report appears to omit mention of this problem of aquatic life impairment, probably because MDE has yet to address aquatic life impairment with a TMDL. (We admit that this is a challenging project but it's been done elsewhere around the country.) The best way to address this is to adequately address the problem of stormwater volume and velocity, including through adequately addressing the TSS TMDL WLA through stormwater volume reduction via large-scale ESD/Green retrofits.

Response: We concur that erosive forces and excess sediment are very detrimental to benthic macroinvertebrates. The way the TMDLs are established, the scope of this effort was almost entirely directed to runoff loads. Accurate computations of bank erosion loads is a very data demanding and computationally intensive task. The full scale implementation of BMPs in the Anacostia Watershed can be expected to significantly reduce stormwater volume and velocity as has been observed in other watersheds with a high percentage of impervious cover. For example, full scale BMP implementation with less than an inch of watershed storage in the 85 percent impervious watershed in Richmond Virginia showed flow durations over bankfull decreased by 91 percent from 99.3 to 9.2 hours. Total flow volume over bankfull decreased by 93 percent, with a 65 percent reduction in runoff volume (Lucas and Sample 2014).

In addition, the restoration plan includes a very substantial effort in stream restoration in Anacostia River watershed, which will help to address the existing impairment of aquatic life that you have identified.

Table 14, page 21

This table presents a comparison of MDE's Anacostia Sediment TMDL loading rates, with this study's loading rates, which the authors adjusted to account for streambank scour due to runoff volumes and velocities. The results comport with our expectations expressed above – namely that there are considerably greater TSS loadings when stream scour is accounted for.

Response: The County agrees with this comment.

5. Section 12 Fecal Coliform Source Load Computations and Source Area Controls pp. 22 – 47

This section reports on a wide array of fecal coliform sources and reduction approaches; it appears to be thorough in many respects and the focus on this particular TMDL is appropriate. One aspect that is short-shifted (again) is the role of stormwater volume and velocity. Stormwater volumes are the vehicle that carries fecal matter into the Anacostia, and also are the cause of sewer trunkline damage resulting in human fecal contamination due to sewer line leaks and breaks in stream channels and floodplains. This latter problem occurs when excessive stormwater volumes, crashing through streams, not only scour the banks, but alter the entire floodplain, exposing sewer trunk lines that were originally laid in the floodplain next to the stream, to the bombardment of boulders and shear stress of stormflows as the pipes are now brought into harm's way - the mainstem of the flow.

Response: These are the SSOs discussed in the technical memorandum. Because they are not conveyed in storm sewers, they are not legally attributed to the MS4 entities. WSSC currently has a

very active program to address any water and sewer lines near streams or in stream crossings that have become exposed. In addition, they are addressing the issue of leaking sewer lines.

The analysis of the fecal coliform sources and solutions needs to factor in this problem of excessive stormwater volumes and velocities – and thus the need to reduce them. For instance, on Table 36, Determination of Bacteria BMP Efficiencies, there is mention of “overland filtering systems” e.g. dry swales, but no mention of the use of enhanced riparian buffers as the last step in a longer treatment train. As the report rightly notes, bioretention systems have excellent bacteria removal efficiencies, but they are only as good as their design capacities allow, and the design capacities are often 1” of runoff, thus sending overflow in the larger storms. This problem can be addressed, at least in part, through designing landscape-level (small subwatershed scale) treatment trains that direct the overflow from bioretention units, into street right of way bioretention units, and then into enhanced riparian buffer areas that are designed with level spreaders, additional woody vegetation plantings, and compost and leaf-based soil amendments that increase the water retention capacity of upland, riparian and floodplain soils.

Response: We agree that fecal coliform source loads are affected by runoff conveyance, and we took considerable effort to partition loads by source composition, deposition pattern, and overland flow conveyance to the MS4 system. Once in the system, loads were additionally attenuated to account for sedimentation, die-off, and resuspension to match the identified TMDL loads. While attenuation would be higher under a vegetated conveyance system, endogenous sources (pets and wildlife) will limit the likely reductions.

There is a very considerable opportunity for riparian buffers to reduce loads. While some reductions would be due to filtering, most runoff is channelized by the time it reaches the riparian zone. The real benefit of riparian buffers is to keep pets and wildlife away from water bodies. The potential for this to assist in meeting the bacteria WLAs can be considerable.

Section 13 – WTM BMP Calculations

We note that the flow chart in figure 3 depicts use of Dry Pond Retrofits as the second-highest priority method for reducing runoff pollution, second in the sequence after programmatic initiatives. Based on our review of the literature we are skeptical that Dry Pond Retrofits will be effective in reducing stormwater volumes and loadings – unless they are gray-to-green conversions that involve the planting of trees and shrubs. Page 54 does describe this as conversions to bioretention units, so depending upon the details, this looks like it may suffice to be termed a green retrofit practice, with the potential to capture and infiltrate large stormwater volumes. We request further details about the procedures Prince George’s will use in making these dry pond to bioretention conversions.

Response: The anticipated dry pond conversions are precisely to convert them into ESD practices, which can include bioretention systems, submerged gravel wetlands and in some cases where the soils are suitable, infiltration basins. In addition, the ESD enhanced filter practice can be used to promote infiltration. Site-specific evaluations will be required to determine the appropriate ESD practice. In general, preference will be given to infiltration practices to optimize the pollutant removal performance.

We encourage you to include in your review the research reported by Dr. Bill Hunt of North Carolina State University. He is reporting that bioretention facilities with under drain discharge can approximate stream base flow. Closer to home, we encourage you to visit the work being done in Carroll County, where dry ponds are being upgraded using the enhance filter ESD practice.

6. Lawn care management

This section deals with the need to reduce fertilizer use on lawns. This is indeed a priority programmatic source control. The baywide turf management figures used here are not necessarily accurate when applied to Prince George's County. We encourage the authors to seek Prince George's specific data to plug in here and elsewhere in this program.

Beyond fertilizer reduction, there are ways to enhance the "sponginess" of turf- including through aeration, and through use of compost amendment carefully applied – that this section overlooks.

Response: We concur. As stated in the plans, the Chesapeake Bay Program expert panel guidance for urban fertilizer usage requires real-world fertilizer data in the future. If our estimates over-predict reductions, then additional BMPs will be added the plans through adaptive management to compensate. We can include ways to enhance the "sponginess" of turf in our lawn care outreach and education program, but these are not site specific BMPs. We welcome any input from the community as to what to include in these programs.

7. Tree Canopy Installation

We support inclusion of tree canopy projects as a solution to runoff pollution. The cost figures used here seem to be too high, and should be cross checked against the figures in this region from recent tree canopy efforts. There are many different kinds of tree canopy projects and their costs span a very wide range. We support tailoring this analysis into a finer-grained study of the potential for tree planting projects to increase the pollutant loading reductions and most importantly, the stormwater volume capture.

MDE's document, listing loading allocations for various practices, may not account for all of the water that is captured by the soil associated with a given tree or tree grove. This must be checked and accuracy in accounting for tree-soil units as stormwater management devices must be attained.

Response: We concur, and recommend tree planting as a restoration activity. However, there is not a lot of hard data on the hydrologic benefits and the current credit for pollution reduction removal is low compared to other restoration strategies. Currently, the County does not plan to fund a study, as we will need to focus on known reductions. However, we would welcome study results from other organizations.

8. Proposed BMP Calculations

This information in Table 39 is useful in showing how Prince George's County will allocate pollutant reductions based on retrofit practices and land use categories. We request clarification of the unit cost basis. The table as now shown, contains a column labeled "Cost Per Treated Unit," based on treating one inch of runoff. We presume that this is for a unit of "per impervious acre" with one inch of runoff, but since that is not stated, it's not clear.

Response: Thank you for the comment. The table headers in the technical memorandum and restoration plans will be updated accordingly.

Also, given our comments above concerning the contributions of compacted urban turf to runoff, we request further clarification for purposes of this section, as to how pervious area runoff loadings are accounted for when calculating removals based on various ESD practices.

Response: The County is aware of a report showing high runoff from newly constructed lawns on highly compacted subsoils in Ocean County, NJ (OCSCD 2013). However, this study is not representative of older lawns in less sandy soils, such as those in the County. Many other studies that show the opposite under typical lawn conditions in the Mid-Atlantic Region (e.g. Bierman et al. 2010). This will have little effect on loads, since WTM was calibrated to loads in the TMDL reports and MAST.

The sequencing of priority land use and source control categories appears to be logical in terms of what the lowest-hanging fruit is that should be retrofitted/ implemented first. However, until we see further details about how these controls are applied, and what the likely feasibility is of being able to apply sufficient controls in a given category, we cannot be certain that this approach will enable attainment of the WLAs within this timeframe – or even if there is a “fighting chance” of attaining this objective.

Response: No response necessary.

Response References

- Bierman, P. M. B. P. Horgan, C.J. Rosen, and A. B. Hollman. 2010. *Effects of Phosphorus Fertilization and Turfgrass Clipping Management on Phosphorus Runoff*. Final Report Submitted to the Minnesota Pollution Control Agency. St Paul, MN.
- Lucas, W.C. 2004. *Green Technology: The Delaware Urban Runoff Management Approach. A Technical Manual for Designing Nonstructural BMPs to Minimize Stormwater Impacts from Land Development*. Dover, DE.
http://www.dnrec.state.de.us/DNREC2000/Divisions/Soil/Stormwater/New/DURMM_Technical_Manual_01-04.pdf
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Comments from Anacostia Watershed Society

From: Dan Smith

Dear Mr. Lilantha Tennekoon,

In addition to the extensive comments submitted earlier today with the Natural Resources Defense Council and others, the Anacostia Watershed Society would also like to associate ourselves with the comments submitted on Nov. 27 by Mr. Jon Robinson, particularly those regarding the protection of forest land and natural areas and planting and maintaining trees.

Forested lands provide extensive benefits for water infiltration and quality and their loss cannot be easily overcome or mitigated. Programs to protect them should be described and enhanced. These lands should be meticulously tracked and mapped to better understand their long-term impact on clean water. It is admirable that trees will be included in many green infrastructure projects and BMPs.

The Anacostia Watershed Forest Management and Protection Strategy prepared by the MWCOG Department of Environmental Programs for the Anacostia Watershed Restoration Committee in June 2005 (including county professionals in the workgroup) has many findings and recommendations pertinent to the Watershed Protection Plan (http://anacostia.net/restoration/Reports_and_Data/Final_FMPS.pdf).

The Strategy recommends the protection of all of the larger remaining public and private mature hardwood forest tracts and restoration of tracts becoming degraded. Upland forest are also identified for protection and increase. And riparian buffers are recommended for stream and water quality protection to be 100 feet minimum on each bank, with 200 feet preferred (with an absolute minimum of 35 feet).

Forest lands (and we would add, wetlands) could be acquired in part using Program Open Space funds. It is certainly feasible for the county to include forest acquisition for water quality protection as a major priority for its Program Open Space fund expenditures. We fully recognize that forest acquisition does not come easily or quickly and cannot be relied upon for major short term strategies. However, every forest acre lost in the coming years will set back the restoration timetable and increase costs. That is our understanding. We would appreciate a discussion of this in the Plan and accountability and remediation measures.

Thank you for the opportunity to provide these and other comments and for the many strong elements of the draft plan.

Dan Smith

Response: Thank you for your comments. We will add reference to the *Anacostia Watershed Forest Management and Protection Strategy* to the previous studies section of the Anacostia River watershed restoration plan.

We will add text to the Adaptive Management section to recommend the County will explore other alternative restoration activities, such as land preservation, which can be a viable option for restoration activities.

Comments from Friends of Quincy Run Watershed

FQRW Testimony

PGC MS4 Permit (National Pollutant Discharge Elimination System) Public Hearing on Draft TMDL Restoration Plans

Wednesday, November 12, 2014 6:30 p.m. to 8:30 p.m.

Offices of the Department of the Environment 1801 McCormick Drive, Suite 140, Conference Room Largo, MD 20774

My name is Marian Dombroski. [Address retracted for public distribution of comments and responses.] District 5, 30 yr resident of Prince George's County.

Today I represent Friends of Quincy Run, a citizens group whose goals include engaging in activities which will contribute to the restoration of our watershed and health of its residents. We are here for a common purpose - to do our parts to realize our right to clean water. To make that happen, it is essential to coordinate efforts. Friends of Quincy Run are here tonight to pledge our support to the efforts of Prince George's County, and to ask to be accommodated in the plan presented tonight. Upon pouring through this and the related documents, a number of concerns arose.



1. We are alarmed at seeing construction of new projects immediately in need of retrofit. Appears that the County is chasing it's tail. Specifically DPW&T, MNCPPC - planning board, and SHA do not appear to be a good partners. Include plans to coordinate effort and/or educate staff

Response: DoE will work with other agencies, both within the county and outside, as to the contents of the restoration plans and share with them ways that they can help in implementation.

2. Provide us with tools to monitor progress and identify projects, plans, priorities in local sub-watershed. It would increase the public's confidence in the program in general, and different BMPs specifically if we can see they are successful. This is real EDUCATION AND OUTREACH. Please, no more county originated workshops and meetings, door to door surveys. Best way to educate public is to solve real problems in our neighborhoods and to involve us early in project selection.

Response: As part of its new permit conditions, the County will post its annual MS4 report on its website. This report will contain information on BMP implementation, public outreach events, and other County programs that will help meet TMDL goals. This will help inform the public as to progress made throughout the previous year. Additional text will be added to the restoration plans to describe this.

Workshops and meetings are just some of the tools the County uses to reach out and engage the public. While there is a contingent of County residents ad organizations that might already have a deep understanding of the County's stormwater issues, most workshops and meetings are targeted for the larger portion of the County residents that need more education and outreach to spur their involvement. In addition, part of the County's outreach goals includes working with members of the community who are already interested in or actively engaged in on-the-ground environmental improvement projects. The County welcomes any suggestions from the public regarding potential BMP types or locations. Please send any suggested locations to Mr. Lilantha Tennekoon at LTennekoon@co.pg.md.us. The BMPs identified by the Anacostia Watershed Restoration Partnership are still in the restoration *toolbox* of potential restoration activities and thus, they will be considered for implementation on a case-by-case basis as the restoration process moves into the implementation phase.

3. Do offer support to local efforts in the way of professional advice, information clearing house, and expert speakers service. Would be very helpful to have an org chart and process/flow charts to keep up with new programs and initiatives. Would also be helpful to have adequate time and notice to review reports and attend public hearings - and to really be heard - not just told what we are getting and how much we will like it.

Response: During the implementation of the restoration plans, the County will work closely with community leaders to ensure they participate in the selection of projects to improve water quality in their communities. The County will look into having regular meetings with interested parties such as watershed advisory groups. These meetings will be used to obtain feedback on the restoration strategies as well as obtain information on restoration opportunities.

4. First bone we have been thrown is that Non-profits can get rebate money in advance. Thanks. Citizens need to be heard regarding selection of candidate projects. BTW - What happened to candidate projects in Anacostia Restoration Plan?

Response: The BMPs identified by the Anacostia Watershed Restoration Partnership are still in the restoration *toolbox* of potential restoration activities and thus, they will be considered for implementation on a case-by-case basis as the restoration process moves into the implementation phase.

5. Transparency is essential: map of existing, in construction, and completed SW projects - a visual representation of progress toward goal would help all of us understand where we are and are going. Not all sites are created equal - project justification should be made public as well as details about prioritization. We need to know the rules in advance.

Response: The County will look into making available more information on restoration projects in a timely manner. In addition, the MS4 annual reports to MDE contain this information and will be posted on the DoE's website after submittal to MDE.

6. Stream Bank erosion is the 800 lb gorilla in the room. Can't we talk about reduction of volume entering the receiving water through run-off? Flows exceeding carrying capacity of receiving waters? All the talk about doggie do stations, street sweeping, and pond retrofitting are not very compelling to people whose stream side land is caving in. Measures like meadow planting could save the county money in landscape maintenance and go a long way to treating large areas economically. stop with the low hanging fruit. Retrofit-tting existing BMPs makes an improvement in the same location. Benefits should be extended to untreated areas.

Response: Different residents and organizations have different priorities and so the restoration plans have a range of activities. Especially in the Anacostia River watershed, there needs to be a large range of practices in the County's *toolbox* to meet high load reduction goals. The restoration plans for phosphorus and sediment do discuss streambank erosion. Any BMP that allows for infiltration of runoff will reduce the volume of water entering streams. BMPs that delay the peak of a storm hydrograph will help reduce the velocity of runoff entering the streams.

7. ROW - put a moratorium on new construction until appropriate standards are developed. Included Quasi govt entities like WSSC

Response: There are currently regulations in place from MDE and Prince George's County that require Erosion and Sediment Control and Stormwater management for any land disturbance that exceeds 5,000 square feet.

8. Emphasis on Programmatic Initiatives is disturbing. This is supplementary and not central to eliminating/ reducing water pollution. A lot of the plan is repackaging of existing programs that aren't working. We need an aggressive program with measurable, not theoretical results.

Response: DoE has recently increase the size of its public outreach staff and stepped up activities. This group has several new initiatives that will be started, including a revamped pet waste campaign program. These are in addition to increased emphasis on litter control. These programs can help eliminate pollutants, such as nutrients and bacteria, at their source. The success of these programs is partially on the County, but also partially on the public listening and acting on the messages that the County is delivering. Local organizations can help get these messages across to other County residents.

Our group actively participated in events leading up the passage in 2012 legislation which created the means to fund the plans being presented tonight. If these plans are successful, our County will come into compliance with the Clean Water Act. 42 years after the passage of that Law, we are still formulating plans to make the waters of Maryland swimmable and fishable. I hope we get it right this time.

Comments from Mattawoman Watershed Society



Mattawoman Watershed Society

Protecting and preserving Mattawoman Creek for the enjoyment of all.

Mr. Lilantha Tennekoon

December 1, 2014

Prince George's County Dept. of the Environment via [email: LTennekoon@co.pg.md.us](mailto:LTennekoon@co.pg.md.us)

Stormwater Management Division 1801 McCormick Drive, Suite 500 Largo, MD 20772

Re: Prince George's County MS4 draft Watershed Restoration Plans Dear Mr. Tennekoon:

We thank you for the opportunity to comment on Prince George's County's draft Watershed Restoration Plans (WRPs). These plans are being created for water bodies with existing Total Maximum Daily Loads as required by the county's permit for its Municipal Separate Storm Sewer System (MS4). In addition to these comments, we participated in the public hearing held on November 12. We have also signed-on to separate and more detailed written comments being submitted by the National Resources Defense Council. Here we focus on the Mattawoman Creek Watershed Restoration Plan [MWRP, 2014] for Mattawoman Creek, which has had an approved TMDL since 2005 for nitrogen and phosphorus. [MDE, 2005]

As acknowledged in the Mattawoman WRP itself [MWRP, 2014; p. 16], Mattawoman Creek has been described by fisheries scientists as "near to ideal conditions" and as "the best, most productive tributary to the Bay." [DNR, 1992; DNR, 2005] Unfortunately, today these scientists, and many other experts, report that Mattawoman is at the "tipping point" for irreversible degradation due to over-development of its watershed. [DNR, 2013; Task Force, 2012]

Indeed, over the last decade, the fish abundance and number of species in Mattawoman's tidal-freshwater estuary has declined seriously, and spawning by anadromous fish in the non-tidal river has plummeted. Among other effects accompanying these biological losses are a shift in hydrologic regime (a result of increased impervious surface), and a reversal in the spatial gradient of electrical conductivity (a measure of road salt contamination), which now *increases* above head of tide to at-least the Prince George's county line. [DNR 2010, 2011, 2013]

The Mattawoman Watershed Society (MWS), and its more than one thousand supporters, wish to retain the outstanding qualities that make Mattawoman a recreational centerpiece and economic engine for the region, and to restore those elements that are faltering. It is in this context that we submit these comments in an effort to help the county to restore this impaired but worthy waterway.

P.O. Box 201 Bryans Road, MD 20616

www.mattawomanwatershed.org mattawomanwatershed@hotmail.com

301-751-8039

Clearly, a key reason that Mattawoman is now at the tipping point for irreversible degradation is the volume and polluted nature of stormwater running off the increasingly urbanized land in its watershed. While Prince George's County occupies only about a fourth of the Mattawoman watershed, the county is progressively forsaking the Rural Tier designation of its southern flank in favor of commercial and residential development. See, e.g., the impervious surface mapped in Figure 2-3 in the WRP. Note the extensive residential development (with more permitted) that drains directly to reaches that support anadromous-fish spawning in the western section of the watershed in the county, and the dense impervious surface along the U.S. 301 corridor, with much more planned.

Improved transparency and level of information is needed.

We find, consistent with our previous comments on the draft MS4 permit, that the absence of standards in the MS4 permit translates into few actually enforceable elements in the WRPs. Nonetheless, in principle, the WRPs could serve as a much needed step to meeting wasteload allocations (WLAs) mandated in local TMDLs that for years have been effectively ignored. We are mindful that WRPs are necessarily complex, and involve detailed data and analysis. It is apparent that assembling the WRPs has proven challenging, based on the several inconsistencies and errors in the Mattawoman WRP (enumerated below), and in statements in the plan on the difficulty of quantifying loads (e.g. edge-of-land-cover bacterial concentrations [MWRP, 2014; p. 23] and on discrepancies in the modeling data available (e.g., the amount of urban area in the Mattawoman watershed differed by an order of magnitude between MAST and the Watershed Treatment Model [Tetra-Tech, 2014; p. 18]). Similarly, a thirty day period to review a complex plan nearly a year in the making is challenging to stakeholders: it provides too little time to adequately review the material and hampers constructive suggestions.

Please see the NRDC comments for a detailed discussion on the need to provide a greater level of detail on how various load reductions were computed. As the adaptive management scheme unfolds, we recommend that the county provide more frequent and timely information, and offer stakeholders a means to provide feedback on the progress or lack thereof. In particular,

we request that milestones for wasteload allocations be better spelled out, as discussed below, and that a means for notifying and informing stakeholders be implemented.

The final date for meeting WLAs is ambiguous; milestones for attaining WLAs are not sufficiently detailed

The MS4 permit states that:

“As part of the restoration plans, Prince George’s County shall:

- (i) Include the final date for meeting applicable WLAs and a detailed schedule for implementing all structural and nonstructural water quality improvement projects, enhanced stormwater management programs, and alternative stormwater control initiatives necessary for meeting applicable WLAs.

Concerning the final date for meeting WLAs, we request that ambiguity over the meaning of the 2030 date in the WRP be clarified. The most substantive mention of a final date reads as:

“As a result, the percentages in Table 6-9 [referring to retrofitted acres of impervious surface] were adjusted for the initial years and the remaining years were then proportioned on the basis of remaining impervious areas to be treated (Table 6-10). Factoring the implementation of the other restoration plans, this restoration plan will be fully implemented by 2030. Table 6-11 presents the overall target timeline for this restoration effort.” [MWRP, 2014; p. 79]

Response: The current analysis shows that all load reduction goals would be achieved by 2030. Some parameters will be achieved earlier. For instance, BMP removal efficiencies for phosphorus are higher than for nitrogen, so the same number of BMPs will meet phosphorus goals sooner than for nitrogen. Text will be added to the report to better illustrate this end date.

Table 6-10 presents a yearly schedule for meeting impervious surface retrofitting goals. Table 6-11 presents a timeline for general “restoration strategies,” showing the years when various activities will take place like public outreach, BMP implementation, tracking and reporting, etc. As such, neither table contains a schedule for attaining WLAs. Significantly, we are unable to find a concrete, enforceable declaration that actual WLAs will be attained (as required by the MS4 permit) by a final date of 2030.

Similarly, the schedules as presented in Tables 6-11 provide no detail to determine if the county is on track to attain the required load reductions to meet the WLAs. Only Table 6-10 gives specific quantifiable schedule, and this pertains to impervious surface retrofit goals. Presumably a load reduction can be associated with the acreage retrofitted, but this has not been included in the table.

We strongly urge that the county develop interim milestones quantifying target load reductions for each impaired watershed. This would permit the public, and the county for that matter, to gauge progress and identify shortcomings. We believe such a schedule is critical for an adaptive management approach to be successful.

Response: The total acres at the bottom of Table 6-11 are those that were determined, through analysis, will need to be treated to meet load reduction goals. A new table with the estimated load reduction pounds per year will be added between existing Tables 6-10 and 6-11.

Additional detail is required to understand the WLAs and the reduction in loads needed to meet the WLAs.

It is of fundamental importance to a WRP for impaired waterways with a TMDL to report the WLA and the load reductions required to attain the WLA. The discussion of these quantities occurs in Section 3.3 beginning on p. 25 of the Mattawoman WRP. We request that this section be revised to improve clarity and transparency.

Response: The text will be reviewed for clarity and revised as necessary.

The text on p. 25 states that Table 3-2 contains baseline loads, but Table 3-2 pertains to the computation of a correction factor to account for streambank erosion. Table 3-3 contains baseline loads, but their origin is unclear.

Response: The callouts will be revised to point to Table 3-3. The text will be reviewed for clarity and revised as necessary.

A lengthy block of text is repeated on p. 26. (See “Inconsistencies, oversights, and errors” below.)

Response: Thank you for pointing this out. All the restoration plans are undergoing a review for inconsistencies and errors.

The discussion does a good job communicating that the more stringent of the Bay TMDL and local TMDL applies, but it should be made clearer that it is the local TMDL that pertains to Table 3-3 (if in fact this is the case).

Response: The text will be reviewed for clarity and revised as necessary.

The source for the nitrogen and phosphorus WLA and percent reductions in Table 3-3 are not sufficiently clear. The text states that the Watershed Treatment Model (WTM) was used for the baseline, “using recent land use and impervious surface data...”, but does not give the date that “recent” refers to. Concerning the 14% reductions in Table 3-3, one must search the WRP for “14 percent” to infer that that these percentages were derived from MDE’s *TMDL Data Center*. After consulting the spreadsheet there,¹⁶⁹ we are unable to find a value of 14% pertaining to nitrogen.

Section 3.3 should discuss carefully the rationale for the load-reduction percentages. The text notes that changing conditions requires adjustments with respect to the approved Mattawoman TMDL that was written in 2004 and approved by EPA in 2005. However, this explanation is not enough given the drastic differences in the percent load reductions in Table

⁶⁹ <http://wlat.mde.state.md.us/ByMS4.aspx>

3-3 (14%) compared to those assigned to stormwater in the local TMDL (~50%). The TMDL states for “Average Annual Flow Allocations” (emphasis added):

This scenario was performed with an overall 40% load reduction from NPS (for nitrogen reduction: 54% from urban stormwater, 54% from agriculture and 20% from air deposition; for phosphorus reduction: 47 % from urban stormwater, 49 % from agriculture and 20% from air deposition) [MDE, 2005; p. 24]

It is surprising that percent load reductions in the WRP are reduced from the 2000 baseline in the local TMDL, given the large amount of development that has occurred since then, which almost certainly has outstripped any BMPs installed in the interim.

Response: Thank you for the comment. We contacted MDE and learned that they entered the incorrect number into their *TMDL Data Center*. They have updated their website and we have now updated the analyses and reports as needed.

Monitoring at a single site countywide is insufficient

We re-iterate our concerns expressed in comments to MDE on the MS4 permit, and at the November 12, 2014 WRP hearing, that a single monitoring site in the entire county is singularly insufficient. Prince George’s county occupies both Piedmont and Coastal Plain physiogeographic regions, which differ greatly in water chemistry, natural hydrology, groundwater dynamics and infiltration, and hydrologic response to disturbance.

More comprehensive monitoring is especially called for because of the heavy reliance on modeling to determine loadings, which must be accurately calibrated. We applaud the extensive benthic monitoring, but clearly this is no substitute for meeting conditions of a NPDES permit that must address pollutant loads.

By regulation, NPDES permits require “characterization data” [40 C.F.R. §122.26(d)(2)(iii)] that afford a *representative* understanding of the MS4 efficacy by including a:

“proposed monitoring program for representative data collection for the term of the permit that describes the location of outfalls or field screening points to be sampled (or the location of instream stations), why the location is representative, the frequency of sampling, parameters to be sampled, and a description of sampling equipment.” [40 C.F.R. § 122.26(d)(2)(iii)(D)]

The National Research Council concluded that:

“Stormwater management would benefit most substantially from a well-balanced monitoring program that encompasses chemical, biological, and physical parameters from outfalls to receiving waters.” [NRC, 2009; p. 7, emphasis added]

EPA guidance emphasizes the need for statistically significant monitoring and comprehensive monitoring:

“Pursuant to 40 C.F.R. §122.44(i), Phase I permits must include relevant, interpretable and statistically significant evaluation and monitoring provisions.” [EPA, 2010a; p. 5]

“Each monitoring program is unique and should be customized to the specific waterbodies, impairments, and pollutant sources of the MS4 ... Establishing a comprehensive monitoring and assessment program will enable the permittee to track progress in complying with permit provisions and implementing a program to protect water quality. [EPA, 2010b, p. 95]

Extensive monitoring data is critical to ensure that conclusions are representative of the various conditions encountered in a large MS4, and is key to successful use of adaptive management by providing feedback.

Lacking widespread data to characterize the performance of the MS4 in various subwatersheds, and over larger watersheds that integrate cumulative effects toward achieving WLAs, the adaptive-management system is essentially operating blind, or, in the words of EPA:

“Without assessing the effectiveness of the stormwater management program the permittee will not know which parts of the program need to be modified to protect and/or improve water quality and instead will essentially be operating blindly.” [EPA, 2010b; p. 95]

Hence, we are concerned that inadequate monitoring cannot provide the feedback necessary for determining if progress is being made, or guide adaptive adjustments if benchmarks fail to be met.

More extensive monitoring is also necessary to calibrate models, which are liberally employed as a means to gage progress in place of actual measurements.

It is not reasonable to imagine that watershed-assessment models, restoration-plan modelling, and modeled WLA estimates could be calibrated through monitoring of a *single site*, when the models necessarily must be applied to different watersheds that are subject to different BMPs and different impervious-fraction retrofits or restoration measures. One is reminded of the 2004 discovery that Chesapeake Bay models were overestimating progress in reducing pollution loads to the Bay as a consequence of too little monitoring. In the words of D. Boesch, “... monitoring—not modeling—should be used to assess present conditions.” [Post, 2004]

As part of the requirement that the MS4 preserve Water Quality Standards, including antidegradation, we recommend that Tier II waters be monitored in a manner to detect improvements or degradations in pollutant loads. Several MS4 outfalls discharge to a Tier II segment of the nontidal Mattawoman, and new discharges can be anticipated as development projects proceed. Intensive monitoring of outfalls discharging to Tier II segments will help ensure these high quality waters can assimilate urban stormwater discharges. Prince George’s County has recently approved new zoning allowing for dense development in the Tier II catchment of the Mattawoman main stem. We encourage the county to partner with Charles County in monitoring discharges to this segment that forms part of the border between the counties.

Response: The County will evaluate options for the appropriate monitoring program in consultation with MDE.

Inconsistencies, oversights, and errors

Response: Thank you for pointing out the errors below and conducting a thorough review of the plan. All the restoration plans are undergoing a review for inconsistencies and errors. We have spent the entire month since the Draft restoration plans were released, updating the plans in response to comment and fixing these errors.

While reviewing the Mattawoman WRP, we noted the issues enumerated below. While most are minor, and some may be attributable to transcription errors as text was shuffled among the WRPs for different watersheds, taken together they undermined confidence in the accuracy of the WRPs. This is especially so since we feel our review of the Mattawoman WRP is incomplete given the tight 30 day comment period, and we therefore expect additional undetected problems to exist. Troubling is the possibility that substantive errors lurk in what is supposed to be an enforceable element of the MS4 permit.

-On p. 2 and other places, a figure of 14% is given for the required reduction in nitrogen load, with a citation to the MDE's *TMDL Data Center* website (reference MDE 2014c in the WRP). Upon inspection of the database, we could not locate an amount of 14%.

-The intent of p. 26 (within Section 3-3) discussing the Bay-wide TMDL and local TMDLs is unclear. Contributing to the confusion is a lengthy block of text *that appears twice*. The block of text begins with "In 2011 the County received a Chesapeake Bay WLA and percent reduction for the entire County..." On the same page, we suggest including the citation to "MDE 2014c" in the caption to Table 3-3 and when Table 3-3 is mentioned in the text.

As discussed above, we request that entire Section 3.3 be clarified.

-On p. 27 there is an inconsistency. In referring to Table 4-1, "List of BMP types in the Mattawoman Creek watershed," the text says that oil and grit separators are tied with infiltration practices for the 3rd-most implemented BMPs, and that separators treat more IP. However there are no oil and grit separators in the table.

-Page 40 refers to a "Mattawoman Creek bacteria TMDL." MDE lists no bacteria TMDL for Mattawoman.

-There is an apparent inconsistency between Table 4-2 on p. 39, where columns 2 and 3 imply that wetlands do not constitute an "ESD Practice," and p. 47, under the heading *Retrofit of Existing BMPs*, which implies wetlands do constitute an ESD in the sentence: "For example, dry ponds can be retrofitted with ESD practices (wet ponds, wetlands, or bioretention) at reasonable costs, to increase the load reductions."

-On p. 56, the last paragraph incorrectly identifies sub-watershed MC1 as encompassing "the towns of Indian Head and Potomac Heights." These towns are in Charles County. Instead, according to the map of Figure 5-3, subshed MC1 encompasses the Mannoek mega-development and vast subdivisions that have been permitted on steep slopes down into the Mattawoman floodplain, where we have observed floodwaters lapping the berm around a

stormwater management wet-pond. We concur that this should be a high priority shed, and note that it drains to anadromous-fish spawning reaches of the Mattawoman river based on our ichthyoplankton surveys. [DNR, 2010, 2011, 2013]

-Similarly, on p. 56, last paragraph, the subsheds MC-8 and MC-9 mapped in Figure 5-3 are incorrectly assigned to Pomonkey and Accokeek. Pomonkey is in Charles County, and Accokeek is primarily in subshed MC1. Instead, MC-8 and MC-9 are in the Routes 301 and 5 corridors, where intense commercial and residential development is degrading the Mattawoman tributary Timothy Branch. Again, it makes sense that these should be a high priority subsheds.

-Between pages 68 and 79, there is an inconsistency (called out here with italics) on where the P3 initiative will focus:

p. 68: "The P3 initiative is expected to treat 2,000 acres of impervious areas within the next 3 years countywide, but will focus on the *older sections* of the County *in the Mattawoman Creek watershed*."

p. 79: "For instance, the P3 program will be focusing *on the older areas of the Anacostia River watershed*, since they were developed before stormwater management controls were enacted."

-On p. 79, in the paragraph before Table 6-9, Mattawoman is not listed with other impaired waters in the text.

-On p. 81, the continuation of Table 6-11 shows chemical monitoring results will be forthcoming for the years 2016-2030. However, as far as we can ascertain, there will be no chemical monitoring in the Mattawoman. If this is the case, either the table title is misleading because it refers specifically to Mattawoman, or the table is misleading because no chemical monitoring is planned.

-On p. 16, the number of sites surveyed for benthic organisms is given for the 2nd round of surveys (15 in 2013), but not for the first round (1999-2003). Evidently, sites were surveyed during the 1st round since discussion compares the inferred number of biologically degraded stream miles for the two rounds. Giving the number of sites surveyed in the 1st round would assist the public in understanding why the change in degraded stream-miles is not statistically significant.

Sincerely,

Jim Long

President

Mattawoman Watershed Society

Cc: brian.clevenger@maryland.gov

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Comments from Chesapeake Bay Foundation



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December 1, 2014

Attn: Lilantha Tennekoon

Prince George's County Government

Stormwater Management Division

Department of the Environment

1801 McCormick Drive, Suite 500

Largo, MD 20774

Submitted via email to LTennekoon@co.pg.md.us

Re: Prince George's County TMDL Restoration Plans Dear

Mr. Tennekoon,

Thank you for the opportunity to comment on the Prince George's County Total Daily Maximum Load (TMDL) Restoration Plans released pursuant to the County's Municipal Separate Storm Sewer System (MS4) Permit⁷⁰ for the Anacostia River, Mattawoman Creek, Upper Patuxent River, and Piscataway Creek watersheds. The Chesapeake Bay Foundation (CBF) applauds the County for its recent focus on stormwater pollution reduction, as demonstrated by increased public education and outreach, an innovative public-private partnership (P3) stormwater management model, and a reasonable stormwater utility fee program. CBF is invested in the success of the County's stormwater pollution reduction programs and TMDL restoration plans for the health and well-being of our approximately 5,450 members in Prince George's County, and in order to achieve clean water in local rivers, streams, and the Chesapeake Bay.

These restoration plans provide a thorough overview of existing watershed characteristics and identification of land cover and associated pollutant sources. Strong elements of these restoration plans include the commitment to using environmental site design (ESD) for all new best management practices (BMPs) and a robust iterative process that will allow the County to reassess and react to changing conditions as needed.

However, CBF is concerned that the restoration plans are lacking in underlying analytical data, clear and defined actions, and timely, detailed implementation schedules. These details are required by the language of the MS4 permit, but perhaps even more importantly, it makes good common sense to have a plan with specific goals and interim milestones to tackle a problem as pervasive and difficult as polluted stormwater runoff. These restoration plans will guide the County's progress towards meeting pollution reduction goals and are critically important to that effort. CBF recognizes that the plans state they are "not meant to be a site-level planning, but rather watershed-

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⁷⁰ Maryland Department Of The Environment, National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Discharge Permit Number 11-DP-3314/MD0068284 for Prince George's County, Maryland, at Section IV.E.3 (Jan. 2014), available at <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/Prince%20George%27s%20county%20final%20permit%20January%202%202014.pdf> (emphasis added) (hereinafter "MS4 Permit").

based planning.”⁷¹ However, even viewing the plans with that expectation, the restoration plans themselves suggest there is much more specific and useful information that was not found in any of the publicly available documents. The plans included crucial assumptions that appear to only be available in background technical documents that were not made publicly available, including the Tetra Tech Technical Memorandum: Development of Prince George’s County Local TMDL Restoration Plans Using WTM, dated June 30, 2014. Only after repeated requests did the County release this Technical Memorandum, more than two-thirds of the way through the public comment period. The need for the information contained in the Technical Memorandum is detailed below in these comments. There appears to be other underlying information and documentation that was not provided in the public review, and would be essential to independently evaluating load reduction assumptions.

Response: The technical memorandum was not completed at the time of the initial release of the restoration plans for public comment. The County’s initial plan was to release the technical memorandum to MDE prior to public release. During public comment, a working copy of the technical memorandum was released, upon specific written request, to Ms. Rebecca Hammer of the National Resource Defense Council for review. The County did not receive additional requests. Once finalized, the technical memorandum will be placed on the TMDL restoration plan website.

The County only had one year to develop the plans, which did not provide sufficient time to involve all interested parties. Given the adaptive nature of the plans, the county will reach out to different groups over the course of the restoration activities, share information, and evolve the plans based on new data.

CBF does not suggest that the County must have a site-specific plan at this stage that identifies where each BMP will be located. However, in order to accomplish any meaningful review of these restoration plans, the information behind major assumptions, such as total pounds of nitrogen reduced by ESD BMPs, needs to be better explained.

1. The Plans Should Include A Clearer Connection Between the 20% Impervious Surface Restoration and Load Reductions Required to Meet Waste Load Allocations

CBF recognizes that Prince George’s County is embarking on a public-private partnership in which a third party will be responsible for at least some portion of the County’s 20% impervious surface restoration requirement in the MS4 Permit. The work anticipated from both the County and the private partner should be quantified and included in these restoration plan documents. The MS4 Permit requirement to restore 20% of the County’s untreated impervious surface will be undeniably pertinent to obtaining waste load allocations (WLAs) and there will undoubtedly be overlap between the BMPs implemented to reach the 20% impervious surface restoration requirement and to reach relevant WLAs. While the P3 program is mentioned in the Restoration Plans, there is not any clear accounting for the reductions that are expected under the program.

Response: As stated in Section 6.1.1, any BMP implemented under the P3 Program would be created towards the load reductions from right-of-way BMPs. Since these programs have been launched recently, the County does not have long-term data on the estimated number of BMPs or the estimated amount of load reductions from the programs. Once more data is available in subsequent years, such as, installed BMPs, treated land use types, and level of public participation, estimates will be made on the load reductions from these programs..

⁷¹ Prince George’s County, Department of the Environment, *(Draft) Restoration Plan for the Anacostia River Watershed in Prince George’s County*, October 31, 2014. Page 5.

It is also not clear how the County will reach the 20% impervious restoration requirement within the five years of the permit. Prince George's County is responsible for retrofitting approximately 8,000 acres of existing impervious surfaces under the MS4 permit that expires in January 2019. However, in the Anacostia River Restoration Plan Table 6-10, only 1,000 acres will be treated by local restoration plans per year across all watersheds. At the end of five years, according to this Plan, the County will be short several thousand acres of restoration. Given the inextricable connection between restoring untreated impervious surfaces and reaching WLAs, CBF would like to see the 20% restoration requirement and anticipated pollution reductions included in the Restoration Plans.

Response: The County has not abandoned the MS4 requirement to meet the restoration goal of 2019 because of the information in Table 6-10. Table 6-10 provides only a forecast of equally distributed impervious restoration goals over the life of the restoration plans. The County will adjust the annual impervious area restoration effort in accordance to implementation schedule and opportunities.

2. The County Should Publicly Release All Background Technical Documents Supporting the Restoration Plans

There are several important aspects of the analysis in the Tetra Tech Technical Memorandum that are relevant to make sense of the County's watershed restoration plans. Using the Piscataway model to determine how pervious, connected impervious and disconnected impervious surfaces generate runoff differently is crucial to understanding the baseline load calculations. For example, in the Anacostia Restoration Plan, Table 3-1 provided "calibrated average concentrations in WTM by land cover type." However, without the sub-area source volumes calculated in the Technical Memorandum and the analysis in pages 8 through 14, Table 3-1 does not make sense. CBF requests that the County release all pertinent background documents to support public review of the restoration plans.

Response: The County plans to release the technical documentation once it has been thoroughly reviewed by DoE and MDE personnel and finalized. This document will be posted on the same website as the TMDL restoration plans.

Further, releasing the technical documents that underpin assumptions made in the plans would allow the public to see how the total reduction goals would be supported by various BMPs. For example, in the Anacostia Plan, Section 6.1.3 estimates the load reductions from BMPs and programmatic initiatives. However, it is not clear how either of these load reductions were calculated and the Plan does not provide sufficient information for a reviewer to independently evaluate calculations.⁷² For example, Section 4.2, "Programmatic Practices" explains a number of stormwater, tree-planting, public education and transportation programs, but explicitly states that crucial data sets such as amount of acreage treated using a given practice have not been established.⁷³ In other areas describing load reductions from programmatic activities, such as the pet waste campaign, highly optimistic compliance rates are used without being justified in the Plan or the Technical Memorandum.⁷⁴ CBF cannot determine from the documents provided by the County what numbers and additional assumptions were used in Section 6.1.3 "Estimated Load Reductions" in which the County states that load reductions from "existing" and "recommended" programmatic initiatives were

⁷² In fact, the anticipated load reductions for nitrogen from all restoration strategies in Table 6-3 does not match the nitrogen reductions from restoration plan strategies in Table 6-4. The total nitrogen reduction from all restoration strategies in Table 6-3 adds up to 223,493 lbs/year while the total nitrogen reduction from all restoration strategies in Table 6-4 is listed as 223,581 lbs/year. Since the anticipated nitrogen reductions exceed the "Reduction Gap," the 88 pound difference may not be important, but the inability to reconcile these numbers is emblematic of the public's inability to independently evaluate the Plans without the underlying information. **Response:** The numbers in all tables will be verified before final release of the documents.

⁷³ See, e.g., *id.* at 35 ("The acreage that will be treated using this [Countywide Green/Complete Streets] program has not yet been estimated").

⁷⁴ See, e.g., *id.* at 75 ("For the restoration plan, it was assumed that there will be an 80 percent compliance rate in the NEB and NWB watersheds and an 85 percent compliance rate in the Lower Beaverdam and tidal Anacostia River portions of the watershed").

subtracted from the necessary load reductions. Without knowing the acreage affected by various programmatic initiatives, adoption rates for programmatic activities, or pollution reduction efficiency of programs, CBF cannot determine how the County was able to subtract those practices out from the pollution reduction loads.

Response: The County recognizes the inherent difficulties and challenges related to programmatic “outreach” activities. This is emphasized by MDE in the County’s MS4 permit requiring measurable outcomes. Much remains to be addressed on this topic during implementation.

The same is true of the proposed BMPs found in Table 6-2. Preceding that table, the Plan states that “the County does not have long-term data on the number of BMPs or the amount of load reductions from these programs” such as the BMPs implemented under the County’s Alternative Compliance Program or BMPs installed as part of the County’s Rain Check Rebate and Grants Program.⁷⁵ However, in Table 6-2, the County provides a specific number of pounds reduced by ESD practices on various land uses. CBF requests that County provide the assumptions and any underlying data used to determine the final load reductions and how they are distributed across strategies.

Response: Please see responses above.

3. The Restoration Plan Implementation Schedule Should Contain BMP and Implementation Details

The MS4 Permit requires “a detailed schedule for implementing all structural and nonstructural water quality projects, enhanced stormwater management programs, and alternative stormwater control initiatives necessary for meeting applicable WLAs.”⁷⁶ The detail required in these restoration plans are important for the County to properly allocate resources and evaluate progress. Detailed implementation schedules are also important for the County, MDE, and citizens to determine whether the County is on track to meet interim goals and final deadlines. However, Tables 6-10 and 6-11 do not provide enough information to determine whether the County is on track or whether pollution reductions are actually being realized in the time-frame in which they are anticipated.

As discussed above, it is not clear from Table 6-10 how the County will restore the necessary 20% impervious surface required under the MS4 Permit, as the 1,000 acres planned to be restored annually will only add up to 5,000 restored acres at the end of five years.

Additionally, it is not clear from Table 6-10 how many pounds of pollution reduction will result from the restoration of 1,000 acres per year, as the plans have not connected pollution reductions to acres treated. Without anticipated pollution reductions based on the anticipated acres treated, the implementation plans cannot be compared to the County’s monitoring and tracking database, which will be expressed in pollutant loadings.

Finally, Table 6-11 provides no specific compliance schedule that can be tracked to provide public accountability or even generally assess the County’s progress. Table 6-11 simply states that crucial actions, such as BMP Implementation, will be ongoing from now until 2030. CBF respects the County’s adaptive management approach and recognizes that an overly rigid implementation schedule would hinder that flexibility. However, there is a middle ground between the plans’ current blanket statement that work will be ongoing until 2030, and having a project- and site-specific plan. CBF respectfully requests that the County elaborate on the anticipated schedule of implementation.

Response: Table 6-10 does indicate the impervious area treated yearly milestone goals. Programmatic initiatives—such as outreach and education or street sweeping—will be ongoing, like indicated in Table 6-11. A new table with the estimated load reduction pounds per year will be added between existing tables 6-10 and 6-11. The pounds reduced depends on several factors such as land

⁷⁵ *Id.* at 76.

⁷⁶ MS4 Permit Part IV.E.2.

use and BMP type, so the values will be estimates. While ESD practices are included in the plan, certain BMPs have higher efficiencies, so the load estimates in the new table will be an estimate.

The County has not abandoned the MS4 requirement to meet the restoration goal of 2019 because of the information in Table 6-10. Table 6-10 provides only a forecast of equally distributed impervious restoration goals over the life of the restoration plans. The County will adjust the annual impervious area restoration effort in accordance to implementation schedule and opportunities.

4. Conclusion

CBF appreciates the inherent difficulty in creating restoration plans that cover many acres of land, many various land uses, and require many technical and practical assumptions to be made. The Prince George's County Restoration Plans indicate that the County has gathered an extensive amount of technical information to support the County's plans. In order to get the most value from the public participation required under the County's MS4 Permit, CBF requests that going forward, the County provides the technical documents and memoranda that form the basis of the County's Restoration Plans. The late release of the Tetra Tech Technical Memorandum and the short 30 day timeframe for public review makes more extensive comments impractical at this time. However, CBF looks forward to working with the County in the future to achieve our mutual clean water goals. Thank you again for the opportunity to provide these comments, and please contact us with any questions.

Response: Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Elaine Lutz". The signature is fluid and cursive, written in a professional style.

Elaine Lutz, CBF Staff Attorney

Comments from Metropolitan Washington Council of Governments

From: Phong Trieu [mailto:ptrieu@mwkog.org]
Sent: Thursday, December 11, 2014 11:20 AM
To: Tennekoon, Lilantha; Maldonado, Jerry G.
Subject: Anacostia Restoration Plan

Lilantha,

My comments/suggestions on the County's Anacostia Restoration Plan:

- Page 12: Consider using 176 mi² for the entire watershed. This would be consistent with all Anacostia-related previous reports.
 - Brier Ditch = Briers Mill Run its current USGS name.**Response:** The text will be updated.
- Page 21: Should US Department of Interior/National Park Service be included (B/W Parkway and Greenbelt National Park)?
Response: We were not able to find evidence that they have an MS4 Phase II permit in Maryland.
- Table 3-1. Should there be a footnote to indicate average concentration per unit area (e.g., acre)?
Response: Concentrations are not expressed per acre because concentrations are not additive. Concentrations multiplied by the flow for an acre of land would produce a load per acre, which are additive.
- Page 28: I do not know if you and Jerry ever saw this tech memo for the NWB. But COG is completing this stream bank erosion field study for the NWB. It will be extrapolated to the Paint branch (University Blvd to Route 1) once we finish the NWB erosion rate study See attached.
Response: Thank you for the additional information.
- Page 58: Attached is a quick field study we completed for downspout disconnection.
Response: Thank you for the additional information.
- Page 102: Text change to Northeast Branch and not Northeastern Branch;
 - You may want to note that MD DNR/MBSS conducts qualitative fish surveys and that MWCOG conduct spring time fish surveys to provide additional biological health measurements for the tributaries.
 - You may want to add a map to show the two USGS flow/water quality monitoring stations http://www.anacostia.net/restoration/stream_station_network.html**Response:** Thank you for the additional information. The suggested text will be added.

Thanks for the opportunity to review.

Phong Trieu