

# STORMWATER PARTNERS NETWORK OF MONTGOMERY COUNTY



January 21<sup>st</sup>, 2021

Raymond Bahr  
Maryland Department of the Environment  
Water and Science Administration  
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Re: Comments on Phase I MS4 permits

Dear Mr. Bahr,

The undersigned members of the **Stormwater Partners Network of Montgomery County (SWPN)**<sup>1</sup> thank you for the opportunity to comment on the draft phase I MS4 permit for Montgomery County. We appreciate the opportunity to also provide input prior to this official comment period, in working groups and informal comment letters to MDE since 2017. We also appreciate the ongoing dialogue over the last few years on polluted runoff and clean water permits with MDE.

Many of our coalition's members are also members of the Choose Clean Water Coalition. We do not repeat the general text of that letter here but support its overall points and priorities. In this letter, we comment on the following issues specific to Montgomery County:

- I. INTRODUCTION: PROGRESS IN IMPLEMENTATION AND INNOVATION BUT A NEED FOR A NEW METRIC
- II. PACE OF STORMWATER MANAGEMENT IMPLEMENTATION
- III. IMPORTANCE OF GREEN INFRASTRUCTURE AND THE COUNTY'S DEFINITION OF GREEN INFRASTRUCTURE, NEGOTIATED WITH SWPN IN 2016
- IV. IMPORTANCE OF ONGOING WATERSHED ASSESSMENT PLANNING: INCLUDE WATERSHED ASSESSMENTS AS IN THE LAST PERMITS
- V. RELATIONSHIP OF DEP TO PARKS, DOT, AND OTHER AGENCIES
- VI. STREAM RESTORATION
- VII. CONSTRUCTION STORMWATER PERMIT WAIVERS: THE PERMITS SHOULD REQUIRE TRACKING OF STORMWATER CONTROL WAIVER QUANTITY AND VOLUME, NOT JUST COUNTS AND TYPES OF WAIVERS
- VIII. TRASH, FLOATABLES, AND DEBRIS
- IX. THE USE OF SYNTHETIC TURF AND OTHER PLASTIC OR RUBBER INFILLS IS NOT CONSISTENT WITH MS4 REQUIREMENTS
- X. IMPROVED SALT MANAGEMENT REQUIREMENTS FOR DEICING: A POSITIVE ADDITION TO THE MS4 PERMITS
- XI. NEW TOOLS TO PRIORITIZE RESTORATION SUITABILITY AND EQUITY
- XII. PUBLIC OUTREACH ON STORMWATER PROJECTS
- XIII. CONCLUSION

APPENDIX: FRIENDS OF SLIGO CREEK COMMENTS ON WHEATON BRANCH FLOOD MITIGATION PROJECT

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<sup>1</sup> The Stormwater Partners Network is composed of organizations and individuals who support more effective stormwater policies and management in Montgomery County, MD, with the goal of clean and healthy streams throughout the county. We have worked collaboratively with county and state agencies and legislators to modify existing policies and practices so that they foster water infiltration rather than runoff. A full list of our current membership can be found on our website, [www.stormwaterpartnersmoco.net](http://www.stormwaterpartnersmoco.net).

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## I. Introduction: Progress in Implementation and Innovation but a Need for a New Metric

Overall, we applaud Montgomery County for its willingness back in 2005 to take on the first Phase I permit in Maryland with an impervious surface reduction (ISR) goal. Since then, despite delays including a consent decree, Montgomery County has achieved each of its ambitious ISR targets. It has also during that time expanded outreach programs, been an innovator on Environmental Site Design (i.e. bioretentive green infrastructure, such as Green Streets), maintained and expanded its inspection and maintenance programs, and kept strong and open lines of communications with watershed groups through communications with SWPN, the H2O Summit, Green Fest, and individual presentations and meetings. We have always been pleased with the Department of Environmental Protection's openness to our ideas and commitment to communication, as well as to its staff's invaluable expertise on biological monitoring, stormwater engineering and management, watershed ecology, planning, and more. We also applaud Montgomery County for its new and evolving focus on equity in stormwater management and environmental planning, and for using smart mapping and planning tools to support effective decision-making.

Despite this immense level of expertise and investment, progress on managing stormwater pollution is stubbornly slow. Upcounty, high-quality watersheds like Little Seneca and Ten Mile Creek may be losing some of their biological integrity. While downcounty, urbanized streams like Sligo have improved, we may be seeing an overall flattening of aquatic biodiversity in our watersheds—and even that downcounty progress may be difficult to maintain as climate change brings bigger and more frequent storms.

You are what you measure: Montgomery County clearly seeks to attain its most important MS4 permit metric, ISR, without an attendant focus on an integrative plan for long-term success in watershed protection and restoration. The Montgomery County FY 2019 annual report shows that 39.8% of impervious acres in the MS4 have received stormwater restoration since 2005<sup>2</sup> but this was not reflected in TMDL reductions overall for the county, aside from phosphorus in the Anacostia. Some pollutants are at only 1% reduction despite the extensive ISR effort.<sup>3</sup> This is why, as detailed in many letters our groups have submitted in concert with the Choose Clean Water Coalition, we believe the ISR metric is fundamentally flawed and should be replaced with a pollutant reduction metric, coupled with practice requirements (i.e. a 40% minimum green infrastructure requirement) and ceilings (i.e. cap on street sweeping and stream restoration).

## II. Pace of stormwater management implementation

Because Montgomery County began its first Phase I MS4 permit in 2005 and second in 2010 but extended via consent decree through 2018, the county effectively had 13 years to achieve 30% ISR, which is an implementation rate of 2.3%/year. With the caveat that, as discussed elsewhere, ISR is an output-based measurement of activity and not actually an outcome-based measure of water quality success, if MDE continues to use this inadequate ISR metric, we believe that the level of effort required in the 2020 permit should be significantly higher than contemplated. If Montgomery County were actually on 5-year permit cycles of 10% 2005-2010, 20% 2010-2015, and 20% 2015-2020 as envisioned earlier in the MD stormwater planning process, the county should have achieved 50% ISR by now. Since the county is now effectively banking credits towards the next permit term (presumed to begin in 2021), they will effectively have 7 years to complete the ~10% additional ISR (1,814 acres) contemplated in the 2020 permit, which is an implementation pace of only

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<sup>2</sup> Montgomery County FY 2019 Annual Report, p ES-11

<sup>3</sup> Montgomery County FY 2019 Annual Report, p 164-165.

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~1.4%/year. What this pace of implementation shows is that Montgomery County's, and probably other counties', effective maximum extent practicable should be set higher than the 2020 permit contemplates. Both the drafted 2%/year and the effective (including the extra two years of delay) 1.4%/year rates are lower than Montgomery County has clearly demonstrated it is able to achieve. **We have recommended, and continue to urge in the strongest of terms, that if the ISR metric is continued to be used, counties continue to be required to meet 20% ISR over the permit term.**

## III. Importance of green infrastructure and the county's definition of green infrastructure, negotiated with SWPN in 2016

In 2016, SWPN negotiated with Montgomery County DEP to embrace a shared definition of green infrastructure and a commitment to its implementation, putting Montgomery County on the leading edge among MS4 jurisdictions in Maryland. Below is the definition and policy adopted by DEP, as captured in the Montgomery County FY17 MS4 Annual Report.<sup>4</sup> Much of what SWPN learned from working with DEP in this discussion, was brought by our members to the green infrastructure working group led by MDE on the Accounting Guidance revision in 2018 – 2019.

DEP embraces the definition of green infrastructure as follows:

*“Green infrastructure is a cost-effective, resilient approach to managing wet weather impacts that provides many community benefits. While single-purpose gray stormwater infrastructure—conventional piped drainage and water treatment systems—is designed to move urban stormwater away from the built environment, green infrastructure reduces and treats stormwater at its source while delivering environmental, social, and economic benefits.*

*When rain falls in natural, undeveloped areas, the water is absorbed and filtered by soil and plants. Stormwater runoff is cleaner and less of a problem. Green infrastructure uses vegetation, soils, or other elements and practices to restore some of the natural processes required to manage water and create healthier urban environments. At the city or county scale, green infrastructure is a patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the neighborhood or site scale, these stormwater management systems mimic nature, infiltrate, evapotranspire, and/or beneficially reuse water.”*

DEP Green Infrastructure Policy:

*DEP has a commitment to using the best scientific information and literature available to evaluate solutions for meeting regulatory stormwater requirements and achieving multiple benefits.*

*Under this policy, DEP commits to the following primary objective: Through comprehensive watershed assessments, DEP will first consider projects and practices that align with the definition of green infrastructure for compliance with MS4 requirements and to reduce and mitigate the consequences of uncontrolled stormwater runoff.*

*Restoring natural processes and functions in watersheds often requires practices and approaches that can handle the concentrated stormwater volume and flow associated with impervious surfaces. Specialized green stormwater practices that mimic natural ecosystems should be considered in the retrofit selection process in order to achieve successful watershed restoration.*

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<sup>4</sup> Montgomery County FY 2017 Annual Report, p 19-20.

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*DEP will adapt restoration practices to site conditions and seek to attain the greatest water resource benefits for the County by conducting life cycle cost and return on investment analyses to determine lowest cost while achieving the highest function and benefit.*

*Working collaboratively with stakeholders, DEP commits to develop a programmatic framework to identify costs and achieve multiple benefits, defined as economic, ecological, and social benefits accruing to public and private stakeholders.*

*Under its Municipal Separate Storm Sewer Permit, the required impervious acres to which stormwater retrofits are applied in DEP's implementation of the Watershed Restoration program, DEP's goal is that 60 percent of these acres will be addressed with green infrastructure practices.*

SWPN continues to strongly support the definition and policy above. We point to several critical points of the definition and policy that should be kept front and center in the new permit: the need for comprehensive watershed assessments to guide planning and implementation; the importance of infiltration, evapotranspiration, and beneficial reuse of water in defining GI; and the commitment to consider GI practices first in the watershed before moving to other approaches.

On the other hand, we have long disagreed with DEP regarding the inclusion of several practices into the list that DEP considers to be "GI": specifically, stream restoration (a restored stream may reduce sediment loads but does not necessarily infiltrate or evapotranspire water, just convey it downstream more safely—plus other concerns detailed elsewhere in this letter) and wet ponds.

**We strongly urge that the county's definition of green infrastructure be tightened to exclude those two practices, and that a higher priority be given to practices described as "Environmental Site Design" (ESD), such as bioretention and infiltration-focused practices that best mimic natural processes.**

## IV. Importance of ongoing watershed assessment planning: Include Watershed Assessments as in the Last Permits

We are also concerned that the draft permits recently released by the Maryland Department of the Environment would terminate the requirement for the preparation of Watershed Assessments (Section III.F in the 2010 permit text). Even if MDE assumes that all watersheds have now been appropriately assessed and a plan created, in some others these plans may now be more than 10 years old. Climate change, new development, new monitoring data, and other information should be used to update these assessments. And, in the 2020 drafts, there is no requirement to "report annually on the status of compliance with the watershed assessment schedule" as required in the 2010 permits.

This is of particular concern given Montgomery County's (and presumably other counties as well) intention to update the TMDL Implementation Plans for its impaired waterways, as directed in the 2020 draft permit. Such plans use the data gathered and the BMP location recommendations from the Assessments to formulate how the TMDL plans will be structured. The two activities work together to assure the efficacy of stormwater management to achieve durable reductions in pollutant loads. **We urge that there be further consideration of the importance of Watershed Assessments, and a section thoughtfully utilizing and updating these important assessment tools added back in, before a proposed 2020 permit text is released.**

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## V. Relationship of DEP to Parks, DOT, and other agencies

SWPN has long worked primarily with Montgomery County DEP as the lead agency on the county's Phase I MS4 permit, but we also work closely with Montgomery Parks (holder of its own Phase II permit that covers a substantial portion of the county's area and the majority of its stream valleys) and the Montgomery County Department of Transportation (MCDOT), which is a critical partner on many stormwater projects involving the streetscape. We reiterate the following recommendations, which we have made at the local level in the past:

- Montgomery Parks, as the steward of our stream valleys, should continue to be responsible for its own Phase II MS4 permit.
- DEP and Parks must work hand-in-glove not only on design, permitting, and construction of in-Parks project (i.e. where DEP proposes a project on parkland to treat runoff from the Phase I area); but also on holistic watershed and stormwater management planning. The goal of the two agencies should be to use the land they are each jurisdictionally responsible for in as efficient and environmentally sensitive a manner as possible – prioritizing upland retrofits out of stream valleys to avoid riparian disturbance, and focusing riparian projects and dollars in places that specifically meet Parks/Phase II priorities as well as DEP/Phase I priorities.
- On the local level, both agencies, and all of their stormwater needs, should be fully funded by the County Council and not required to compete directly for dollars.
- Similarly, DEP and MCDOT should work in close consultation, at both the leadership and staff levels, to ensure that every time a streetscape is added, modified, or improved, it maximizes the amount of (green) stormwater infrastructure installed. It is galling to see a sidewalk replacement or curb rebuild without a new bioswale or even a grass swale added to the side of the road.

## VI. Stream Restoration

While stream restorations may well reduce a major source of sediment and bonded nutrients due to bank erosion, they can be hugely disruptive to the ecology of a stream valley and also divert resources from upland retrofits and impervious surface removal, both of which address the root cause of stream bank erosion and could eliminate the need for stream restoration projects. SWPN convened a stream restoration working group in fall of 2020 to discuss the issue and provide recommendations to our agency partners. Below are our working group's initial recommendations. We note that we do not have unanimity on every detail of the recommendations below, nor on the overriding question of whether stream restorations are ever or at all appropriate. But we do all believe that if they are done, they should be done with extraordinary care, caution, and forethought to ensure that they result in benefits to the ecology of the local stream valley and riparian system, as well as downstream beneficiaries of reduced sediment pollution such as the Potomac River and Chesapeake Bay. And, they should be tightly coupled with extensive upland retrofits, ideally before restoring the stream valley. We are pleased with the potential benefits of DEP's new targeting/prioritization maps for stream restoration and upland retrofits and look forward to assessing their practical results during this next permit term.

### Upland Controls First

We all agree that upland control of stormwater should be required prior to installing a stream restoration to help ensure that ever-increasing storm flows won't just blow out the new channel. However, some of us believe that stream restorations should not be done at all since they don't address the root cause of stream bank erosion.

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## Incentivize Upland Retrofits over Stream Restoration

If stream restorations continue to be allowed, MDE's Accounting Guidance and permits must create an incentive structure where upland stormwater control is promoted over stream restorations, such that stream restorations are not used as a preferred engineering option to achieve compliance.

## Biological improvements Rare or Very Slow with Stream Restoration

The scientific basis for the ecological benefits of stream restoration projects in our region is disputed in the scientific literature. For example, Hilderbrand et. al. (2020) says, "We sampled 40 urban stream restorations across the Piedmont and Coastal Plain physiographic regions in the greater Baltimore/Washington DC Metropolitan area of Maryland." "Despite the promise and allure of repairing damaged streams, there is little evidence for ecological uplift after a stream's geomorphic attributes have been repaired." "Unfortunately, the ecological aspects rarely improved despite the improved physical measures."<sup>5</sup>

Bill Stack, PE, one of the co-authors of the Expert Panel report (whose recommendations are used by MDE) states that, "...municipalities are spending enormous amounts of money on [stream restoration] projects that generate the necessary water quality credit but have no real impact on stream function."<sup>6</sup>

## Prioritize Green Infrastructure Upland

There generally are alternative, upland (out of stream valley) stormwater retrofit (or control) projects that could be done in previously disturbed areas to meet the MS4 permit. These projects primarily consist of green infrastructure projects. Such projects would address the root cause of the problem – keeping stormwater from impervious surfaces out of streams. By controlling stormwater upland, stream bank erosion might decrease enough to possibly eliminate the need for stream bank stabilization entirely within the context of stream restorations, particularly in less urbanized watersheds. While we applaud the Accounting Guidance's new 35% bonus for upland, green infrastructure projects and would support an even higher increase, we remain concerned that the doubling of the stream restoration planning credit will still lead to them taking precedence over these critical upland solutions which could eliminate the need for stream restorations.

## Riparian Improvements Before or With Stream Restoration

There are non-destructive riparian (along stream) alternatives to "stream restorations" allowed by the Accounting Guidance such as the less invasive practices of Riparian Forest Planting and Riparian Conservation Landscaping. Using less heavily-engineered bank stabilization practices could go a long way towards reducing bank erosion from a degraded stream channel without the heavy footprint of a full Natural Channel Design, Legacy Sediment Removal, or Regenerative Stormwater Conveyance restoration approach. Using the non-destructive riparian practices in addition to controlling stormwater upland as noted above, stream bank erosion might decrease enough to possibly eliminate the need for stream bank stabilization entirely within the context of stream restorations, particularly in less urbanized watersheds.

The complex web of interactions between fauna, flora, geology, and hydrology that interact in natural areas is irreplaceable and cannot be recreated on even a decadal time scale by engineering projects using bulldozers, backhoes, and trucked-in material to create artificial structures in our natural areas. We should be guided by the principal of "Do No Harm" in our stream valleys.

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<sup>5</sup> Hilderbrand, R., and Acord, J., (2020), "Quantifying the ecological uplift and effectiveness of differing stream restoration approaches in Maryland," Final Report Submitted to the Chesapeake Bay Trust for Grant #13141 <https://drive.google.com/file/d/1ajZqeDvTNM0BtufkO58IHZQGusp2UKAZ/view?usp=sharing>

<sup>6</sup> Stack, B., 2019, "Chesapeake Bay Program Stream Restoration Credits: Moving Toward Functional Lift?", Bill Stack, PE, Deputy Director of Programs, Center for Watershed Protection, September 12th, 2019; <https://www.cwp.org/chesapeake-bay-program-stream-restoration-credits-moving-toward-functional-lift/>

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Just as the Chesapeake Bay has environmental value, so do the rich fauna and flora of our stream valleys. As proposed above, there are better ways to protect the Bay than by using stream restorations to destroy existing streams and streamside forests and wetlands and instead replace them with engineered stormwater conveyances.

## Recommendations

Some of our members suggest that stream restorations should be removed completely from the Accounting Guidance given the concerns stated above. Others do not go so far but strongly recommend that MDE revise the credits and guidance available for stream restorations. **All upland practices (which do reduce stormwater runoff) should be exhausted before stream restorations are allowed to be conducted.** Therefore, **all signers of this letter recommend the following changes to the credits and guidance for stream restorations as follows:**

- a) Less planning credit per linear foot should be given. Revert back to 0.01 EIAf per linear foot.
- b) All stream restoration projects should require that biological uplift be demonstrated in a set timeline, reasonable to the condition of the stream prior to restoration and the location of the project (i.e., a longer timeline for more urban streams) in order to receive credit. These figures would be relative to pre-construction measurements. If such increases are not demonstrated, then no credit will be awarded to the project. This would include the retroactive “claw-back” of any partial credit awarded at any intermediate milestones.
- c) Require justification of a stream restoration project versus a set of upland projects by comparing local ecological factors such as
  1. an accounting of the full range of flora and fauna that will be lost by conducting pre-construction field surveys by experts in the various fields of botany, herpetology, mycology, ichthyology, etc.
  2. a calculation of projected lost ecosystem services by experts (e.g., lost CO<sub>2</sub> uptake, lost O<sub>2</sub> production, food web disruption, etc.) during and after construction,
  3. the extent of hydrologic disruption due to soil compaction (e.g., destruction of seeps and springs; tree death due to critical root zone damage) by experts, and
  4. a comparison of the projected carbon footprint of construction activities by experts.

All proposed stream restoration projects should score higher than the alternative proposed set of upland projects (which can be in the same or different watershed or sub-watershed) on all four factors above and be required to demonstrate biological uplift compared to pre-construction measurements in order to receive MS4 Permit credit.

## Some of our organizations suggest the following additional changes:

- d) that stream restoration projects used for MS4 Permit credit should not be exempted from any state or local forest conservation or forest protection laws (and this non-exemption wording should become part of the MS4 Permit language).
- e) Furthermore, replanting requirements should be, for example, at a 2 to 1 ratio based upon the diameter at breast height (dbh) lost. For example, the loss of one 24" dbh tree would be replaced with sixteen 3 inch dbh trees, twelve 4 inch dbh trees, or twenty four 2 inch dbh trees.

Overall, Montgomery County DEP has shown a thoughtful approach to the need to attend to upland stormwater management when considering possible locations for stream restoration. Further, Montgomery County should be applauded for their weighting the value of potential biological uplift despite not being required to do so.

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## VII. Construction Stormwater Permit Waivers: The Permits Should Require Tracking of Stormwater Control Waiver Quantity and Volume, Not Just Counts and Types of Waivers

The standard permit language in the draft permits (*Part IV.D.1.b.iv*) says: "Activities...shall include...Maintaining programmatic and implementation information related to...**Number and type of waivers received and issued**, including those for quantity control, quality control, or both. Multiple requests for waivers may be received for a single project and each should be counted separately, whether part of the same project or plan."

The bold section above should be revised as follows:

"Number, type, and WATER QUANTITY VOLUME of waivers received and issued..."

We have studied the granting and tracking of waivers in Montgomery County and have found it exceedingly difficult to determine how much stormwater goes uncontrolled as a result of these waivers. The Department of Permitting Services, which administers erosion & sediment control and stormwater management permits, only has a machine-readable digital database for the dollar amount of waiver fees, not the quantity of stormwater volume waived or ISR equivalent. Without knowing the volume of water not treated as per the Stormwater Management Act (and local standards), regulators cannot know how far behind they are slipping as a result of new or redevelopment that does not adequately control stormwater. **MDE should push permittees to improve the utility and accessibility of waiver databases and report not only on the number and types of waivers, but on the quantity of water management waived.**

## VIII. Trash, Floatables, and Debris

The current draft MS4 permit for Montgomery County restored some permit requirements related to trash, floatables, and debris in line with the Anacostia Trash TMDL—which the previous version of the permit omitted significantly. The restoration of some of this language is certainly a small step in a better direction for the conditions of this permit. However, the language that currently appears in the section has been heavily reduced from the previous round of MS4 permits from 2014. The current draft requires that the jurisdiction provide “[U]pdates on the County’s efforts to reduce trash, floatables, and debris, and show progress toward achieving the annual trash reduction allocation required by the Anacostia trash TMDL.” The updates required by this current draft require the county to describe the status of trash elimination efforts, including resources expended and the effectiveness of all program components. This effectiveness metric is explained as (1) quantifying annual trash reductions using the Department’s TMDL analysis or an equivalent and comparable County trash reduction model; (2) the public education and outreach strategy to initiate or increase residential and commercial recycling rates, improve trash management, and reduce littering; and (3) an annual evaluation of the local trash reduction strategy including any modifications necessary to improve source reduction and proper disposal.

While these are important components of the permit as it relates to the Anacostia Trash TMDL, the requirements here are extremely watered-down compared to the previous Montgomery County MS4 permit. The 2014 permit conditions included trash, floatables, and debris reduction requirements that were stronger and more specific. The permit’s augmented permit conditions included litter and trash reduction strategies. Part IV(D)(4). The 2014 permit required:

- Inventory and evaluation of trash and recyclable pickup operations;
- Development and Implementation of a public education and outreach strategy with specific performance goals and deadlines;



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- Development of a work plan consistent with the assumptions of the Anacostia Trash TMDL based on an estimation that 170,628 pounds of trash needed to be removed annually;
- Development of accounting methods to quantify trash reductions;
- Reporting progress toward implementation of the trash reduction strategy annually;
- Evaluation and modification of local trash reduction strategy with an emphasis on source reduction; and
- Conducting a public participation process in the development of the trash reduction strategy requiring sufficient notice, development procedures, a comment period and summarization of how the county addressed any material public comments received.

If this newest version of language addressing trash reductions and the Anacostia Trash TMDL remains in the current Montgomery County MS4 draft permit, (and likely the Prince George's County draft permit) the permit and the County's progress on trash, debris and floatables will move in a backwards direction from the 2014 permit.

## IX. The use of synthetic turf carpet and other plastic or rubber infills is not consistent with MS4 requirements

SWPN is concerned that Montgomery County continues to allow synthetic turf (synturf), both on public and private property and to use synthetic turf in public spaces. These artificial plastic carpet playing fields disintegrate into air, soil and water through wear and tear (an estimated 1-5 tonnes per year per synturf field).<sup>7</sup> The carpeting uses virgin plastics, is very difficult to dispose of responsibly, is not recyclable and requires treatment with chemical flame retardants, antioxidants, surfactants and other harmful cleaning agents during its lifespan which inevitably end up in our waterways. In addition, the granules of plastic and crumb tire-rubber infill dumped on top of the carpets (to cushion against the hard surface underneath) run off into soil and water and can themselves be toxic to wildlife (the European Union is for that reason planning to ban all such synthetic turf infills<sup>8</sup>). The chemicals in the synthetic carpet and infills are shown to bioaccumulate in fish (and then humans). Some examples are the carcinogenic polycyclic-aromatic hydrocarbons, endocrine disrupting phthalates, plasticizers, immuno-toxic PFAS chemicals, cadmium, neurotoxic lead, carbon black, VOCs, and zinc (highly toxic to aquatic systems). A recent study showed that a specific tire rubber additive (6PPD) is particularly and highly toxic to salmon.<sup>9</sup> Note that many synturf installations, rubber mulch and poured-in-place playground surfaces, use ground-up used tire rubber as their infill material.

SWPN member Safe Healthy Playing Fields, Inc.<sup>10</sup> (SHPFI) has gathered extensive information demonstrating the toxicity and environmental mobility of the various components of synturf and used tire surfaces, from plastic blades, to plastic or crumb rubber infill, to glues and surfactants. Many of the same toxins found in carpeting in general are even more of a problem for outdoor carpeting like synthetic-turf.<sup>11</sup> Real-world evidence and photographs show that many synturf installations send particles migrating across sidewalks and into public storm-drains which often have stormwater BMPs which are not designed to capture such small and mobile buoyant and partially buoyant materials or the chemicals associated with them. What's more, stormwater BMPs

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<sup>7</sup> [https://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/pdf/microplastics\\_final\\_report\\_v5\\_full.pdf](https://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/pdf/microplastics_final_report_v5_full.pdf)

<sup>8</sup> <https://echa.europa.eu/da/-/restriction-proposal-for-intentionally-added-microplastics-in-the-eu-update>

<sup>9</sup> Tian, Zhenyu, et al. "A ubiquitous tire rubber-derived chemical induces acute mortality in coho salmon." *Science* 371.6525 (2020): 185-18

<sup>10</sup> <https://www.safehealthyplayingfields.org>

<sup>11</sup> <https://healthybuilding.net/reports/1-eliminating-toxics-in-carpet-lessons-for-the-future-of-recycling>

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were never intended to excuse the voluntary and intentional discharge of pollutants into the stormsewer system.

After years of pointing out the hazards of these synthetic surfaces, it is striking that they are still being installed on public property. They are clearly in violation of a number of provisions of the County's MS4 permit:

- Any of these pollutants fall in the category of "non-stormwater discharges" that the County is required to minimize or prevent from passing into, through, or from its MS4 if they will render the waters harmful to "1. Public health, safety, or welfare;...and 4. Fish or other aquatic life." (Draft permit *Part VII.A.*).
- Under draft permit *Part VII.B. Duty to Mitigate*, the county is required to "take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment."
- And in *Part IV D.3, Illicit Discharge Detection and Elimination*, the county is required to either permit or eliminate all discharges into, through or from the MS4 that are not composed entirely of [clean] stormwater. To our knowledge, no synthetic turf or rubber mulch playground has been required to get a discharge permit by the county, nor has an enforcement action been issued for particle migration into the MS4.
- Finally, these surfaces are shedding an unknown but certainly significant amount of trash. Permit *Part IV.F .3.d. Anacostia Trash TMDL* requires the county to "reduce trash, floatables, and debris, and show progress toward achieving the annual trash reduction allocation required by the Anacostia trash TMDL." Permitting more surfaces made of highly mobile bits of plastic and rubber is a recipe for knowingly increasing, not decreasing, toxic, micro-scale trash pollution in the Anacostia and other watersheds.

**In light of the above information, we urge MDE to examine and regulate these Clean Water Act hazards much more closely, and we urge Montgomery County to immediately stop installing them on public property (i.e. public schools and parks) and stop permitting them in public rights-of-way (i.e. Ellsworth Place in Silver Spring).**

## X. Improved Salt Management Requirements for Deicing: A Positive Addition to the MS4 Permits

Thank you for including deicing as a component in the 2020 MS4 permits. Road salts are an emerging threat to the Chesapeake Bay Watershed. The use of road salts is accelerating faster than urban sprawl, meaning the use of road salts is accelerating. While we understand that some use of salt may be needed for safety controls, the pervasive overuse of salts can have significant negative effects on our waterways. Not only can salt damage the ecology of local waterways, but excessive chlorides in drinking water sources from road salts can also be a significant human health danger. For example, it was the excessive chlorides in the Flint River, the drinking water in Flint, Michigan, that caused the water to become corrosive and led to the leaching of lead from drinking water pipes. The University of Maryland Extension has highlighted the concerns of rising salinity levels in Maryland groundwater and aquifers. Salt in Maryland well water is an ongoing issue and is also a concern for people who need a low-sodium diet for health reasons. The provisions in these MS4 permits are important first steps to addressing the emerging threat to our region.

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## XI. New Tools to Prioritize Restoration Suitability and Equity

We are very supportive of DEP's new approach to building decision-support tools<sup>12</sup> that incorporate watershed plans, stream health, existing projects, and socioeconomic equity in planning future stormwater management projects. We appreciate DEP presenting these tools to SWPN on multiple occasions in 2020, and committing to using them in planning and contracting going forward.

The Stormwater Management Suitability Map prioritizes “areas that have little/no existing stormwater management, poor stream conditions, high amounts of impervious surfaces, flow to existing stream restoration projects, and require significant TMDL pollutant reductions.” The Stream Restoration Suitability Map prioritizes “areas where selecting a stream restoration project would have a higher likelihood of improving biology and ecosystem function, significant levels of TMDL pollutant reductions and has less areas of unmanaged stormwater to maximize long term success and stream stability.” If the Department indeed uses these new tools in these ways, we hope to see significant improvements in holistic stormwater management—with stream restorations occurring in those places with more upland retrofits, upland retrofits installed in places to support existing stream restorations, and investments generally targeted towards those areas most in need with a high likelihood of success. We are eager to see this approach implemented, evaluate its success, and ultimately hold the Department accountable for delivering on the potential of this new approach.

We are also eager to continue working with the Department on its equity assessment map and encourage MDE to support and disseminate lessons learned from this effort. We recommend that MDE provide a credit bonus to stormwater practices carried out in marginalized neighborhoods; this approach has been used in Washington state, where MS4 permits provide extra project credit for BMPs in overburdened communities.<sup>13</sup> EPA's EJSscreen mapping tool provides an easy- to-use resource for jurisdictions to identify areas that meet certain demographic criteria,<sup>14</sup> and this tool is incorporated into the Montgomery County equity map. Montgomery County is undertaking this effort without any promise of additional EIA credit or permit compliance from MDE, but if successful, MDE should ensure that this effort and lessons learned from it are replicated across the state and required in future permits, and should provide Montgomery County as much support as possible in implementation even now. Any such targeted focus on BMP implementation in marginalized communities must be accompanied by extensive community outreach to ensure that local concerns about green gentrification and other issues are addressed at the outset.

## XII. Public Outreach on Stormwater Projects

In addition to the public's role as taxpayer, many members of the public are directly or proximally impacted by MS4 requirements. SWPN recommends transparency in decision making processes and engaging the public in all steps of the implementation process.

We strongly recommend embedding collaborative outreach and engagement in the pre-design phases of specific stormwater management practices. Collaboration should occur between project contractors (or DEP) and the

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<sup>12</sup> Mapping tools available at <https://www.montgomerycountymd.gov/water/restoration/equity.html>.

<sup>13</sup> See Washington Department of Ecology, Phase I Municipal Stormwater Permit, Appendix 12 - Structural Stormwater Controls Project List, at 7 (“Multiply SSC point total by 0.10 for completed capital projects related to the MS4 which occur in overburdened communities.”), <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Municipal-Stormwater-Phase-I-Permit>.

<sup>14</sup> EPA, Environmental Justice Screening and Mapping Tool, <https://www.epa.gov/ejscreen>.

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neighborhoods potentially impacted by a project. There is some evidence that including engagement pre-design reduces costs, particularly as it can reduce time delays due to community concerns.

The concerns of most community members differ from those of managing agencies. While most agency staff are focused on reducing stormwater runoff or construction logistics, community members' concerns center on issues such as sidewalk access, changes to parking availability, or project aesthetics. Some community members include environmentalists, naturalists, and watershed group members particularly interested in the ecological ramifications of a project. Recognition and acknowledgement of community priorities and norms should figure prominently into each project. Social gratification at a neighborhood level can lead to good neighbor stewardship. Where there is common ground with community members' concerns, agencies have been effective in using that goal to build relationships. Flood management is an issue that both community members and agencies prioritize, so may be an effective co-benefit to highlight.

Outreach should be conducted in manners that are culturally relevant, moving beyond simple language translation to identify community champions who can broker relationships, determining the most appropriate means and style of communication, and recognizing the local knowledge of community members. SWPN is pleased by DEP's commitment to equity, including efforts to train staff, and recommends that DEP consult with external experts on culturally-relevant outreach and engagement as the agency builds its internal capacity. DEP may be able to draw on resources from across Montgomery County government and community partnerships, such as Health & Human Services, Housing and Community Affairs, the Office of Community Partnerships, Public Libraries, Recreation Department, and the Regional Centers.

## XIII. Conclusion

At the State and Chesapeake Bay level, SWPN (like our colleagues in the Choose Clean Water Coalition) believes that while this round of permits contains important improvements like the requirement for a salt management plan, that overall they are inadequate in many important ways. Maryland is going in the wrong direction in the stormwater sector, placing our 2025 Bay Restoration goals at risk; and at best, treading water and at worst, losing ground on local watershed protection and restoration. We make our recommendations both at the state and local level because we know that Montgomery County, via its DEP, DOT, Parks Department, and more, can do better. Montgomery County has already achieved 30% ISR reduction since 2005, including 20% in the last permit term. That is on its face evidence that we can do more than contemplated by this draft permit. And, the ISR metric itself is not the right one—while we have been building “acres” of ISR treatment, we have not been closing TMDL gaps at the same rate. Fundamentally, this is a question not for the county, but for the state to answer. You get what you measure. We have confidence that if MDE charged Montgomery County with reducing pollution, installing green infrastructure, and restoring local watersheds, with accountability and support including state grants and loans, we would achieve those goals.

We appreciate our partnership with DEP, which has been a strong working relationship for more than ten years through our Network. We are committed to continuing to push DEP not only to achieve state-mandated goals, but to do so in an ambitious, innovative way that delivers results for Montgomery County's streams *and* the Chesapeake Bay. And we stand ready to partner, support, and advise on the programs and projects that will lead us there, as well as continue to advocate for funding at the County Council.

If you have questions or comments about this letter, please contact Jeanne Braha ([jbraha@rockcreekconservancy.org](mailto:jbraha@rockcreekconservancy.org)) or Eliza Cava ([eliza.cava@anshome.org](mailto:eliza.cava@anshome.org)), co-Chairs of Stormwater Partners Network.

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Sincerely,

Organizational and individual members of Stormwater Partners Network:

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Director of Conservation  
Audubon Naturalist Society

Jeanne Braha  
Executive Director  
Rock Creek Conservancy

Kit Gage  
Advocacy Director  
Friends of Sligo Creek

Diana Conway  
President  
Safe Healthy Playing Fields, Inc.

Ginny Barnes  
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Caroline Taylor  
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cc: Montgomery County Department of Environmental Protection  
Montgomery Parks  
Montgomery County Executive Marc Elrich

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## APPENDIX: Friends of Sligo Creek Comments on Wheaton Branch Flood Mitigation Project

*SWPN includes the following very recent, project-specific letter from one of our member groups because it succinctly and locally illustrates the real-world context of many of our recommendations above. Note that it touches upon: stream stabilization/restoration, the critical importance of upland retrofits and green infrastructure, public communications, toxins, and more.*



DATE: January 15, 2021

FROM: Elaine Lamirande, Stormwater Chair, Friends of Sligo Creek

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SUBJECT: Comments on Wheaton Branch Flood Mitigation Project

Friends of Sligo Creek would like to suggest improvements and request clarifications regarding the Wheaton Branch Flood Mitigation Project. The Wheaton Branch stormwater ponds provide important wildlife habitat in Sligo Creek while mitigating the harmful effects of polluted runoff on the environment.

### **MORE STORMWATER MITIGATION UPSTREAM OF DENNIS AVE BRIDGE**

Please consider installing strategically-placed green infrastructures upstream of the area of concern and in the new lowered floodplain. These would provide year-round stormwater mitigation, control for the 100-year floods, and would become more effective as the vegetation within them matures. A low-impact cistern could also be considered to compliment the stormwater infrastructures to capture any additional runoff that poses a flood risk. Considering green infrastructure alternatives is consistent with the County's approach to integrate stormwater mitigation and stream restoration

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efforts into its development plans. It is DEP policy that upstream retrofits are considered a critical consideration for effective stormwater projects.

Please consider drafting an environmental impact statement for the Wheaton Branch floodwater mitigation project that considers longer term alternatives to the one proposed. The effects of climate change and more intense storm events need to be incorporated into the plans.

## **Replace concrete channel along Bucknell Drive with green infrastructure**

The plan should be expanded to address the total lack of infiltration for a lengthy stretch of Wheaton Branch along Bucknell Drive, from Windham Lane to Evans Parkway Park (Figure 1). The primitive concrete stream bed, stretching nearly 1,600 feet, dramatically increases the speed and volume of water rushing downstream towards the problem area near Glenhaven Drive and the stormwater ponds beyond. There is almost no point in "fixing" problems downstream as long as this major problem, and eyesore, goes unaddressed. The concrete stream bed feeds directly into Evans Parkway neighborhood park (Figure 2). The Evans Park pond should be examined to see it can be improved to reduce the impact of polluted sediment before approaching the proposed mitigation area.

## **Stabilize stream banks**

Stream bank stabilization along upstream channels such as at Etna Place should be examined (Figure 3). The minimal streamside vegetation makes these streambanks more susceptible to erosion during extreme rainfall events. A riparian zone of some kind on either side of the creek consisting of shrubby and herbaceous growth would encourage stream bank stabilization.

## **ADDRESS SEDIMENT/DREDGE MATERIAL TOXICITY RISKS**

The proposal includes dredging Cell 1 of the stormwater pond of polluted sediment collected from 770 acres of highly developed watershed. Dredge spoil should be tested for priority pollutants as defined by the Federal Clean Water Act (CWA) as well as for the toxicity characteristic as defined by the Federal Resource Conservation and Recovery Act (RCRA). Sediment in Lake Whetstone contained polycyclic aromatic hydrocarbons (PAHs, organic compounds with varied toxicity) the last time it was dredged. Where will the dredge be placed after removal? Will sediment be monitored in the future?

## **PROVIDE WATER METRICS TO RESIDENTS**

Residents downstream of the stormwater ponds are concerned that changes to the storage capacity of the ponds and upstream areas may negatively impact the integrity

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of the high-hazard earthen dam retaining the ponds, threatening their homes and safety. Information should be provided about the existing capacity of the ponds (in cubic feet of water), the projected increase in the volume following dredging of Cell 1, and the volume of the proposed lower flood plain water storage area above Dennis Ave. Residents should also be told the existing threshold level in Cell 3 that triggers outflow to Wheaton Branch below the downstream riser and the new, lower threshold level that will trigger outflow after the proposed work is completed.

Climate change is causing more extreme rainfall events, resulting in flashier storms. It is not just the total volume of water in a rain event, but the speed of rainfall and therefore instant volume as well as the speed of the flow that are concerning. Residents would like to know the current and projected flow rates after mitigation along the following sections of Wheaton Branch:

- concrete channel along Bucknell Drive
- proposed lower floodplain area just upstream of the Dennis Avenue bridge
- outflow from the riser in Cell 3

## **ADDRESS PROJECT IMPACT ON DOWNSTREAM AREA**

The current proposal does not address the effects of the project on Wheaton Branch downstream, particularly the area immediately downstream of the ponds. If more, faster water is released from the Cell 3 riser, it may damage the streambanks along Woodman Avenue. While the residents immediately upstream of the Dennis Avenue bridge have suffered flooding, the residents immediately below the stormwater ponds face the threat of a dam failure. The county should address their concerns since they have so much at stake.

## **CONCLUSION**

The Wheaton Branch Flood Mitigation project is an important step to reduce the damages caused by uncontrolled stormwater. The project could be more successful by looking beyond the immediate project area and incorporating green infrastructure projects both above and below the project area to slow stormwater even more. The project could gain community support by providing more information to the public regarding sediment toxicity testing, water volumes and flow rates.



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## FIGURES



*Figure 1. Concrete channel along Bucknell Drive.*



*Figure 2. Concrete channel feeds directly into Evans Parkway neighborhood park.*



*Figure 3. Wheaton Branch stream bank in need of stabilization.*