Coalition to Stop Stream Destruction

[redacted]

April 8, 2026

To: Montgomery County Council

Subject: Written testimony on FY27 Operating Budget

Position: AGAINST

Recommendation: Eliminate DEP and Parks salaries of people involved with the recommendation, selection, or administration of engineered stream "restorations"

References:

- FY27 Recommended Operating Budget and FY27-32 Public Services Program (PSP)[1]
- FY27 Recommended Operating Budget – ENVIRONMENTAL PROTECTION[2]
- 2027 Montgomery Parks Proposed Budget[3]

Dear Council President Fani-González, Vice President Balcombe, and Councilmembers:

In the FY27 Operating Budget, the Coalition to Stop Stream Destruction (CSSD) urges you to decrease funding for the Department of Environmental Protection (DEP) and Montgomery Parks in order to save our natural areas.

Specifically, salaries for personnel who promote, recommend, select, or administer engineered stream "restorations" should be eliminated. These personnel continue to waste precious tax dollars by promoting engineered stream "restorations" with no scientific basis for their need or purported benefits.

The AI query, "Would a public employee lying about the benefits of a project be considered waste fraud and abuse?" generated this answer: "**Yes, a public employee lying about the benefits of a project would be considered fraud**, as it involves intentional deception for personal or financial gain. This could also fall under waste if it leads to unnecessary expenditures or mismanagement of resources."

Exhibit A is the recent stream "restoration" propaganda video from DEP[4]. DEP's video is euphemistically called "Restoring Streams & Respecting Nature." DEP has a perverse way of respecting nature – civil engineering projects that destroy natural areas,

[1] https://apps.montgomerycountymd.gov/BASISOPERATING/Common/Index.aspx?FY=2027&VER=REC
[2] https://apps.montgomerycountymd.gov/BASISOPERATING/Common/Department.aspx?ID=80D
[3] https://www.mncppc.org/wp-content/uploads/2026/01/Fiscal-Year-2027-Montgomery-County-Proposed-Budget.pdf
[4] https://www.youtube.com/watch?v=A9b6ntWBaHU&t=2sv

converting streams into man-made stormwater conveyances using heavy equipment to clearcut steam-side forests, dig artificial channel shapes, and dump fill material into streams. A more accurate title for their video would be "Triumph of the Greenwashing Shills." A previous propaganda event sponsored by DEP on Jan. 12, 2022 was a webinar featuring a self-serving sales pitch by the representative of a large, engineered stream "restoration" company – a highly inappropriate County sponsored infomercial for the multi-billion dollar stream "restoration" industry. In DEP's recent video, among the many false claims and statements untethered from the science are the following:

- "Montgomery County is dedicated to improving the health of our waterways and forests and protecting public and private infrastructure through the process of stream restoration." First, there is no scientific evidence that engineered stream "restorations" improve the health of waterways. Second, protection of infrastructure and property protection projects can be done via spot repairs in tens of feet and have nothing to do with restoring streams. That is why they are called stream restorations, not infrastructure restorations.
- "When it rains, most of the rainwater from paved surfaces flows into storm drains. Stormwater runoff travels from these drains through underground pipes and them pours into our streams very quickly and in large amounts which is a major cause of stream erosion." Yet, DEP's engineered stream "restorations" do not address this root cause of stream erosion. Doing an engineered stream "restoration" instead of controlling stormwater BEFORE it enters a stream is like trying to repair a water-damaged home interior while the roof is still leaking. This is why engineered stream "restorations" need expensive repairs after storms at taxpayers' expense.
- "Montgomery County carries out stream restoration projects to better manage surging stormwater and repair the harm caused by severe erosion." First, since DEP does not control the root cause of stream erosion, these projects will be eroded away by future storms. Second, DEP's unattainable goal to restore streams to "natural" or "historical" conditions is impossible given today's land use and climate. The Chesapeake Bay Program's Comprehensive Evaluation of System Response (CESR) Report[5] written by more than 50 experts says that "The Bay of the future will be different from the Bay of the past because of permanent and ongoing changes in land use, climate change, population growth, and economic development." That is why it is also impossible to restore local streams to "natural" conditions. The question becomes, why should we destroy an existing ecosystem using an engineered stream "restoration" to try to recreate "natural" conditions which we know cannot happen?

[5] https://www.chesapeakebay.net/what/publications/achieving-water-quality-goals-in-the-chesapeake-bay-a-comprehensive-evaluation-of-system-response-cesr

- "By taking a very thoughtful and strategic approach to stream restoration, the county ensures limited negative disturbances to plants, wildlife, and our communities." DEP would have us not believe what our eyes see in stream "restoration" videos[6]. We see stream-side forests being clear cut, wildlife habitat being destroyed, and property values being damaged as their viewsheds are destroyed.
- "…plans for stream restoration are reviewed by federal, state, and local agencies to ensure that the project meets all environmental laws and regulations." DEP falsely implies that because a project was reviewed and permitted, that doing it is the right thing. We call that "lawful but awful" since the science does not support any claims of stream "restoration" benefits.
- "We only remove trees that are dead, dying, invasive, or trees that need to be removed to access the streams." This is greenwashing since engineered stream "restoration" projects are not necessary in the first place. DEP is attempting to justify tree removals when the fact is that no trees would have to be cut if these misguided projects are not done. Log piles of cut mature trees can be seen in the video of the Glenallan stream "restoration"[7]. Incomprehensibly, DEP sees dead and dying trees as a nuisance to be removed rather than essential components of a complete ecosystem. As Travis Audubon puts it, "Dead trees are 'home sweet home' to woodpeckers."[8]
- "…once a project is done with construction, we want to make sure …the invasives are being kept away." But DEP has admitted, and we have seen, that it cannot control the growth of invasive plants post-stream "restoration" construction. This can be seen at any county stream "restoration" project such as the ones at Falls Reach and Breewood. These projects disturb large swathes of soil which is a major cause of invasive plant spread. A 10/18/2021 Montgomery County DEP fact sheet about their Falls Reach, Potomac stream "restoration" states "Vegetative cover in the stream riparian area has successfully been reestablished…." However, a site visit on 10/24/2023 showed that four and a half years after project completion in March 2019, the forest floor was overrun with the non-native invasives Japanese Stiltgrass (*Microstegium vimineum*) and Hairy Jointgrass (*Arathroxon hispidus*).
- The DEP video proudly shows project photos of Falls Reach in Potomac (2019), Booze Creek in Bethesda (2022), Flint's Grove in North Potomac (2019), Donnybrook in Siver Spring (2015), Hollywood Branch in Colesville (2015). However, the Falls Reach project is completely overrun with invasive plants; the Booze Creek project required a $3.6M repair; the Flint's Grove project had

[6] https://www.youtube.com/@EngineeredStreamRestoration
[7] https://www.youtube.com/watch?v=91O2bAdT8PY
[8] https://travisaudubon.org/murmurations/dead-trees-are-home-sweet-home-to-woodpeckers

undercut streamside trees that would have fallen into the streams as a natural process and would have been beneficial since the small damming effect would have created new types of habitats, new aerating riffles, etc.; the Donnybrook project shows the steam filled with dumped rocks and plastic liners, edges lined with dumped rocks, and banks clearcut of trees; and the Hollywood project resulted in bulldozers scaping the forest floor bare, armoring sections of the stream with boulders, removing a large stretch of riparian, stream-side forest, and then replanting with a few saplings.

If you have not seen the destruction caused by engineered stream "restorations" and to see how DEP claims to be "respecting nature," watch a few short videos[9]. See also the photo below of the Glenallan engineered stream "restoration" near Brookside Gardens.

We must protect our county's precious remaining natural areas. Unfortunately, DEP and Parks personnel are destroying them with engineered stream "restoration" projects that convert them into stormwater management facilities for Municipal Separate Storm Sewer System (MS4) permits and mitigation projects.

See **a one page fact sheet** with references at https://drive.google.com/file/d/1_xTGc8n9RcmVysFBqqj7TDVnaRo48lCw/view?usp=sharing.

[9] https://www.youtube.com/@EngineeredStreamRestoration

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DEP & Parks personnel promote engineered stream “restorations” that kill hawks, box turtles, etc.

Engineered stream “restorations” are killing hawks per the photo below taken on March 18, 2026, at the Longfellow stream “restoration” in Columbia. This Cooper’s Hawk died when its talons became entangled in the standard erosion control netting used to stabilize stream banks for engineered stream “restorations”.

Stream restorations also kill box turtles as evidenced by the below photo of a trapped box turtle from the Whetstone Run engineered stream “restoration” in Gaithersburg. It probably starved to death with its head sticking out.

People have also reported seeing trapped snakes as well.

County should not fund DEP & Parks employees who claim false benefits of stream "restorations".

The proposed Operating Budget is simply throwing tax dollars away by paying DEP and Parks personnel to promote misinformation and disinformation about engineered stream "restorations" and to administer these unnecessary and misguided projects that destroy existing natural areas.

Would the Council fund DOT personnel who claim, without scientific evidence, that roads should be paved with marshmallows because it will last 100 years?

DEP & Parks employees are not being honest with taxpayers and elected officials. The Council should not fund the salaries of DEP & Parks employees who promote misinformation and disinformation by parroting scientifically disproven talking points from the $25B engineered stream "restoration" industry. Yet this is exactly what the proposed Operating budget proposes to do.

That DEP and Parks are promoting disinformation and misinformation about the purported benefits of engineered stream restorations is not our opinion. This is what the peer-reviewed published science says. This is what the Chesapeake Bay Expert Panel Reports say. DEP and Parks have never refuted our assertions with valid scientific evidence. What they give the public, the County Executive, and the County Council are anecdotes, unsubstantiated claims, and arm-waving. What they do not provide is scientific backing for any purported benefits of engineered stream "restorations".

The Council should demand that DEP and Parks provide independent scientific evidence to support their claims about the benefits of engineered stream "restorations" before giving them the proposed $16.5M in DEP salaries and benefits [10] and the $7.8M in Parks personnel costs that is in the proposed operating budget.

Examples of DEP & Parks disinformation in their SB688/HB1425 testimony.

The most recent examples of DEP and M-NCPPC/Parks disinformation can be found in their March 3, 2026, testimonies against the stream "restoration" accountability bill SB688/HB1465 that was supported by the Sierra Club (see Appendices 1 and 2 with our rebuttals). We are quite familiar with this bill, having been on sponsoring Senator Mary Washington's panel testifying in support of the bill (please see our written testimony) on March 3 in Annapolis. The following are just a few examples from the DEP and Parks

[10] https://apps.montgomerycountymd.gov/BASISOPERATING/Common/Department.aspx?ID=80D

testimonies which mirrors the same disinformation that DEP and Parks spew in Montgomery County:

- DEP says that many out-of-stream stormwater control practices are significantly more expensive to implement than stream restoration. This is a typical example of DEP greenwashing. DEP cherry picked a few more expensive examples but neglected to mention that 20 out-of-stream project types are cheaper than stream restorations per Maryland Department of the Environment's (MDE) Annual Report on Financial Assurance Plans[11].

- DEP and Parks say that there are not enough sites for out-of-stream stormwater control projects, but they have never actually done an alternatives analysis.

- DEP and Parks falsely state as fact that restricting Montgomery County from using stream restoration to meet regulatory obligations would result in tens of millions of dollars in additional costs. Not "might" or "could". DEP and Parks ignore that there are the 20 out-of-stream project types that are cheaper than stream restorations This is an example of DEP blatantly greenwashing elected officials with arm-waving, but no factual analysis. Again, DEP and Parks ignore the millions they spend, or will have to spend, to repair failed stream "restorations."

- DEP falsely claimed that engineered stream "restorations" provide "essential services to communities." In fact, stream "restorations" clearcut stream-side forests while not stopping stream erosion or improving the ecology according to the overwhelming scientific evidence. In contrast to engineered stream "restorations," since out-of-stream projects can be built in already disturbed developed areas they provide co-benefits such as reducing urban flooding and heat islands, providing green spaces, increasing property values, and protecting streams and floodplains from toxins in stormwater.

  Regarding DEP's claim that engineered stream "restorations" provide "essential services" such as infrastructure and property protection (e.g., exposed sewer lines and backyard erosion), DEP consistently promotes the need for stream "restorations" by falsely claiming they are needed for infrastructure and property protection projects. The fact is that infrastructure and property protection projects

[11] https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/FAP-WPRP/2022%20Stormwater%20Financial%20Assurance%20Plan%20Annual%20Report%20to%20Governor_%20MSAR%20%23%2010954%2010.18.2022.pdf

can be done via spot repairs in tens of feet without a stream "restoration" in hundreds or thousands of feet.

- DEP and Parks falsely state that stream "restorations" are needed for public safety improvements. Infrastructure protection projects, not engineered stream "restorations", are done for public safety improvements. The purpose of MDE's 65 approved stormwater control practices, one of which is stream "restorations," is to meet regulatory requirements to improve water quality. Public safety issues such as exposed sewer lines and backyard erosion (examples of infrastructure and property protection issues) are done via spot repairs without the need for, and having nothing to do with, stream "restorations."

- DEP and Parks ignore the published science[12] that analyzed over 700 engineered stream "restorations" to show that water quality and ecological function are not improved and are sometimes worse. A few claims of successful projects do not disprove the preponderance of the scientific evidence.

Debunked Parks & DEP disinformation about their Glenallan engineered stream "restoration".

Among the many falsehoods and claims made in writing to the public by the DEP-Parks team about the Glenallan stream "restoration" which are debunked in my Capital Budget testimony[13] (and in Appendices 3 and 4) are the following:

- They falsely claim that stream "restoration" is "a science-backed practice recognized …to provide both water quality and ecological benefits."

[12] Palmer, M. A., K. L. Hondula, and B. J. Koch, University of MD, 2014, "Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,", Annu. Rev. Ecol. Evol. Syst. 2014. 45:247-269. (https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf);
Hilderbrand, Robert H., et. al.,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://cbtrust.org/wp-content/uploads/Hilderbrand-et-al_Quantifying-the-Ecological-Uplift.pdf;
Southerland, M., et. al., 2021, "Vertebrate Community Response to Regenerative Stream Conveyance Restoration as a Resource Trade-Off," CBT Research Grant; https://cbtrust.org/wp-content/uploads/FINAL-Report-for-18002-Tetra-Tech-CBL-CBT-RR-Vertebrates-in-RSCs-30SEP2021-Submitted-to-CBT.pdf
Carr, J., Hart, D., McNair, J., 2006, "Compilation and Evaluation of Stream Restoration Projects: Learning from Past Projects to Improve Future Success," The Patrick Center for Environmental Research, The Academy of Natural Sciences of Drexel University, Report Submitted to the William Penn Foundation. https://ansp.org/research/environmental-research/projects/restoration/

[13] CSSD FY26 Capital Budget Testimomy:
https://drive.google.com/file/d/1DTOOLLm_Aei8lRpPoxPpnFvnTXWJW8eq/view?usp=sharing

- They falsely claim that "These projects have been shown to improve water quality, reduce erosion… and enhance habitat."
- They falsely imply that stream "restorations" are *required* to meet TMDL and MS4 permit requirements.
- They falsely claim that "stream restoration projects involve temporary disturbances" rather than permanent or long-term ones.
- They fail to acknowledge that the published scientific literature shows that stream "restorations" do not stabilize streams, improve water quality, or improve ecological function.
- They fail to act on the knowledge that stream "restorations" do not stop the root cause of stream erosion - uncontrolled stormwater from developed areas that firehoses into streams.
- They falsely claim that they have the full support of all adjacent property owners.
- They falsely imply that because the project was permitted, that doing it is the right thing. We call that "lawful but awful."
- They falsely claim that tree removal is minimal and that the remaining trees are adequately protected.
- They falsely imply that projects will have a successful invasives management plan.
- They falsely imply that "a robust planting plan" will mitigate the damage done by clearcutting the original forest.
- They fail to disclose that the "geotextile materials" being used is actually plastic sheeting which will break down into microplastics when it is washed-out and exposed to light.
- They falsely claim that there is not enough upland space for out-of-stream projects without having actually done the alternatives analysis.

DEP & Parks personnel promote disinformation counter to the scientific facts.

DEP and Parks' attack on truth and science rivals what the Trump administration is doing at the federal level.

DEP and Parks cannot refute the fact that published, peer-reviewed scientific papers analyzed over 700 stream "restorations" and concluded that stream "restorations" water quality and ecological function are not improved and are sometimes worse. A few claims of "successful" projects do not disprove the preponderance of evidence – that is the way science works. Yet a DEP web page states, "By restoring streams to their natural state, we can help improve water quality, …protect wildlife habitats, and promote the overall health of the environment. These projects focus on stabilizing eroded streambanks, reducing pollution, and enhancing biodiversity."[14] None of these statements are true. DEP cannot back up those statements with factual data. In a very Orwellian fashion, they would have us not believe our eyes such as what we see in the photo below of their Glenallan project.

(Glenallan Tributary stream "restoration" near Brookside Gardens, 11/18/2024)

DEP & Parks false claims of stream bank stabilization is based on debunked report.

DEP and Parks assertion that engineered stream "restorations" stabilize stream banks is based solely on pre-construction theoretical calculations and cursory post-construction visual inspections. Neither DEP nor Parks have provided hard data from independent sources to back up their claims.

[14] https://mygreenmontgomery.org/2025/all-about-stream-restoration-watch-the-video/

In fact both DEP and Parks base their claims of stream bank stabilization on a debunked Chesapeake Bay Program Expert Panel Report[15]. First, the report has several authors who are stream "restoration" industry employees - a clear conflict of interest.

Second, the report calculates pre-construction rates of erosion using theoretical guesswork that even the authors say is not reproducible. They acknowledge that stream "restorations" do not stop erosion, so they decrease the calculated MS4 permit credits by an arbitrary 50% which is a guess on top of a guess. And their recommended "science-based" monitoring is a quick visual inspection.

DEP makes false claims on their web sites.

An example of DEP's false claims to the public is their web site that says steam "restorations" provide benefits "…by reducing stream bank erosion, minimizing the down-cutting of stream bed, and restoring aquatic ecosystems (natural stream system)."[16] Again, none of these statements are true according to the published science and ground observations. DEP cannot support this disinformation with factual data.

Parks makes false claims on their web sites.

A Parks web site[17] falsely claims that their "Stream Restoration Program is intended to restore degraded stream channels and protect adjacent infrastructure…." First, Montgomery Parks' unattainable goal to restore streams to "natural" or "historical" pre-colonial conditions is impossible given today's land use and climate. The Chesapeake Bay Program's Comprehensive Evaluation of System Response (CESR) Report[18] written by more than 50 experts says that "The Bay of the future will be different from the Bay of the past because of permanent and ongoing changes in land use, climate change, population growth, and economic development.". That is why it is also impossible to restore local streams to pre-colonial conditions. The question becomes, why would we want to destroy an existing ecosystem to try to recreate pre-colonial conditions which we know cannot happen?

Second, Parks falsely conflates the need for stream "restorations", ostensibly done for the benefit of streams, with infrastructure and property protection projects. This is a common ploy, the same one used by DEP, to disingenuously justify doing a stream "restoration." It uses fearmongering to blur infrastructure and property protection (e.g., exposed sewer

[15] https://chesapeakestormwater.net/wp-content/uploads/2022/07/9928-1.pdf
[16] https://www.montgomerycountymd.gov/DEP/water/clean-water-montgomery/watershed/stream-restoration.html
[17] Stream Restoration & Sustainable Outfall Stabilization Program, https://montgomeryparks.org/projects/directory/stream-restoration-program/
[18] https://www.chesapeakebay.net/what/publications/achieving-water-quality-goals-in-the-chesapeake-bay-a-comprehensive-evaluation-of-system-response-cesr

lines and backyard erosion) with the purpose of a stream "restoration" which is to improve water quality and stream ecology and to stop stream erosion. Targeted spot-hardening of sewer lines, for example, can be done in the immediate area of the erosion problem – this does not justify the hundreds or thousands of feet of some stream "restorations.

The Parks web site[19] states that "The prevention of continued erosion and improving the aquatic habitats in our local eco-systems are the key goals of our stream restoration program." As with the DEP web site, none of these statements are true according to the published science and ground observations. DEP cannot support these assertions with factual data.

DEP & Parks falsely deny that their engineered stream "restoration" clearcut stream-side forests.

For example, the photos below and a **video of the Glenallan stream "restoration"**[20] show that the joint DEP-Parks project is clear cutting forests (what DEP calls "careful protection of trees"[21]) for a misguided engineered stream "restoration" project.

[19] [19] Stream Restoration & Sustainable Outfall Stabilization Program, https://montgomeryparks.org/projects/directory/stream-restoration-program/

[20] https://www.youtube.com/watch?v=91O2bAdT8PY

[21] 12/19/2024 note from Montgomery County Department of Environmental Protection (DEP) to Cathy Lemp regarding CSSD's call to ban stream "restorations."

(Above: examples of what DEP calls "careful protection of trees"[22] at the Glenallan Tributary engineered stream "restoration" near Brookside Garden from ***video of the Glenallan stream "restoration"****)*

DEP & Parks falsely claim that engineered stream "restorations" stop erosion.

That engineered stream "restorations" do not stop erosion is evidenced by the fact that they are being damaged by post-construction storms and then require expensive repairs. For example, some washed-out projects in Montgomery County include:

- Old Farm Creek in North Bethesda (scheduled to be repaired for $800K).
- Grosvenor Luxmanor in North Bethesda (scheduled to be repaired in 2025 for $4.8M).
- Lower Booze Creek in Potomac (repaired for $3.6M).

DEP says these examples of damaged projects are cherry-picked,[23] yet they have not provided any evidence to the contrary. To prove their claim, both DEP and Parks need to make public their list of engineered stream "restoration: projects, which ones have been washed out and need repair, and what type and number of storm events (e.g. 1-year, 10-year, 100-year storms) each project has experienced since construction. To claim, for example, that a certain project is "storm-proof" if it has only been subjected to only 1-year storms would be an egregious claim.

The major cause of excessive stream erosion is uncontrolled stormwater runoff from impervious surfaces like roads, roofs, parking lots, etc. that firehoses into steams. Doing an engineered stream "restoration" instead of controlling stormwater BEFORE it enters a stream is like trying to repair a water-damaged home interior while the roof is still

[22] 12/19/2024 note from Montgomery County Department of Environmental Protection (DEP) to Cathy Lemp regarding CSSD's call to ban stream "restorations."
[23] Statement by DEP at public site visit to the planned Grosvenor Luxmanor stream "restoration" sites.

leaking. This is why engineered stream "restorations" need expensive repairs after storms.

Common sense dictates that stormwater damage to streams needs to be addressed at its source, not in streams themselves, by using out-of-stream stormwater control practices such as permeable pavement, bioretentions, rain gardens, tree planting, etc. on both public and private land. There is evidence[24] that, once out-of-stream stormwater is controlled, the streams will self-heal. Will they look like pre-colonial streams? No. Will they be functioning ecosystems that provide ecosystem services like carbon sequestration and wildlife habit? Of course.

DEP & Parks promote engineered stream "restorations" which counteract County climate goals.

DEP and Parks personnel promote engineered stream "restorations" that destroy countless trees - the exact opposite of the county's stated goal in its Climate Smart Campaign: "Plant a tree; trees remove carbon from the air, cool the planet, provide habitat and beautify our neighborhoods."[25]

In addition, stream "restorations" do the exact opposite of the county's Climate Action Plan which has a goal to "Retain, increase, and restore terrestrial ecosystems including forests, meadows, wetlands, green spaces, and urban trees."[26] DEP's website states that "Trees contribute to the economic and social vitality of every community. Trees clean the air and water, reduce the cost of cooling and heating homes and businesses, increase biodiversity, and increase our general sense of well-being." And yet, hypocritically, DEP and Parks continue to promote the clearcutting of countless trees, shrubs, and other forest plants in our natural areas for unnecessary engineered stream "restorations." That is a gross mismanagement of county funds.

DEP & Parks personnel mislead public while converting natural areas into stormwater conveyances.

[24] "The Self-Recovery of Stream Channel Stability in Urban Watersheds due to BMP Implementation," by Lisa Fraley McNeal, Bill Stack, et. al., (https://cbtrust.org/wp-content/uploads/Self_Recovery_of_Stream_Channel_Stability_Final_Draft_03-23-21.pdf)

[25] Montgomery County Launches Climate Smart Campaign with the Slogan 'BIG CHANGE Starts Small'
For Immediate Release: Tuesday, January 28, 2025
https://www2.montgomerycountymd.gov/mcgportalapps/Press_Detail.aspx?Item_ID=46483

[26] MONTGOMERY COUNTY CLIMATE ACTION PLAN, Building a Healthy, Equitable, Resilient Community, JUNE 2021, https://www.montgomerycountymd.gov/climate/Resources/Files/climate/climate-action-plan.pdf

The science is clear and overwhelming that, unlike the false claims by DEP and Parks, engineered stream "restorations" do stop stream erosion, do not improve water quality and do not improve stream ecology. Rather than doing what is best for our natural areas, DEP & Parks are using engineered stream "restoration" construction projects to help meet their MS4 permits and for mitigation projects without regard for the negative environmental consequences.

DEP & Parks are throwing our natural areas under the bus to create engineered stormwater conveyances for MS4 permit and mitigation credits instead addressing the root cause of excessive stream erosion by controlling stormwater runoff before it firehoses into and erodes our streams.

This could be done upland in out-of-stream areas such as public spaces and road rights-of-way. DEP and Parks could also collaborate with private landowners to pay for upland stormwater control projects on their property for MS4 permit credit.

The County should pass stronger stormwater control regulations.

The County must pass laws to require the private sector to pull their own weight by requiring more on-site stormwater control for new and redevelopment above current state requirements. Currently, the private sector dumps their stormwater into and degrades our public streams – the taxpayers are then required to fix the problem.

We have heard the false narrative that the builders will all go to Fairfax County every time that business is asked to contribute their fair share. It is time our elected representatives put our quality of life over the profits of private landowners and the development industry.

Facts should matter in Montgomery County, unlike in the Trump administration.

We should not fund the proposed $16.5M in DEP salaries and benefits and the $7.8M in Parks personnel costs for people who are providing untrue information to the public about the purported need and benefits of engineered stream "restorations". In most private companies, misrepresenting the facts would be grounds for dismissal.

Therefore, we ask for the elimination from the Operating budget of the salaries and benefits of DEP and Parks personnel who have been providing disinformation to the public and to elected officials about the bogus benefits of engineered stream "restorations" and who have been involved with the recommendation, selection, or administration of engineered stream "restorations"

Thank you for your consideration.

Sincerely,

Kenneth Bawer
Coalition to Stop Stream Destruction

APPENDIX 1: CSSD comments on DEP's UNFAVORABLE Testimony on Stream Restoration Bill SB 688

8 Cleveland Ct.
Rockville, MD 20850

March 8, 2026

TO: Montgomery County Executive Marc Elrich and County Councilmembers

SUBJECT: Retract County's UNFAVORABLE Testimony on Stream Restoration Bill SB 688

Dear County Executive Elich, Council President Fani-González, Vice President Balcombe, and Councilmembers:

The Coalition to Stop Stream Destruction (CSSD) calls on you to issue a retraction or repudiation of the County's shameful unfavorable testimony, written by the Department of Environmental Protection (DEP), on Stream Restoration bill SB 688.

Please read our own FAVORABLE SB 688 testimony (which has footnoted references) and click here to see videos showing the destructive steam "restorations" that DEP supports and on which they squander tax dollars.

We are quite familiar with this bill, having just been on sponsor Senator Mary Washington's panel testifying in support of the bill on March 3 in Annapolis.

Almost the only accurate information in DEP's testimony is the name of the bill. DEP's testimony on SB 688 is an embarrassment which misinterprets the bill, includes disinformation on the purported benefits of engineered stream "restorations" and uses unsubstantiated speculation about the impacts of the bill with no supporting evidence. DEP's intent is to continue its disastrous "damn the environment, full speed ahead" use of destructive engineered stream "restorations".

We have traded emails and claims over the years with DEP and Parks, and they have never disproved any of our assertions with valid, science-based facts. Here is one of our rebuttals to DEP's disinformation.

The following provides DEP's Bill 688 testimony and our responses:

DEP testimony: Senate Bill 688 would prohibit the Maryland Department of the Environment (MDE) from allowing Municipal Separate Storm Sewer System (MS4) permit restoration and Total Maximum Daily Load (TMDL) credit for projects that involve in-stream construction.

> CSSD response: This is false. The bill only requires a common-sense out-of-stream alternatives analysis to determine the feasibility of using less destructive out-of-stream projects instead of engineered stream "restorations" so that the best project is selected.

DEP testimony: The bill also creates an unreasonable level of work to perform any in-stream work completed not for credit but for the protection of infrastructure or for public safety.

> CSSD response: This is a false representation of the bill. First, DEP does not define "an unreasonable level of work" which is typical of DEP arm-waving and sowing FUD factors – Fear, Uncertainty, and Doubt.
>
> Second, the bill specifically allows for in-stream projects when "THE PROPOSED PROJECT IS NECESSARY TO ADDRESS DOCUMENTED PUBLIC SAFETY OR INFRASTRUCTURE CHALLENGES THAT CANNOT REASONABLY BE ADDRESSED THROUGH NON–STREAM–DISTURBING PRACTICES."
>
> Apparently, DEP considers any level of work to justify a project for "protection of infrastructure or for public safety" to be unreasonable.

DEP testimony: SB688 would prohibit MDE from approving stream restoration projects that rely on in-stream construction or the mechanical alteration of a stream unless non-stream-disturbing stormwater management practices have been evaluated and found to be technically infeasible.

> CSSD response: This bill requires a non-stream-disturbing alternatives analysis. It is regrettable and shocking that the Department of Environmental Protection does not consider this to be a reasonable way to protect the environment.

We have exposed the destructive nature of DEP's stream "restorations" with our videos and presentations. And stream restorations are being washed out by uncontrolled upland stormwater runoff which is the root cause of stream erosion. As a result, taxpayers are paying millions of dollars for repairs such as the $3.6M repair of the Lower Booze Creek stream restoration in Potomac and the following damaged stream "restorations" around the region:

- Montgomery County (Josephs Branch, Cabin John Creek, Long Branch, Snakeden Branch, the Bedfordshire project, Old Farm Creek Tributary, the Grosvenor-Luxmanor project, Northwest Branch, Lower Booze Creek)
- Gaithersburg (tributary to Great Seneca Creek),
- Washington County (Block Rock Run),
- Baltimore City (Stony Run),
- Anne Arundel County (Annapolis Landing project, Bacon Ridge Branch),
- Columbia (Longfellow stream),
- Reston, VA (The Glade, Upper Snakeden Branch),
- Arlington, VA (Donaldson Run),
- Fairfax, VA (Little Pimmit Run).

This is not an exhaustive list - these are just the ones we know about.

DEP testimony: This language is inappropriately restrictive in requiring non-stream-disturbing stormwater management practices be employed first without consideration of costs, project feasibility, private property rights, and administrative convenience.

CSSD response: This is DEP's typical arm-waving rhetoric foisted on the public and elected officials without any factual supporting evidence. First, there are 20 non-stream-disturbing stormwater management practices that are cheaper than stream restorations, so an alternatives analysis will include comparative costs.

Second, the bill explicitly requires the evaluation of project feasibility which would include an evaluation of the need for any private property locations. To date, DEP has never provided hard data showing that private property would be required to meet any regulatory requirements.

Third, DEP's current modus operandi is that "administrative convenience" trumps environmental considerations. Hence these examples of destructive engineered stream "restorations". DEP should be reminded that they are the Department of the Environment, not the Department of Administrative Convenience.

DEP testimony: Counties and MDE each have a responsibility in the public interest to deploy limited taxpayer resources cost effectively and to comply with MS4 permit requirements and TMDL pollution reduction obligations.

CSSD response: We agree that governments have a fiscal responsibility. But DEP has never done the alternative analyses to show whether out-of-stream projects are more cost effective in meeting our MS4 permit and TMDL obligations. DEP conveniently ignores the millions of tax dollars being used to repair failed engineered stream "restorations." For example, DEP spent $3.6M to repair the Lower Booze Creek stream "restoration" in Potomac.

DEP testimony: Many of the non-stream-disturbing stormwater management practices, such as upland green infrastructure, are significantly more expensive to implement than stream restoration (stream restoration costs approximately $80,000 per impervious acre vs $250,000 per impervious acre for green infrastructure).

CSSD response: This is a typical example of the greenwashing that DEP "inflicts" on the public and elected officials. DEP cherry picks a few more expensive examples, but neglects to mention that 20 out-of-stream project types are cheaper than stream restorations per Maryland Department of the Environment's (MDE) Annual Report on Financial Assurance Plans.

DEP testimony: Restricting Montgomery County from using stream restoration to meet regulatory obligations would result in tens of millions of dollars in additional costs.

CSSD response: This is a fabrication. First rather than restricting the use of stream restorations this bill says, "If you prove it works, you can use it."

Second, DEP presents as a fact that the bill "would result in tens of millions of dollars in additional costs." Not "might" or "could". DEP ignores that

there are the 20 out-of-stream project types that are cheaper than stream restorations This is an example of DEP blatantly greenwashing elected officials with arm-waving, but no factual analysis. Again, DEP ignores the millions it spends to repair failed stream "restorations."

DEP testimony: Failure to meet these requirements could subject the County to fines, administrative penalties, and further mandatory restoration actions.

CSSD response: DEP is simple stating the law. Everyone already knows the consequences of failure to abide by written law.

DEP testimony: This bill also imposes new requirements for stormwater management plans associated with stream restoration projects. These requirements, including mandating full watershed studies considering non-stream-disturbing alternatives, would increase project planning costs and delay essential services to communities.

CSSD response: This is a common-sense requirement. First, if a destructive stream "restoration" is being proposed, residents have a right to demand that DEP provide justification for the destruction of our natural areas instead of using non-stream-disturbing alternatives.

Second, any increased project planning costs could be offset by the selection of less expensive non-stream-disturbing alternatives which do not require expensive repairs like the $3.6M to repair the Lower Booze Creek stream "restoration" in Potomac. Rather than simply believing DEP's declaration that this bill "would increase project planning costs," they should have to prove it via the alternatives analysis required by this bill.

Third, DEP is greenwashing by saying that stream "restorations" provide "essential services to communities." In fact, stream "restorations" clearcut stream-side forests while not stopping stream erosion or improving the ecology according to the overwhelming scientific evidence (see or testimony).

In contrast to engineered stream "restorations," since the alternatives can be built in already disturbed developed areas, they provide co-benefits such as reducing urban flooding and heat islands, providing green spaces, increasing

property values, and protecting streams and floodplains from toxins in stormwater.

Finally, regarding "essential services" such as infrastructure and property protection (e.g., exposed sewer lines and backyard erosion). DEP consistently promotes the need for stream "restorations" by falsely claiming they are needed for infrastructure and property protection projects. The fact is that infrastructure and property protection projects can be done via spot repairs in tens of feet without a stream "restoration" in hundreds or thousands of feet.

DEP testimony: Many stream restoration sites are experiencing severe erosion; delaying or complicating their restoration would not only place ecological resources at greater risk but also deprive surrounding communities of needed environmental and public safety improvements.

CSSD response: DEP continues to show a profound disregard for both environmental principles and the published scientific literature. DEP continues to falsely promote the disproven concept that a stream "restoration" fixes the problem of continued stream erosion.

First, the cause of stream erosion is stormwater runoff from impervious surfaces such as roofs and roads that firehoses into streams. Stream "restorations" do nothing to fix this as evidenced by the numerous failed projects in the county. This is like having a leaking roof that damages the furniture and carpet, yet the homeowner buys new furniture and carpet but doesn't fix the roof. This is exactly what stream "restorations" are doing – trying to fix the stream while the source of the problem from uncontrolled stormwater is not being fixed.

Second, DEP continues to promote disinformation that destructive stream "restorations" are better from the environment than upland projects like rain gardens and bioswales in already disturbed areas that will actually address the root cause of stream erosion. DEP's own destructive stream "restorations" are what "place ecological resources at greater risk"

Finally, DEP falsely states that stream "restorations" are needed for public safety improvements. Only infrastructure protection projects are done for public safety improvements. The purpose of MDE's 65 approved stormwater

control practices, one of which is stream "restorations," is to meet regulatory requirements to improve water quality. Public safety issues such as exposed sewer lines and backyard erosion (examples of infrastructure and property protection issues) are done via spot repairs without the need for, and having nothing to do with, stream "restorations."

DEP testimony: The use of stream and floodplain restoration are essential tools for recovering the hydrological and ecological functions of waterways that have been degraded over time by land development.

CSSD response: First, DEP ignores the published science that analyzed over 700 engineered stream "restorations" to show that water quality and ecological function are not improved and are sometimes worse. (Please see our written testimony for links to these papers.) A few claims of successful projects do not disprove the preponderance of the scientific evidence.

Second, apparently DEP did not read the CESR report. DEP's unattainable goal to recreate "natural" or "historical" pre-colonial conditions is impossible given today's land use and climate. The Chesapeake Bay Program's "Comprehensive Evaluation of System Response" (CESR) report written by more than 50 experts states that "The Bay of the future will be different from the Bay of the past because of permanent and ongoing changes in land use, climate change, population growth, and economic development." Likewise, it will be impossible to restore local streams to pre-colonial conditions.

In addition, there is evidence that, once out-of-stream stormwater is controlled, the streams will self-heal. Will they look like pre-colonial streams? No. Will they be functioning ecosystems that provide ecosystem services like carbon sequestration and wildlife habit? Of course.

DEP testimony: These [stream and floodplain] restoration approaches have been rigorously evaluated within the Chesapeake Bay watershed by multiple Chesapeake Bay Program Expert Panels, representing a broad cross-section of the scientific community.

> CSSD response: This is disinformation. Clearly, DEP has not read these Expert Panel Reports. First, the reports have several authors who are stream "restoration" industry employees - a clear conflict of interest.
>
> Second, the report calculates rates of stream pollution and erosion using theoretical guesswork that even the authors say is not reproducible. They also acknowledge that stream restorations don't stop erosion, so they decrease the calculated credits by an arbitrary 50% which is a guess on top of a guess. And their science-based monitoring is a quick visual inspection. This is what the DEP cites as "rigorous evaluation".
>
> A Chesapeake Bay Program Expert Panel Report noted "the root cause of stream bank erosion [is] impervious cover. …As a result, municipalities are spending enormous amounts of money on projects that …have no real impact on stream function."

Passage of this bill will put some much-needed guardrails on DEP's continued destruction of our natural areas with engineered stream "restorations".

We request that the county retract this shameful, disinformation-riddled testimony.

Sincerely,

Kenneth Bawer
Coalition to Stop Stream Destruction

.cc

Members of House ENT Committee

Members of Senate EEE Committee

Montgomery County State Delegation

APPENDIX 2: CSSD comments on Montgomery Park's UNFAVORABLE Testimony on Stream Restoration Bill SB 688

8 Cleveland Ct.
Rockville, MD 20850

March 9, 2026

TO: Montgomery County Executive Marc Elrich and County Councilmembers

SUBJECT: Repudiate M-NCPPC & Montgomery Parks UNFAVORABLE Testimony on Stream Restoration Bill SB0688 / HB1465

Dear County Executive Elich, Council President Fani-González, Vice President Balcombe, and Councilmembers:

The Coalition to Stop Stream Destruction (CSSD) calls on you to issue a repudiation of the Maryland-National Capital Park and Planning Commission (M-NCPPC) and Montgomery Parks shameful unfavorable testimony on Stream Restoration bills SB 688 / HB1465.

Please read our own FAVORABLE SB 688 testimony (which has foot-noted references) and click here to see videos showing the destructive steam "restorations" that M-NCPPC and Montgomery Parks supports and on which they squander our tax dollars.

We are quite familiar with this bill, having just been on sponsor Senator Mary Washington's panel testifying in support of the bill on March 3 in Annapolis.

M-NCPP's testimony on SB 688 is an embarrassment which misinterprets the bill, includes disinformation on the purported benefits of engineered stream "restorations" and uses unsubstantiated speculation about the impacts of the bill with no supporting evidence. M-NCPPC and Montgomery Parks' intent is to continue their disastrous "damn the environment, full speed ahead" use of destructive engineered stream "restorations".

We have traded emails and claims over the years with M-NCPPC and Montgomery Parks, and they have never disproved any of our assertions with valid, science-based facts. Here is one of our rebuttals to Montgomery Parks' disinformation.

The following provides M-NCPPC and Montgomery Parks' SB 688 / HB1465 testimony in bold followed by our response:

M-NCPPC testimony: This bill proposes that Stream Restoration projects would not be approved for compliance with MS4 permits, TMDL requirements, or Compensatory Mitigation.

> CSSD response: This is false. The bill only requires a common-sense out-of-stream alternatives analysis to determine the feasibility of using less destructive out-of-stream projects instead of engineered stream "restorations" so that the best project is selected.

This would effectively remove one of the most important land management tools that we utilize in our stream valleys to restore them from degradation caused by decades of upstream development.

> CSSD response: This is false. First, this bill does not ban stream restorations. Second, apparently M-NCPPC and Montgomery Parks did not read the CESR report. M-NCPPC and Montgomery Parks' unattainable goal to recreate "natural" or "historical" pre-colonial conditions is impossible given today's land use and climate. The Chesapeake Bay Program's "Comprehensive Evaluation of System Response" (CESR) report[27] written by more than 50 experts states that "The Bay of the future will be different from the Bay of the past because of permanent and ongoing changes in land use, climate change, population growth, and economic development." Likewise, it will be impossible to restore local streams to pre-colonial conditions.

Future permit requirements will be much more expensive to implement if stream restoration is not in our toolbox,

> CSSD response: This is a false and is a typical example of the disinformation that M-NCPPC and Montgomery Parks "inflict" on the public and elected officials. M-NCPPC and Montgomery Parks neglect to mention that 20 out-of-stream project types are cheaper than stream restorations per Maryland Department of the Environment Annual Report on Financial Assurance Plans.

[27] https://www.chesapeakebay.net/what/publications/achieving-water-quality-goals-in-the-chesapeake-bay-a-comprehensive-evaluation-of-system-response-cesr

and the resulting effort would be less effective in managing the health and integrity of our aquatic resources.

CSSD response: This is false. M-NCPPC and Montgomery Parks ignore the overwhelming scientific evidence that stream restorations do not work to improve the health and integrity of our aquatic resources**.** M-NCPPC NCPPC and Montgomery Parks ignore the published science that analyzed over 700 engineered stream "restorations" to show that water quality and ecological function are not improved and are sometimes worse. Plus, a Chesapeake Bay Program Expert Panel Report[28] acknowledges that engineered stream restorations do not stop erosion. (Please see our written testimony for links to these papers.) A few claims of successful projects do not disprove the preponderance of the scientific evidence.

The practices that would replace stream restoration would not only be exponentially more expensive to install, but also would require routine operational maintenance in perpetuity, further stressing our already tight operational budget.

CSSD response: This is demonstrably false. M-NCPPC and Montgomery Parks neglect to mention that 20 out-of-stream project types are cheaper than stream restorations per Maryland Department of the Environment's (MDE) Annual Report on Financial Assurance Plans.

And M-NCPPC and Montgomery Parks fail to mention that stream restorations are being washed out by uncontrolled upland stormwater runoff which is the root cause of stream erosion. They fail to mention that stream restorations currently require routine operational maintenance in perpetuity, "further stressing [their] already tight operational budget." As a result, taxpayers are paying millions of dollars for repairs such as the $3.6M repair of the Lower Booze Creek stream restoration in Potomac and the following damaged stream "restorations" around the region:

- Montgomery County (Josephs Branch, Cabin John Creek, Long Branch, Snakeden Branch, the Bedfordshire project, Old Farm Creek Tributary,

[28] https://chesapeakestormwater.net/wp-content/uploads/2022/07/9928-1.pdf

the Grosvenor-Luxmanor project, Northwest Branch, Lower Booze Creek)

- Gaithersburg (tributary to Great Seneca Creek),
- Washington County (Block Rock Run),
- Baltimore City (Stony Run),
- Anne Arundel County (Annapolis Landing project, Bacon Ridge Branch),
- Columbia (Longfellow stream),
- Reston, VA (The Glade, Upper Snakeden Branch),
- Arlington, VA (Donaldson Run),
- Fairfax, VA (Little Pimmit Run).

This is not an exhaustive list - these are just the ones we know about.

Montgomery Parks benefits greatly from the implementation of stream restoration projects on parkland that fulfill MS4, TMDL, and Compensatory Mitigation requirements for outside agencies.

CSSD response: That is false. M-NCPPC and Montgomery Parks ignore the overwhelming scientific that stream restorations do not work to improve the health and integrity of our aquatic resources. M-NCPPC and Montgomery Parks ignore the published science that analyzed over 700 engineered stream "restorations" to show that water quality and ecological function are not improved and are sometimes worse. Plus, a Chesapeake Bay Program Expert Panel Report[29] acknowledges that engineered stream restorations do not stop erosion. (Please see our written testimony for links to these papers.) A few claims of successful projects do not disprove the preponderance of the scientific evidence.

And M-NCPPC and Montgomery Parks fail to mention that stream restorations are being washed out by uncontrolled upland stormwater runoff which is the root cause of stream erosion.

The bill proposes that projects involving in-stream construction undertake an alternatives analysis to justify the use of stream work over other stormwater management practices.

[29] https://chesapeakestormwater.net/wp-content/uploads/2022/07/9928-1.pdf

CSSD response: It is incomprehensible and shocking that the M-NCPPC and Montgomery Parks do not consider a non-stream-disturbing alternatives analysis to be a reasonable way to protect the environment.

This is a common-sense requirement. If a destructive stream "restoration" is being proposed, residents have a right to demand that M-NCPPC and Montgomery Parks provide justification for the destruction of our natural areas instead of using non-stream-disturbing alternatives.

This costly and laborious exercise would be triggered for stream restoration projects

CSSD response: This is false. Any additional costs that may be associated with this "exercise," i.e., the alternatives analysis, could be offset by the use of alternative, out-of-stream projects that are less expensive than engineered stream restorations. The Maryland Department of the Environment (MDE) Annual Report on Financial Assurance Plans[30] lists twenty out-of-stream practices that are cheaper than stream restorations such rainwater harvesting, dry swales, and forest planting.

Apparently, M-NCPPC and Montgomery Parks consider any level of work to justify the best possible project to be unreasonable.

This costly and laborious exercise would be triggered for …bridge, culvert, and trail projects that are completed on parkland to provide stabilization where the stream is influenced by this infrastructure.

CSSD response: This is false. Infrastructure protection projects, such as those to protect bridges, culverts, and trails, are completely different than stream restoration projects. Infrastructure protection projects do not qualify for MS4 permit credits as do stream restorations.

[30] https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/FAP-WPRP/2022%20Stormwater%20Financial%20Assurance%20Plan%20Annual%20Report%20to%20Governor_%20MSAR%20%23%2010954%2010.18.2022.pdf. Practices cheaper than stream "restoration": Green Roof, Extensive; Rainwater Harvesting; Dry Well; Shallow Wetland; Pocket Wetland; Surface Sand Filter; Dry Swale; Other; Redevelopment; Forestation on Pervious Urban (i.e., Forest Planting); Riparian Forest Planting; Urban Tree Canopy; Septic Denitrification; Septic Connections to WWTP; Shoreline Management; Catch Basin Cleaning (i.e., Storm Drain Cleaning); Mechanical Street Sweeping; Regenerative/Vacuum Street Sweeping (i.e., Advanced Street Sweeping); Nutrient Credits [Trading]; Septic Pumping

M-NCPPC and Montgomery Parks consistently promotes the need for stream "restorations" by falsely claiming they are needed for infrastructure and property protection projects. The fact is that infrastructure and property protection projects can be done via spot repairs in tens of feet without a stream "restoration" in hundreds or thousands of feet.

Infrastructure protection projects, not stream restorations, are done for public safety improvements. The purpose of MDE's 65 approved stormwater control practices, one of which is stream "restorations," is to meet regulatory requirements to improve water quality. Projects such as bridge, culvert, and trail stabilization (examples of infrastructure and property protection issues) are done via spot repairs without the need for, and having nothing to do with, stream "restorations."

When presenting the justification for an instream approach, the definition of infeasible does not consider cost or property ownership, which raises the concern that no stream restoration project would be permitted if this bill passes.

CSSD response: This is pure speculation with no supporting evidence. First, there are 20 non-stream-disturbing stormwater management practices that are cheaper than stream restorations, so an alternatives analysis will include comparative costs.

Second, the bill explicitly requires the evaluation of project feasibility which would include an evaluation of property ownership issue. To date, M-NCPPC and Montgomery Parks have never provided any data showing that private ownership issues have prevented them from meeting any regulatory requirements.

While there may be infrastructure protection and rehabilitation projects that would be able to proceed, it would not be without additional costs and delays.

CSSD response: This is false. Infrastructure protection and rehabilitation projects are done via spot repairs without the need for, and having nothing to do with, stream "restorations." The issue of infrastructure protection and rehabilitation projects is completely outside the scope of these bills.

Montgomery Parks is supportive of installing upstream stormwater management practices that capture and manage stormwater runoff at and near the source. However, the existing damage to our stream valleys cannot be reversed with the installation of upstream stormwater management practices alone.

CSSD response: M-NPCCP's and Montgomery Parks' assertion that "the existing damage to our stream valleys cannot be reversed with the installation of upstream stormwater management practices alone" is made without any scientific justification. Their statement contradicts the experts' assertion in the CESR report that even stream "restorations cannot reverse the existing damage to our stream valleys.

Apparently, M-NCPPC and Montgomery Parks did not read the CESR report. M-NCPPC and Montgomery Parks' unattainable goal to recreate "natural" or "historical" pre-colonial conditions is impossible given today's land use and climate. The Chesapeake Bay Program's "Comprehensive Evaluation of System Response" (CESR) report[31] written by more than 50 experts states that "The Bay of the future will be different from the Bay of the past because of permanent and ongoing changes in land use, climate change, population growth, and economic development." Likewise, it will be impossible to restore local streams to pre-colonial conditions.

In addition, there is evidence that, once out-of-stream stormwater is controlled, the streams will self-heal. Will they look like pre-colonial streams? No. Will they be functioning ecosystems that provide ecosystem services like carbon sequestration and wildlife habit? Of course.

Stream restoration is an essential tool for the ecological health of our Parks.

CSSD response: This is false statement with no scientific justification. Please see the evidence we present above.

In contrast to engineered stream restorations, since the out-of-stream alternatives can be built in already disturbed developed areas they provide co-benefits such as reducing urban flooding and heat islands, providing

[31] https://www.chesapeakebay.net/what/publications/achieving-water-quality-goals-in-the-chesapeake-bay-a-comprehensive-evaluation-of-system-response-cesr

green spaces, increasing property values, and protecting streams and floodplains from toxins in stormwater.

Overall, this bill appears to have the goal of minimizing stream restoration projects implemented by public agencies and jurisdictions, as well as developers.

CSSD response: This is false. The goal of this bill is to put the best project in the best place. This bill replaces "trust-us" with a common-sense alternatives analysis which says, "Prove it, then you can use it."

The negative environmental and financial impacts from this bill will be widespread and particularly burdensome to our stream valley park system.

CSSD response: This is completely false and has been disproved above.

Passage of this bill will put some much-needed guardrails on M-NCPPC and Montgomery Parks' continued destruction of our natural areas with engineered stream "restorations".

We request that the county repudiate this shameful, disinformation-riddled testimony.

Sincerely,

Kenneth Bawer
Coalition to Stop Stream Destruction

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Members of House ENT Committee

Members of Senate EEE Committee

Montgomery County State Delegation

APPENDIX 3: CSSD response to Montgomery Parks 1/10/2025 letter re. Glenallan engineered stream "restoration"

(January 17, 2025, Rev. 2/9/2025, 7/17/2025, 11/12/2025)

In the Montgomery Parks' letter dated January 10, 2025, Parks, like DEP, tries to greenwash away the harm done by these very destructive projects using disinformation, provably false information, and misleading information. Parks and DEP, and apparently most of our elected officials, think they can pat us on the head and hope that we will just go away. It is disastrous for future generations that Parks, DEP, and our elected officials are failing to do their job to protect our natural resources. They are all active agents in the destruction of our natural resources.

It is bad enough that these destructive projects are being foisted upon an unsuspecting public. But what adds insult to injury is the shameless greenwashing about their supposed benefits (think "clean coal"). This appears to be a clear case of waste, fraud, and abuse.

Among the many falsehoods and claims by Parks which are debunked in this document below are the following:

- Parks falsely claims that stream "restoration" is "a science-backed practice recognized …to provide both water quality and ecological benefits."
- Parks falsely claims that "These projects have been shown to improve water quality, reduce erosion… and enhance habitat," among other claims.
- Parks falsely implies that stream "restorations" are *required* to meet TMDL and MS4 permit requirements.
- Parks falsely claims that "stream restoration projects involve temporary disturbances" rather than permanent or long-term ones.
- Parks claims to "conduct post-construction monitoring of our completed projects," yet no results are publicly available on their web sites.
- Parks fails to acknowledge that the published scientific literature shows that stream "restorations" do not stabilize streams, improve water quality, or improve ecological function.
- Parks and their partners in DEP fail to act on the knowledge that stream "restorations" do not stop the root cause of stream erosion - uncontrolled stormwater from developed areas that firehoses into streams.
- Parks falsely claims that they have the full support of all adjacent property owners.
- Parks falsely implies that because the project was permitted, that doing it is the right thing.
- Parks falsely claims that tree removal was minimal and that the remaining trees were adequately protected.
- Parks falsely claims that they constructed "haul roads that weave through the existing forest."
- Parks falsely implies that this project will have a successful invasives management plan, when they cannot even control invasives in other park lands.
- Parks falsely implies that "a robust planting plan" will mitigate the damage done by clearcutting the original forest.

- Parks fails to disclose that the "geotextile materials" being used is actually plastic sheeting which will break down into microplastics when it is washed-out and exposed to light.

It would reasonable to conclude, after reading Parks' letter (below) and DEP's comments that either they have never been on site at Glenallen or they are hoping that no concerned residents ever visit the site or investigate the facts about stream "restorations" to refute their greenwashing and disinformation. Parks' and DEP's continued repetition of false assertions does not make them true.

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CSSD response to Montgomery Parks 1/10/2025 letter opposing a stream "restoration" ban

Below are quotes from the Montgomery Parks letter dated 1/10/2025 in response to our recent call to ban stream "restorations" followed by our comments in **bold**:

"As stewards of over 600 miles of streams that provide valuable habitat for wildlife and recreational opportunities for residents, Montgomery Parks implements a stream restoration program intended to restore degraded stream channels and protect adjacent properties and public infrastructure."

- **RESPONSE: We wish that Parks would exercise their stewardship in a more responsible manner. Parks' stated intention is to "restore degraded stream channels and protect adjacent properties and public infrastructure," but the scientific literature and observations throughout the county[32] show that stream "restorations" do not stabilize streams, improve water quality, or improve ecological function. Parks conflates stream "restorations" ostensibly done for the benefit of streams with infrastructure and property protection projects. This is a common ploy, the same one used by DEP, to disingenuously justify doing a stream "restoration." It uses fearmongering to blur sewer line protection projects with the purpose of a stream "restoration." Targeted spot hardening of sewer lines can be done in the immediate area of the erosion problem – this does not justify the hundreds or thousands of feet of some stream "restorations (1500 linear feet in the case of the Glenallan Tributary between Georgian Woods Place and Glenallan Avenue).**

"Stream restoration is a highly regulated, science-backed practice recognized by the Environmental Protection Agency (EPA) and Maryland Department of the Environment (MDE) to provide both water quality and ecological benefits."

[32] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

RESPONSE: It is false to say that stream restoration is a "science-backed practice." In fact, it is an engineering practice[33] that is promoted by the $25 billion industry and others (including non-profits) seeking financial gain.

To say that EPA and MDE recognize this practice (in the form of issuing permits) is a common red herring used to justify stream "restorations" that never should have been constructed. As everyone knows, "The right to do something does not mean that doing it is right," in the words of William Safire.

The published science[34] does not back or support the use of stream "restorations." The science concludes that stream "restorations" provide neither water quality or ecological benefits.

To justify a stream "restoration," the public is told that erosion is a huge problem. If the industry or jurisdiction says that a stream needs to be "restored" because it is actively eroding, is that true? And even if true, what is the actual rate of erosion (which is used to garner MS4 permit credits)? The only reliable way to prove that there is active erosion is to make physical measurements at the same site over time. One method is to drive steel rods into the stream bank horizontal to the ground and measure the rate at which the rod becomes exposed over time. This is virtually never done because companies do not want to spend the time it takes to do these measurements. What they use, and what MDE and USACE (the permitting agencies) should disallow, are theoretical, mathematical calculations using the BANCS method[35] to estimate the supposed rate of erosion.

Rather than physical measurements of erosion amount over time, the state and jurisdictions almost universally rely on theoretical mathematical calculations of erosion rates as documented in a Chesapeake Bay Expert Panel Report.[36] However, this report states that these theoretical calculation tools are "…susceptible to high variability when performed by different practitioners in the field." If a measurement cannot be reproduced by different people using the same methodology, it is scientifically worthless. But virtually no companies do boots-on-the-ground actual measurements over time because they say it takes too long. On top of that, the Expert Panel is so unsure of the whole BANCS estimation methodology that they take the BANCS theoretical estimate of erosion rate (which they translate into rate of nitrogen, phosphorous and sediment pollution from eroding stream banks) and randomly cut it by 50%. This puts the lie to the veracity of stream erosion claims using theoretical calculations. If a stream erosion rate cannot be proven using traditional physical measurements, a proposed stream "restoration" should not qualify for MS4 permit credits nor should it qualify as a mitigation site.

[33] For example, see "Stream Restoration Design, "National Engineering Handbook, Part 654, August 2007, United States Department of Agriculture, Natural Resources Conservation Service, Case Study 6, p. CS6–13

[34] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 - see scientific references in presentation.

[35] 2019 Protocol 1 Guidance: "Consensus Recommendations for Improving the Application of the Prevented Sediment Protocol for Urban Stream Restoration Projects Built for Pollutant Removal Credit," p. 23; Full Report: https://chesapeakestormwater.net/wp-content/uploads/2022/07/9928-1.pdf

[36] Ibid

---- More details below ----

For MS4 permits, the stream "restoration" crediting methodology is fatally flawed. MDE defers to, and uses, the Chesapeake Bay Program Expert Panel Report for Protocol 1 Guidance" on this matter.[37]

The first problem is that these reports were not created by an independent panel of scientists with no financial conflicts of interest. The CBP Expert Panel included employees of for-profit engineering companies who are primarily engineers, not scientists, and who may have had a vested interest in ensuring that the crediting calculations maximized their profits. This has the appearance of a conflict of interest and has, at a minimum, the appearance of impropriety. As such, the use of these Expert Panel reports by MDE is arguably a corrupt process. It fails the "reasonable person" test.

The second problem is that the Expert Panel report allows the use of the BANCS method, a theoretical calculation, to estimate the rate of stream bank erosion. Per the report:

"The most common technique to estimate bank erosion rate is the BANCS Method (Rosgen, 2001), where field surveys are used to calculate BEHI and NBS scores, which in turn, are entered into regional bank erosion curves to determine the annual rate of streambank retreat." (emphasis added).

Stream bank erosion rate is a critical variable in calculating the MS4 permit credits to be awarded. But the report states that these theoretical calculation tools are "…susceptible to high variability when performed by different practitioners in the field." (emphasis added). If a measurement cannot be reproduced by different people using the same methodology, it is scientifically worthless. If used, it is arguably fraudulent if used to prove that a stream is eroding to justify a stream "restoration" project and garner MS4 permit credits.

The only accurate method to determine geomorphic evidence of active stream degradation is actual boots-on-the-ground, long-term measurements of bank erosion by traditional, fixed-station methods, such as bank pin monitoring.

Per the report, stream "restoration" companies may, in fact, use direct physical measurements to determine erosion rates:

"Designers also have the option to directly measure the rate of bank retreat in the project reach using bank pins, cross section surveys or other alternative methods that were not explicitly defined in the original expert panel report."

However, direct measurement to determine erosion rates is not a requirement. In fact, virtually no stream "restoration" companies do boots-on-the-ground actual measurements

[37] 2019 Protocol 1 Guidance: "Consensus Recommendations for Improving the Application of the Prevented Sediment Protocol for Urban Stream Restoration Projects Built for Pollutant Removal Credit," p. 23; Full Report: https://chesapeakestormwater.net/wp-content/uploads/2022/07/9928-1.pdf

over time because it takes too long. Being profit-driven, the theoretical estimation method saves companies time and money.

On top of that, the Expert Panel itself is so skeptical of the BANCS estimation methodology that they take its estimate of erosion rate (which is translated into pollution reduction when a stream "restoration" is done to determine the MS4 permit credits for a project) and randomly cut that by 50%. This should cause a huge amount of concern as to the veracity of stream erosion claims made using theoretical modeling. The current Expert Panel erosion-rate calculations are basically a thought experiment that should not be a substitute for actual on-site physical measurements.

If the actual erosion rate based on physical measurement is much less than the theoretical methodology indicates, that would make stream "restorations" less attractive for MS4 permit projects since they would be awarded less nitrogen, phosphorous, and suspended sediment credits.

Included in the Protocol 1 Guidance is this damning "Pennsylvania DEP Position on The Use of the BANCS Method":

"These memo recommendations are advisory and the appropriate state and federal permitting agencies reserve the authority to decide how to handle stream restoration projects using Protocol 1. The Pennsylvania Department of Environmental Protection (PADEP) continues to have substantial concerns regarding the development and application of BANCS methods for stream restoration crediting purposes in all hydrogeomorphic regions. One of their primary concerns is the use of BANCS methods within the Chesapeake Bay Watershed where BANCS relationships have not been appropriately validated and data is limited. They are also concerned that BANCS relationships developed using short-term monitoring-intervals may not produce valid results for reduction crediting."

"These projects have been shown to improve water quality, reduce erosion, protect infrastructure, increase surface and groundwater interactions, manage channel hydraulics, and enhance habitat,"

RESPONSE: This is disinformation. First, Parks is also conflating stream "restorations" with infrastructure protection projects in an attempt to justify these projects. Infrastructure protection projects do not qualify for EPA or MDE TMDL or MS4 permit credits. Neither Parks, DEP, MDE, or EPA has provided scientific evidence to support their assertion that these projects improve water quality, reduce erosion, and enhance habitat due to the fact *there is no supporting scientific evidence*.

Certainly, everyone promoting and approving stream "restorations," including Montgomery Parks, Montgomery County DEP, MDE, Maryland Department of Transportation (MDOT) State Highway Administration (SHA), Environmental Protection Agency (EPA), and the U.S. Army Corps of Engineers (USACE) is familiar with the published scientific literature showing that these projects do not work to either stabilize streams or improve the ecology. It appears that stream "restoration" proponents are either ignorant of the science or simply choose to ignore the science. One wonders about the role of the $25 billion stream restoration industry.

Some of the scientific evidence that stream "restorations" do not work includes:

- **Palmer et al.'s meta-analysis of 644 projects which said, "We show that a major emphasis remains on the use of dramatic structural interventions, such as completely reshaping a channel, despite growing scientific evidence that such approaches do not enhance ecological recovery, and the data we assembled (Table 2) suggest they are often ineffective in stabilizing channels when stability is the primary goal."[38] They also showed that water quality does not improve, that biology does not improve, and that ecology does not improve.**
- **Hilderbrand's meta-analysis of 40 Natural Channel Design (NCD)- and Regenerative Stormwater Conveyance (RSC)-type projects that concluded, "There simply were few ecological differences between restored and unrestored sites. In fact, the unrestored sections upstream [from the restoration sites] were often ecologically better than the restored sections or those downstream of restorations."[39]**
- **Carr et. al.'s meta-analysis of 30 projects concluding that the ecology did not improve.[40]**
- **Southerland et. al.'s analysis of 11 streams In Anne Arundel County showing that the biology did not improve.[41]**
- **Stowe et. al.'s analysis of results from 23 projects that concluded that stream "restoration" produces only transitory, not permanent, changes to abundance and species richness of fishes, especially to sensitive taxa and in urban systems.[42]**

In addition, Montgomery County Department of Environmental protection has admitted that "We have not seen benthic [macroinvertebrate] improvement in any of our stream restorations."[43] BMIs are a measure of stream health. This begs the question as to why "Parks is implementing the Glenallan Tributary project on behalf of DEP" if both DEP and Parks know it will fail?

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[38] Palmer, M. A., K. L. Hondula, and B. J. Koch, University of MD, 2014, "Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,", Annu. Rev. Ecol. Evol. Syst. 2014. 45:247-269. (https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf)

[39] Hilderbrand, Robert H., et. al.,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://cbtrust.org/wp-content/uploads/Hilderbrand-et-al_Quantifying-the-Ecological-Uplift.pdf)

[40] Carr, J., Hart, D., McNair, J., 2006, "Compilation and Evaluation of Stream Restoration Projects: Learning from Past Projects to Improve Future Success," The Patrick Center for Environmental Research, The Academy of Natural Sciences of Drexel University, Report Submitted to the William Penn Foundation. https://ansp.org/research/environmental-research/projects/restoration/

[41] Southerland, Mark, et. al., 2021, "Vertebrate Community Response to Regenerative Stream Conveyance (RSC) Restoration as a Resource Trade-Off," Award: 18002 CBT Restoration Research Grant to Tetra Tech and UMCES-Chesapeake Biological Laboratory; https://cbtrust.org/wp-content/uploads/FINAL-Report-for-18002-Tetra-Tech-CBL-CBT-RR-Vertebrates-in-RSCs-30SEP2021-Submitted-to-CBT.pdf

[42] Stowe, Edward S., Petersen, Kelly N., et. al., 2023, "Stream restoration produces transitory, not permanent, changes to fish assemblages at compensatory mitigation sites," Restoration Ecology, Volume 31, Issue 5, Jul 2023, https://onlinelibrary.wiley.com/doi/10.1111/rec.13903 and https://onlinelibrary.wiley.com/doi/epdf/10.1111/rec.13903

[43] Montgomery County Department of Environmental Protection presentation to Stormwater Partners Network on January 16, 2024.

Some might say they have seen an article or have anecdotal evidence showing that a particular restoration project worked or was "magical." First, this isn't about aesthetics - this is about protecting our natural areas and their functioning ecosystems. Second, it would not be surprising if the occasional project was successful in terms of nitrogen, phosphorous, and sediment reduction, and maybe even biological uplift. But the meta-analyses of over 700 projects (see references in the presentation https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing) show that any successful projects are outliers - the rare exception rather than the rule. It is the rule that establishes the science, not the one-offs.

Finally, photographic documentation of washed-out projects in Montgomery County and other locations in Maryland (see photographs in the presentation https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing) lead to the conclusion that these projects do not work to either stabilize streams, improve water quality, or improve ecological function.

Neither Montgomery Parks, DEP, MDE, MDOT SHA, EPA, or USACE has provided any significant evidence to the contrary from the published literature. Parks has not posted to their web site any results of their stream "restorations" to back up their assertions. Thus, there is no scientific basis for continuing the destruction caused by stream "restorations."

"These projects have been shown to improve water quality, reduce erosion, protect infrastructure, increase surface and groundwater interactions, manage channel hydraulics, and enhance habitat, and thus meet regulatory requirements such as Total Maximum Daily Load (TMDL) reductions and Municipal Separate Storm Sewer System (MS4) permits."

COMMENT: Parks' false implication is that stream "restorations" are *required* to meet TMDL and MS4 permit requirements. Neither MDE nor EPA mandate the use of stream "restorations." Per an EPA letter dated 11/6/2024, "EPA does not direct states or localities on which BMPs [stormwater control projects] are used to reduce pollutant loads…."[44] The same is true of MDE.

The fact is that more than enough out-of-stream upland locations are available to construct enough stormwater control projects to meet TMDL and MS4 permit requirements. Any statements to the contrary by Parks and DEP have never been supported by credible evidence.

"…stream restoration projects involve temporary disturbances..."

COMMENT: This is greenwashing nonsense. Parks should be ashamed to put forth such a statement. The implication of a "temporary" disturbance is one which goes away at the conclusion of construction. For example, a staging area that is removed and returned to pre-construction conditions.

[44] Personal communication to K. Bawer.

Stream "restoration" projects are *not* temporary disturbances. DC-area botanist John Parrish (formerly with the National Park Service Center for Urban Ecology, past vice president of the Maryland Native Plant Society, currently serving on the Boards of Conservation Montgomery and the Friends of Ten Mile Creek) has said that after the loss of long-established forest soils, structure and biodiversity, "It will take 100 years or more for a forest to develop soils and structure capable of sustaining a full complement of native plants and animals."[45]

Palmer et al. (2014)[46] says, "Unfortunately, recovery of biodiversity was rare for the vast majority of stream restoration projects."

Laub et al. (2013)[47] state that, "These results indicate that compaction and disturbance of riparian soils may be a significant unintended consequence of designed channel restoration and can persist for at least a decade."

Once the project is completed, the loss of tree cover will lead to an increase in stream temperatures which is detrimental to sensitive fish and other aquatic organisms.

Loss of tree canopy from this stream "restoration" will increase air, water, and noise pollution, and increase heat stress by creating a heat corridor. Destroying the tree canopy exacerbates the impact of climate change. Stream "restoration" projects adjacent to residential areas remove trees which decreases property values.

"Montgomery Parks (Parks) takes pride in leading the industry in deploying strategies that minimize impacts at restoration sites."

COMMENT: Parks and DEP use this same greenwashing strategy taking a cue from the oil industry. This is a red herring that deflects from the fact that these stream "restorations" should not be done in the first place. The objective should not be to *minimize* impacts – the objective should be to avoid *impacts*.

One has only to view the video of the Glenallan project[48] to realize that Parks' "strategies that minimize impacts at restoration sites" is obviously not true. Parks would have us not believe our eyes.

"Furthermore, Parks uses scientifically established protocols to conduct post-construction monitoring of our completed projects over several years to evaluate the system's response, with reduced erosion from

[45] Public Hearing Testimony to the Montgomery County Council, RE: Bill 25-22 Forest Conservation – Trees (Oct. 4, 2022 Public Hearing), by John Parrish

[46] Palmer, M. A., K. L. Hondula, and B. J. Koch, 2014, "Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,", Annu. Rev. Ecol. Evol. Syst. 2014. 45:247-269; https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf

[47] Laub, B.G, McDonough, O.T, Needelman, B.A., Palmer, M.A., 2013, "Comparison of Designed Channel "restoration" and Riparian Buffer "restoration" Effects on Riparian Soils," "restoration" Ecology, Vol. 21, Issue 6, November 2013 (https://onlinelibrary.wiley.com/doi/abs/10.1111/rec.12010)

[48] **Video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY)**

stabilized bed and banks and improved habitat connectivity, quality, and availability both within the stream and in riparian areas as priority project goals."

COMMENTS: While these may be the goals, Parks has never published the results of their stream "restorations," so Parks is asking the public to "trust us." Parks should post their results on their web site for public review.

However, Park's results are arguably a moot point. What we already know is this – that the following sources all lead to the unavoidable conclusion that these projects do not work to either stabilize streams, improve water quality, or improve ecological function:

- **the published science which analyzed over 700 stream "restorations"[49]**
- **documentation of washed-out projects in Montgomery County and other areas in the state plus ground observations of environmental damage[50]**
- **a video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY)**
- **a video of the Solitaire Court stream "restoration" in Gaithersburg (https://www.youtube.com/watch?v=NvTvPnG6Qs8).**
- **Montgomery County DEP has admitted that none of their past 56 projects starting in 1992 have improved stream ecology.[51] Unlike Parks, at least some of DEP's results are available on the web.**

It would not necessarily be surprising if some projects are shown to be successes in terms of nitrogen, phosphorous, and sediment reduction, and maybe even biological uplift. But the current research proves that they would be outliers - the rare exceptions rather than the rule. Science is not based on statistically insignificant exceptions.

"While some benefits of stream restoration can be readily observed, such as improved bank vegetation, aeration along riffles, and pool habitat, biological function improvements are much more difficult to recognize."

COMMENT: This is disinformation. Observations of stream "restoration" projects such as videos of the Glenallan stream "restoration"[52] and the Solitaire Court project[53] show the destruction wrought by these projects.

Stream "restorations" are major engineering construction projects that attempt to stabilize eroding streams using heavy equipment. This usually requires cutting large numbers of trees

[49] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

[50] Ibid

[51] Montgomery County Department of Environmental Protection presentation to Stormwater Partners Network on January 16, 2024. "We have not seen benthic [macroinvertebrate] improvement in any of our stream restorations." BMIs are a standard measure of stream health.

[52] Video of the Glenallan stream "restoration" near Brookside Gardens at https://www.youtube.com/watch?v=91O2bAdT8PY

[53] Video of the Solitaire Court stream "restoration" in Gaithersburg" at https://youtu.be/NvTvPnG6Qs8

for construction equipment access and may involve a mix of straightening a stream, digging an unnatural meander pattern, dumping heavy boulders on top of plastic sheeting to armor sections of a stream bank, scraping away stream bank and forest soil, dumping imported fill material into a stream channel, digging out a new channel in a different location, and dumping rocks into the stream to create a series of low dams that block the movement of aquatic organisms.

Proponents of stream "restorations" greenwash these projects by hiding from the public and elected officials the fact that these projects result in the destruction of countless trees, understory plants, forest soils, and animals.

In addition, proponents minimize the impact of clearcutting forests and grading forest floors down to bare earth during a stream "restoration" by claiming that it will only be a "temporary disturbance" and that tree loss will me "minimized." This is a deliberate attempt to minimize public scrutiny and opposition and to gain the support of elected officials. For example, a City of Gaithersburg web site for the Solitaire Court stream "restoration" stated that "It will take a year or two for the park to fully revegetate," and "It is expected that terrestrial wildlife and some of the aquatic species will move away from the area when the construction equipment arrives. Wildlife normally returns to the area once the construction is over." These statements raise greenwashing to an art form.

Stream "restorations" convert sections of natural stream valleys into engineered stormwater management projects. They create "Frankenstreams" – engineered abominations that are never found in nature with artificial meanders, unnatural rock dams, stream channels filled with dumped rubble, channels that are moved to a new location, and stone-armored banks.

The negative impacts of stream "restorations" from these construction projects include tree loss, ecosystem services loss, and increased stream temperature which decreases stream health. Stream "restorations" do not prevent pollutants in urban areas such as road oil and salt, lawn pesticides and fertilizer, toxic tire dust, pet waste, and trash from washing into streams where they are harmful to humans as well as the plants and animals.

Stream "restorations" done with the floodplain reconnection method (Parks calls this improving "floodplain interaction") increase the frequency and duration of local flooding by design. But causing a floodplain to flood more frequently can water-log the floodplain like a wet sponge. The addition of more flood water during subsequent storms to the already saturated soil results in the additional water simply flowing off the floodplain, possibly creating flooding problems for adjacent property owners or downstream. Floodplain reconnection also increases mosquito habitat when the receding water leaves behind pools of stagnant water. And floodplain reconnection leads to the death of existing trees that are not adapted to water-logged soil.

Parks assertion that "biological function improvements are much more difficult to recognize" is due to the fact that scientific research shows that it *does not happen*. As documented above, the published literature, photographic documentation of washed-out projects, and on-site observations of environmental damage lead to the conclusion that these projects do not work to either stabilize streams, improve water quality, or improve ecological function.

"Because these streams were degraded by upstream development over many years, it takes time for restored reaches to fully achieve their new ecological potential and biological community improvements will be slowed by recolonization barriers across the urban landscape where these projects are being implemented."

COMMENTS: We agree that the degradation of streams was caused by uncontrolled stormwater runoff from development. But the fact is that stream "restorations" *do not* stop stream erosion since the source of the problem - uncontrolled stormwater from developed areas that firehoses into streams - is not controlled by constructing stream "restorations." This is the reason that past projects are being washed out by storm events post-construction. (see photos from Montgomery County and other locations in the presentation https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing).

The following examples show the great expense of repairing stream "restoration" failures which should make them a financially less attractive stormwater control practice:

- **Lower Booze Creek, Potomac, MD: repair cost $3.6M[54]**
- **Grosvenor Luxmanor: repair cost scheduled for $4.8M per MoCo DEP[55]**
- **Old Farm Creek Tributary in North Bethesda: repair cost scheduled for $800K per MoCo DEP[56]**

Parks would have us be patient since they say that "it takes time for restored reaches to fully achieve their new ecological potential." But there is abundant published scientific evidence to the contrary, which analyzed over 700 stream "restorations" and concluded that these projects do not work to either stabilize streams, improve water quality, or improve ecological function. See references above to the work of Palmer, Hilderbrand, Carr, Southerland, and Stowe. In addition, Montgomery County Department of Environmental protection has admitted that none of their past 56 projects[57] starting in 1992 improved stream ecology.[58] How much time would Parks have us wait for results while they charge ahead each year with new stream "restorations." We suggest that Parks wait for the results of their already completed projects before claiming success in the absence of data. (Maybe Parks has this data, but it is not publicly accessible on their web sites).

[54] Per DEP, https://www.montgomerycountymd.gov/water/Resources/Files/restoration/streams/Lower-Booze-Creek-Restoration-Repair-Presentation.pdf

[55] https://www.montgomerycountymd.gov/water/Resources/Files/restoration/streams/grosvenor-presentation-wildwood-manor.pdf

[56] https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/restoration/oldfarm-creek-neilwood/WRE12-26%20Old%20Farm%20Creek%20Public%20Meeting%20Presentation%20Final.pdf

[57] Montgomery County, Maryland Department of Environmental Protection, Watershed Restoration Projects, https://apps2.montgomerycountymd.gov/MCGSPApps/Project.aspx?id=2, searched on "stream Restoration" for COMPLETED projects.

[58] Montgomery County Department of Environmental Protection presentation Stormwater Partners Network on January 16, 2024. "We have not seen benthic [macroinvertebrate] improvement in any of our stream restorations." BMIs are a standard measure of stream health.

DC-area botanist John Parrish (formerly with the National Park Service Center for Urban Ecology, past vice president of the Maryland Native Plant Society, currently serving on the Boards of Conservation Montgomery and the Friends of Ten Mile Creek) has said that after the loss of long-established forest soils, structure and biodiversity, "It will take 100 years or more for a forest to develop soils and structure capable of sustaining a full complement of native plants and animals."

Parks says that "it takes time for restored reaches to fully achieve their new ecological potential." But Parks has never posted on their web sites any results of their stream "restorations" to back up their assertions.

Glenallan Tributary Project Overview

"Because your email cites our ongoing project at the Glenallan Tributary as a negative example of stream restoration, I would like to address this project in detail."

"Glenallan Tributary was first identified as a potential restoration project by the DEP a decade ago. It originated as a drainage complaint from adjacent neighbors concerned about private property loss. While investigating the complaint, Parks and DEP staff identified actively eroding banks, streamside tree loss, poor in-stream and riparian habitat quality, and an abundance of non-native invasive (NNI) plant species. Further biological investigations by Parks using Maryland Biological Stream Survey protocols revealed that the degraded stream did not support a viable aquatic ecosystem and pre-restoration in-stream biological monitoring rated the benthic macroinvertebrate community as "Poor," the lowest possible category.

COMMENT: What Parks neglects to mention is that the published scientific literature shows that stream "restorations" do nothing to improve any of the above-mentioned conditions.

Some of the scientific evidence that stream "restorations" do not work includes:

- **Palmer et al.'s meta-analysis of 644 projects which said, "We show that a major emphasis remains on the use of dramatic structural interventions, such as completely reshaping a channel, despite growing scientific evidence that such approaches do not enhance ecological recovery, and the data we assembled (Table 2) suggest they are often ineffective in stabilizing channels when stability is the primary goal."[59] They also showed that water quality does not improve, that biology does not improve, and that ecology does not improve.**
- **Hilderbrand's meta-analysis of 40 Natural Channel Design (NCD)- and Regenerative Stormwater Conveyance (RSC)-type projects that concluded, "There simply were few ecological differences between restored and unrestored sites. In fact, the unrestored**

[59] Palmer, M. A., K. L. Hondula, and B. J. Koch, University of MD, 2014, "Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,", Annu. Rev. Ecol. Evol. Syst. 2014. 45:247-269. (https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf)

sections upstream [from the restoration sites] were often ecologically better than the restored sections or those downstream of restorations."[60]

- **Carr et. al.'s meta-analysis of 30 projects concluding that the ecology did not improve.[61]**
- **Southerland et. al.'s analysis of 11 streams In Anne Arundel County showing that the biology did not improve.[62]**
- **Stowe et. al.'s analysis of results from 23 projects that concluded that stream "restoration" produces only transitory, not permanent, changes to abundance and species richness of fishes, especially to sensitive taxa and in urban systems.[63]**

In addition, Montgomery County Department of Environmental protection has admitted that *none* of their past 56 projects[64] starting in 1992 improved stream ecology.[65]

Parks uses the misleading term "streamside tree loss." What this really means is that trees are falling over, sometimes into the stream, as they die or are undercut by the stream. This a perfectly natural and beneficial process of stream ecology. Apparently, Parks did not consult with any ecologists. Otherwise, they would know that dead and dying trees are essential components of a complete ecosystem. As Travis Audubon puts it, "Dead trees are 'home sweet home' to woodpeckers."[66] Plus, rather than being a problem, trees falling into streams is a natural process and is beneficial since the small damming effect creates new types of habitats, new aerating riffles, etc. Trees are being cut and dropped into streams by more well-informed, innovative ecologists – read on.

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[60] Hilderbrand, Robert H., et. al.,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://cbtrust.org/wp-content/uploads/Hilderbrand-et-al_Quantifying-the-Ecological-Uplift.pdf)

[61] Carr, J., Hart, D., McNair, J., 2006, "Compilation and Evaluation of Stream Restoration Projects: Learning from Past Projects to Improve Future Success," The Patrick Center for Environmental Research, The Academy of Natural Sciences of Drexel University, Report Submitted to the William Penn Foundation. https://ansp.org/research/environmental-research/projects/restoration/

[62] Southerland, Mark, et. al., 2021, "Vertebrate Community Response to Regenerative Stream Conveyance (RSC) Restoration as a Resource Trade-Off," Award: 18002 CBT Restoration Research Grant to Tetra Tech and UMCES-Chesapeake Biological Laboratory; https://cbtrust.org/wp-content/uploads/FINAL-Report-for-18002-Tetra-Tech-CBL-CBT-RR-Vertebrates-in-RSCs-30SEP2021-Submitted-to-CBT.pdf

[63] Stowe, Edward S., Petersen, Kelly N., et. al., 2023, "Stream restoration produces transitory, not permanent, changes to fish assemblages at compensatory mitigation sites," Restoration Ecology, Volume 31, Issue 5, Jul 2023, https://onlinelibrary.wiley.com/doi/10.1111/rec.13903 and https://onlinelibrary.wiley.com/doi/epdf/10.1111/rec.13903

[64] Montgomery County, Maryland Department of Environmental Protection, Watershed Restoration Projects, https://apps2.montgomerycountymd.gov/MCGSPApps/Project.aspx?id=2, searched on "stream Restoration" for COMPLETED projects.

[65] Montgomery County Department of Environmental Protection presentation Stormwater Partners Network on January 16, 2024. "We have not seen benthic [macroinvertebrate] improvement in any of our stream restorations." BMIs are a standard measure of stream health.

[66] https://travisaudubon.org/murmurations/dead-trees-are-home-sweet-home-to-woodpeckers

> **Per an article in the Bay Journal[67]: "The practice is known officially as "large woody material stream restoration" but more commonly as "chop and drop." …Trees and branches have been dropping generous loads of woody debris into streams, without help from humans, for all of Earth's history — until the last few centuries, when old growth forests virtually disappeared in a geological blink of an eye. And even where second-growth forests have taken their place, the trees are not old enough to regularly supply woody material to the streams. Enter chop and drop, where teams of trained workers armed with little more than helmets, chainsaws and perhaps winches trek deep into the woods, where heavy machinery can't go. There, they restore a long-missing link to high-quality streams, especially in inaccessible and vital headwaters. …The trunks and limbs embedded in the stream created new riffles, pools and undercut banks where fish could seek refuge and get out of fast-flowing current. Oxygen was plowed into the water. The sandy bottom was scoured away to expose a layer of gravel preferred by trout for spawning. In the fall, leaf clusters collected by the branches contained stoneflies and other aquatic insects that trout feed on. …During storms, water is now diverted onto the adjacent forest floor, creating wetlands that act as sponges and blunt the destructive force of floods. During droughts, that stored water recharges the stream as it ebbs. The wet spots are corridors for amphibians."**

"While Parks is implementing the Glenallan Tributary project on behalf of DEP for credit toward the County's MS4 permit and Anacostia Total Nitrogen, Total Phosphorus, and Total Suspended Solids Total Maximum Daily Load (TMDL) program, we proceeded with this project based on the poor quality of the pre-restoration channel and the potential for improvements in the watershed."

> **COMMENT: The goals of the project are admirable, but the fact remains that science shows that stream "restorations" do not work. Parks and DEP refuse to acknowledge the published science which analyzed over 700 stream "restorations", documentation of washed out projects in Montgomery County, and ground observations of environmental damage (see references and photographs in the presentation https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing) and a video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY) all leading to the unavoidable conclusion that these projects do not work to either stabilize streams, improve water quality, or improve ecological function. Montgomery County DEP has admitted that none of their past 56 projects starting in 1992 have improved stream ecology. We have no data from Parks.**

"Parks spent several years designing the restoration project and working through the County and State review, approval, and permitting processes."

> **COMMENTS: The design time spent is irrelevant – results should always trump effort. Regarding the design, Palmer et. al (2014)[68] said that "Methods like NCD [Natural Channel Design] that require heavy equipment, engineering designs, and construction personnel are**

[67] "Chop and drop' tree felling aims to improve stream ecosystems in Pennsylvania," by Ad Crable, Apr 25, 2024, Chesapeake Bay Journal. https://www.bayjournal.com/news/wildlife_habitat/chop-and-drop-tree-felling-aims-to-improve-stream-ecosystems-in-pennsylvania/article_bbb95bae-fe4b-11ee-86ce-b73ce8e8f98e.html

[68] Palmer, M. A., K. L. Hondula, and B. J. Koch, University of MD, 2014, "Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,", Annu. Rev. Ecol. Evol. Syst. 2014. 45:247-269. (https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf)

expensive to implement and therefore very lucrative for businesses. The combination of training materials, the profit factor, and Rosgen's [the "father" of NCD] charismatic personality has contributed significantly to the heavy reliance on the NCD approach…."

Hilderbrand et. al. (2020)[69] concluded that, "In relative terms, RSC [Regenerative Stormwater Conveyance]-dominant restorations performed similarly to NCD [Natural Channel Design]-dominated; both showed limited to no ecological uplift due to restoration activities."

The fact this Parks has been "working through the County and State review, approval, and permitting processes" is a common red herring used by proponents to justify stream "restorations" that should never have been built. As everyone knows, "The right to do something does not mean that doing it is right," in the words of William Safire.

"Prior to in-stream construction, Parks required the contractor to conduct a fish relocation, which reverified the poor in-situ ecological conditions of the restoration reach. "

COMMENT: What about the other animals that were presumably crushed by the heavy construction equipment such as frogs, toads, box turtles, snakes, salamanders, etc. that could not run away? While the site may have had a poor ecological condition, the science referenced above shows that stream "restorations" do not improve ecological conditions.

"Once Parks obtained the required permits, the construction was bid among pre-qualified contractors that specialize in environmental restoration construction."

COMMENTS: This is misdirection and disinformation. First, to borrow a phrase from William Safire, just because a permit was obtained does not mean that doing it is right.

Second, apparently there are no qualified contractors based on the results of their work. The published science which analyzed over 700 stream "restorations", documentation of washed out projects in Montgomery County, and ground observations of environmental damage (see references and photographs in the presentation https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing) and a video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY) all lead to the conclusion that these projects do not work to either stabilize streams, improve water quality, or improve ecological function. Montgomery County DEP has admitted that none of their past 56 projects starting in 1992 have improved stream ecology. We have no data from Parks' past projects.

"Thirty-eight percent of the drainage area to the Glenallan Tributary project is covered by impervious surfaces and as a result its banks, like those of many other urban streams, are highly eroded."

[69] Hilderbrand, Robert H., et. al.,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://cbtrust.org/wp-content/uploads/Hilderbrand-et-al_Quantifying-the-Ecological-Uplift.pdf)

COMMENT: We are glad that Parks recognizes the source of the problem – stormwater from developed areas that fire hoses into streams. Unfortunately, Parks fails to acknowledge the fact that stream "restorations" *do not* stop stream erosion since the source of the problem - uncontrolled stormwater from developed areas - is not controlled by constructing stream "restorations." This is the reason these projects are only a temporary band-aide, at best, and are being washed out by storm events post construction.

Consider this: after the $700K Lower Booze Creek stream "restoration" in Potomac, DEP's web site says, "Storm damage occurred very soon after construction, initiating structural failures." The repairs cost an additional $3.6M.[70] Plus, the Grosvenor Luxmanor repair cost is scheduled for $4.8M[71] and the Old Farm Creek Tributary in North Bethesda repair cost scheduled for $800K per MoCo DEP[72]

Doing a stream "restoration" instead of controlling stormwater *before* it enters a stream is like trying to repair water-damaged furniture while the roof is still leaking.

The only solution is to remove the external stressor – uncontrolled stormwater from developed areas. This can only be done with out-of-stream stormwater control projects such as bioretentions, raingardens, permeable pavement, tree planting, and dozens of other types of non-destructive practices authorized by MDE to meet the MS4 permit.[73]

Another ruse promulgated by both Parks and DEP when trying to justify a stream "restoration" is to claim that any given project *must* be done, either to stop the erosion or meet their MS4 permit or both, and that there are not enough upland areas for alternative out-of-stream stormwater control to stop the erosion. However, virtually all streams in Montgomery County are eroding. Rather that attempting to control 100% of the erosion at one stream location using a stream "restoration" (which the facts show cannot be done anyway), the county should do upland control in multiple watersheds which would result in less erosion in multiple streams while garnering the same amount of MS4 permit credits. This would eliminate the perceived problem of insufficient area for upland control at any one location.

Parks and DEP have used unsubstantiated, arm-wavy arguments that there is not enough upland space for out-of-stream projects. DEP has referenced papers by Williams et. al., 2022[74]

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[70] Per DEP, https://www.montgomerycountymd.gov/water/Resources/Files/restoration/streams/Lower-Booze-Creek-Restoration-Repair-Presentation.pdf

[71] https://www.montgomerycountymd.gov/water/Resources/Files/restoration/streams/grosvenor-presentation-wildwood-manor.pdf

[72] https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/restoration/oldfarm-creek-neilwood/WRE12-26%20Old%20Farm%20Creek%20Public%20Meeting%20Presentation%20Final.pdf

[73] MDE Accounting Guidance document: https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/Final%20Determination%20Dox%20N5%202021/MS4%20Accounting%20Guidance%20FINAL%2011%2005%202021.pdf

[73] https://www.washingtonpost.com/national/2024/09/28/climate-heat-trees-cooling-solutions-united-nations/de980bb2-7d9d-11ef-980d-341a84fdff8f_story.html

[74] Brianna Williams, Kristina G. Hopkins, Marina Metes, Daniel Jones, Stephanie Gordon, William Bradley Hamilton (2022), "Tracking geomorphic changes after suburban development with a high density of green stormwater

and Thompson, et al., (2023)[75] to incorrectly conclude that upland out-of-stream projects cannot stop stream erosion.

However, the proper conclusion from those papers is simply that too few properly sized upland projects were done to keep stormwater from fire hosing into streams. Parks and DEP would use their logic to conclude that no umbrella can keep one's head dry during a rainstorm based on only using a cocktail umbrella.

The only solution to stream erosion is upland (out-of-stream) projects that control stormwater runoff at its source (from roads, parking lots, roofs, etc.) with bioretentions, permeable pavement, rain gardens and many other practices.

It is hard to believe that DEP does not even do out-of-stream alternative analyses for every proposed stream "restoration" project. (We do not know about Parks – maybe they will tell us). For example, DEP never did an upland alternative analysis for the Falls Reach project[76] or the scheduled Grosvenor stream "restoration."[77] Second, DEP has never proven, *because it can't*, that the county's MS4 permit cannot be met unless stream "restorations" are done.

Another of DEP's rationales for stream "restorations," aside from their false claims about stream "restoration" benefits and false claims about not enough upland area, is that it is more convenient to sacrifice our natural areas to stream construction projects than to take on the "challenge" of controlling stormwater outside of streams – they would rather do one mega-project than several smaller ones.[78]

What is particularly egregious is that Maryland Department of the Environment (MDE) has statewide data from its 2022 Annual Report on Financial Assurance Plans (FAPs) showing there are 20 non-destructive, out-of-stream stormwater project types that are more cost effective than stream "restorations."[79] This waste may be of interest to the Montgomery County Office of the Inspector General whose website

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infrastructure practices in Montgomery County, Maryland," Geomorphology. (https://doi.org/10.1016/j.geomorph.2022.108399)

[75] Thompson, Tess Wynn et al., (2023) "Effectiveness of stormwater management practices in protecting stream channel stability," presented at the 2023 Maryland Water Monitoring Council Annual Conference (11/17/2023). Not yet posted to https://cbtrust.org/grants/restoration-research/
From https://dnr.maryland.gov/streams/Documents/MWMC/AGENDA-MWMC-Annual-Conference-2023.pdf , link to presentation at https://drive.google.com/file/d/1isYAs58zVsLJ9H1VOiu4PvzMuYvSplf3/view

[76] Personal communication from DEP to K. Bawer at public Falls Reach site visit.

[77] Statement by DEP at public site visit.

[78] Personal communication from DEP to K. Bawer at public Falls Reach site visit.

[79] On a statewide basis MDE data (per MDE's 2022 Annual Report of Financial Assurance Plans, https://mde.maryland.gov/programs/Water/StormwaterManagementProgram/Pages/WPRPFinancialAssurancePlans.aspx) shows that there are 33 different types of out-of-stream projects (such as green roofs, rain gardens, and bio-swales) that are more cost effective (less cost per impervious acre treated) than stream "restorations." This is not even a comparison of the lifecycle cost or total cost of ownership (TCO) over time, which is the sum of construction cost, maintenance, repair, replacement costs and a quantification of the value of lost or gained ecosystem functioning (services) - for example, trees have been shown to reduce air conditioning expense. Lifecycle cost comparisons would probably tip the scales even further in favor of upland (out-of-stream) practices due in part to the fact that stream "restorations" are being washed-out and repair is extremely expensive.

(https://www.montgomerycountymd.gov/oig/hotline.html) defines waste as "The careless expenditure of county funds or resources above and beyond the level that is reasonably required to meet the needs of the county…." They give examples include buying excessive goods or services and inefficient use of resources.

Parks rightfully points out that most stormwater comes from county land outside of park lands which Parks cannot control to meet the Parks' MS4 permit. Instead of finger pointing, Parks and MDE should ask the state MDE to combine their MS4 permits.

Finally, why should the public pay for stream damage caused by stormwater runoff from private property? Why are the interests (read, profits) of developers put ahead of those of residents who want their parkland and other natural areas protected?

"The stream restoration project at Glenallan will stabilize the stream channel and degraded storm drain outfalls, reduce downstream sediment loads, improve groundwater levels and floodplain interaction, and enhance habitat features and biological connectivity."

COMMENTS: This is false, except for possible stabilization of the degraded storm drain outfalls. It is the height of hubris to claim success ("The stream restoration project at Glenallan will…) before the project has even been completed.

This is especially true in light of the published science which analyzed over 700 stream "restorations", documentation of washed out projects in Montgomery County, and ground observations of environmental damage (see references and photographs in the presentation https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing) and a video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY) which all lead to the conclusion that these projects do not work to either stabilize streams, improve water quality, or improve ecological function. Montgomery County DEP has admitted that none of their past 56 projects starting in 1992 have improved stream ecology. We have no data from Parks' past projects. Let's not hold our breaths that this project will be the one that bucks the trend.

If the objective is to "reduce downstream sediment loads," why is sediment being dumped into the Glenallan Tributary to raise the stream bed? Since the source of erosion (uncontrolled out-of-stream stormwater runoff from developed areas) is not being controlled, this newly added sediment will eventually be washed out as described below.

According to a 2021 paper by Dr. John Field[80], fluvial geomorphologist, for the City of Alexandria on the topic of raising a stream channel such as the Glenallan tributary,

- **"There is no guarantee that the imported fill's pollutant levels will not match or exceed those of the natural bank soils, which the City claims to be the source of pollutants reaching Chesapeake Bay."**
- **"The fill will completely bury and kill the existing …aquatic ecosystem of macroinvertebrates, amphibians, and fish…."**

[80] Field, John, 2021, "Analysis of the Stream "Restoration" Design for Taylor Run in Alexandria, VA"

- **Due to the cutting of mature trees, "the City's ability to achieve its goal of preserving and enhancing aquatic and riparian ecology… will have already been lost for decades, and perhaps permanently."**
- **"The City also will fail to achieve its goal of reducing sediment flows into Potomac River and Chesapeake Bay. …channel incision and widening have occurred in response to the extensive development in the watershed and to establish a new equilibrium condition. Adding fill to the channel runs directly against this natural response to urbanization: After decades of naturally reducing its gradient through incision, the filled-in, elevated streambed will produce a steeper channel that will increase (not decrease) the stream's capacity to carry sediment. The stream's erosive energy will be rejuvenated and, as a result, Taylor Run will move sediment more efficiently towards Chesapeake Bay."**
- **"Further, the fill will replace the material that has taken decades to erode away, making sediment available to wash downstream again. As the proposed design does not address the excess runoff responsible for the incision and widening, the fill's long-term fate will ultimately be the same: The stream will once again work toward a configuration in equilibrium with the urbanized watershed, eroding the added material until channel stability is reached. This exact scenario has already played out in Strawberry Run, which was "restored" several years ago through a similar "Natural Channel Design" project. Simply put, sediment should not be added to the stream if the goal is to reduce the amount of sediment being carried to the Bay.**

From a 2020 paper by Dr. John Field[81] , fluvial geomorphologist, for an Arlington County stream "restoration":

- **"Why, then, is the sediment that has taken decades to wash downstream now being replaced with imported fill? The long-term fate of the fill will invariably be similar to previous soils eroded away given that implementation of the project will have no effect on the high volume of runoff emanating from the urbanized watershed. Simply changing the form (i.e., width, slope, and sinuosity) of the channel as proposed in the restoration design does not change the process at the root of the problem."**
- **"The addition of fill, therefore, achieves exactly the opposite result of the project's goal to reduce downstream sediment transport towards Chesapeake Bay."**
- **"In addition, the fill added to the existing channel will be far more erodible compared to the cohesive native soil, so is more likely to be removed in years rather than decades."**
- **"Put simply, why add sediment to reduce sediment, especially if the project goals are less likely to be achieved?"**

Regarding the stated goal of "floodplain interaction," more commonly referred to as floodplain reconnection, per Field, 2020[82]:

- **"The use of fill to raise the bed elevation in order to regularly flood the valley bottom is also problematic."**

[81] Field, John, 2020, "Analysis of the Stream Restoration Design of Donaldson Run Tributary B in Arlington, VA"
[82] Ibid

- **"The vegetation growing on the valley bottom is adapted to an upland environment ...that are rarely inundated by floodwaters."**
- **"Those trees saved near the channel and others growing beyond the limits of disturbance will not, however, be saved from the frequent overbank flooding that will ensue if the project is implemented as designed. Not adapted to frequent inundation, the trees and other plants growing on the valley bottom will become stressed and ultimately die."**

Regarding the claim that the project will "improve groundwater levels," removal of large numbers of mature trees may very well cause the groundwater level to rise, which would not be to say it would be "improved." According to Fraley-McNeal, L. et al. (2022)[83], "Loss of existing trees in the riparian zone from stream restoration implementation occurs either through direct removal during construction or mortality afterwards due to increased groundwater elevations and/or extended inundation of the floodplain, compaction, and root disturbance from construction activities. … For projects that involve floodplain reconnection, mortality of trees in the riparian zone may occur as soils are inundated over time. … When mature trees are removed, they cannot be replaced with similar-sized trees that perform the same ecological functions. Depending on the pre-restoration condition and level of construction disturbance, years of ecosystem maturation may be needed before a project fully meets its long-term restoration objectives and realizes its full environmental benefits (Kaushal et al., 2021; Wood et al., 2021)."

"Additionally, the Glenallan Tributary stabilization will protect structures on an adjacent property that are being threatened by ongoing channel erosion."

COMMENT: This is disinformation presented as fact and fearmongering. First, no adjacent properties are being threatened – while there is stream channel erosion, it is well away from any houses. Second, since the source of erosion - uncontrolled out-of-stream stormwater runoff from developed areas - is not being controlled, this project will eventually be washed out.

Some photographic examples stream "restorations'" failure to protect adjacent properties are the Old Farm Creek in North Bethesda and the Bedfordshire project in Potomac.[84]

[83] Fraley-McNeal, L. et al. (2022), "Maintaining Forests in Stream Corridor Restoration and Sharing Lessons Learned," Center for Watershed Protection; https://owl.cwp.org/mdocs-posts/maintaining-forests-in-stream-corridor-restoration-and-sharing-lessons-learned-final-report/

[84] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

(Above: along an adjacent private property, a failed attempt at stream bank stabilization with Gabion baskets and rip rap along Old Farm Creek Tributary, North Bethesda)

(Above: eroded stream bank and displaced boulders along the Bedfordshire stream "restoration" in Potomac, MD)

These projects never work because the stressor - stormwater fire hosing into the stream from developed areas - has not been eliminated.

DEP has accused us of cherry-picking bad examples,[85] yet they have not provided any evidence to the contrary. Both DEP and Parks needs to make public their list of projects, which ones have been washed out and need repair, and what type and number of storm events (e.g. 1-year, 10-year, 100-year storms) has each project experienced since construction. To claim, for example, that a certain project is "storm-proof" if it has only been subjected to 1-year storms would be an egregious claim.

[85] Statement by DEP at public site visit to the planned Grosvenor Luxmanor stream "restoration" sites.

Thus, stream "restorations" simply do not stabilize streams since these projects are washed out by post-construction storms. As shown in Palmer's (2014)[86] analysis of 644 stream "restorations," less than half of all stream "restorations" showed improvement in stabilizing channels – worse than a coin toss.

Plush, Laub et. al., 2013[87], concluded that "… riparian buffer restoration [i.e., tree planting] is a more ecologically favorable method than designed channel restoration for bank stabilization."

"We have coordinated closely with adjacent property owners throughout the design and construction process, and we have their full support."

COMMENTS: This is blatantly false. We spoke to an adjacent property owner on Wallace Avenue, whose property abuts the project, on November 18, 2024. This owner said that their only interaction with the county was a flyer inviting them to a meeting which they did not attend much less give their "full support." It is not known how many other adjacent owners similarly did not give their support for this project.

"Lastly, WSSC water and gravity sewer infrastructure runs alongside and across portions of Glenallan Tributary. The project design addresses the deepening of the channel and the resulting highly erodible steep banks, known as erosive downcutting, which were putting public utilities at risk of failure."

COMMENTS: This is a red herring, a common ploy of proponents to disingenuously justify doing a stream "restoration." It uses fearmongering to blur public utility, including sewer line, protection projects with the purpose of a stream "restoration." Targeted spot hardening of sewer lines in the immediate area of the problem can fix this, unlike the hundreds or thousands of feet of some stream "restorations (1500 linear feet in the case of the Glenallan Tributary between Georgian Woods Place and Glenallan Avenue).

In reality, these projects are only short-term band aides because the stressor - stormwater fire hosing into the stream from developed areas - has not been controlled.

Finally, I asked WSSC to provide evidence that sewer lines were endangered near Glenallan Avenue. WSSC could not provide any verification that this project was needed to protect sewer lines.[88]

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[86] Palmer, M. A., K. L. Hondula, and B. J. Koch, University of MD, 2014, "Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,", Annu. Rev. Ecol. Evol. Syst. 2014. 45:247-269. (https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf)

[87] Laub, B.G, McDonough, O.T, Needelman, B.A., Palmer, M.A., 2013, "Comparison of Designed Channel "restoration" and Riparian Buffer "restoration" Effects on Riparian Soils," "restoration" Ecology, Vol. 21, Issue 6, November 2013 (https://onlinelibrary.wiley.com/doi/abs/10.1111/rec.12010)

[88] Email from with Timothy Brooks, WSSC, on 1/23/2025: "The gentleman called me asking about this stream project, in which I'm unaware of. He saw my name listed for projects in the area, but this work isn't involved any of those projects."

Tree Protection, Reforestation, and NNI Management

"As your letter states, some stream restoration projects involve the removal of mature trees to allow for construction access and grading.

> **This is greenwashing. Parks is attempting to justify "removal of mature trees to allow for construction access and grading." The fact is that no trees would have to be cut if this misguided project was not done. The log piles of cut mature trees can be seen in the video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY).**

"**However, Montgomery Parks does not engage in clear cutting of trees on any projects implemented on Montgomery County parkland.** In the video linked in your email, the area shown did not have trees prior to the start of construction and was overwhelmed with undesirable NNI vegetation."

> **COMMENT: This is false and easily disproved. First, the video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY) clearly shows piles of cut mature trees. These did not just fall out of the sky. Second, DEP's presentation "Glenallan Stream Restoration Project, Public Meeting," dated October 24, 2017[89] shows many slides labeled "Existing Conditions." These photographs, such as the one below, show forested areas that are being been clearcut. (This presentation has apparently been taken off the web, but a copy will be supplied on request.)**

[89] This presentation has apparently been taken off the web, but a copy will be supplied on request.

Below is another example of the clearcutting done for this project.

"At the Glenallan project, tree removal was selective, minimal, and only as necessary for the stable construction of the stream channel;"

> **COMMENTS: This is typical Parks and DEP greenwashing and a typical red herring to deflect from the fact that this project should never have taken place. The fact is that *no* trees would have to be cut if this misguided project was not done. Parks asks that we not believe our eyes when the video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY)) shows wanton clearcutting of the riparian forest, piles of cut mature trees, a temporary haul road that slices through the forest, and imported rock rubble being haphazardly dumped, not placed, into the stream. The few trees with scrape protectors attached to their trunks will most probably die due to soil compaction of their critical root zones by heavy construction equipment. See also the photo above.**

"many of the trees removed were already victims of the channel erosion and would not have survived the continuing erosion."

COMMENTS: Apparently Parks did not consult with any ecologists. Otherwise, they would know that dead and dying trees are essential components of a complete ecosystem. As Travis Audubon puts it, "Dead trees are 'home sweet home' to woodpeckers."[90] Plus, rather than being a problem, trees falling into streams is a natural process and is actually beneficial since the small damming effect creates new types of habitats, new aerating riffles, etc. without need for heavy machinery. Unlike Park's misguided philosophy, trees are being dropped into streams by more enlightened ecologists.

Per an article in the Bay Journal[91]: "The practice is known officially as "large woody material stream restoration" but more commonly as "chop and drop." …Trees and branches have been dropping generous loads of woody debris into streams, without help from humans, for all of Earth's history — until the last few centuries, when old growth forests virtually disappeared in a geological blink of an eye. And even where second-growth forests have taken their place, the trees are not old enough to regularly supply woody material to the streams. Enter chop and drop, where teams of trained workers armed with little more than helmets, chainsaws and perhaps winches trek deep into the woods, where heavy machinery can't go. There, they restore a long-missing link to high-quality streams, especially in inaccessible and vital headwaters. …The trunks and limbs embedded in the stream created new riffles, pools and undercut banks where fish could seek refuge and get out of fast-flowing current. Oxygen was plowed into the water. The sandy bottom was scoured away to expose a layer of gravel preferred by trout for spawning. In the fall, leaf clusters collected by the branches contained stoneflies and other aquatic insects that trout feed on. …During storms, water is now diverted onto the adjacent forest floor, creating wetlands that act as sponges and blunt the destructive force of floods. During droughts, that stored water recharges the stream as it ebbs. The wet spots are corridors for amphibians."

"Montgomery Parks' design approach considers every streamside tree individually and staff weigh all options carefully before making the difficult decision to remove a tree or any other native vegetation."

COMMENT: This is greenwashing. Apparently, Parks did not weigh the option of suggesting upland stormwater control by DEP in the same or different watersheds for the same amount of MS4 permit credits. The fact is that no trees would have to be cut if this misguided project was not done. Parks asks that we not believe our eyes when the video (video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY) shows wanton clearcutting of the riparian forest and piles of cut mature trees. It appears that Parks' decision to chainsaw those trees was not that difficult, unfortunately.

"Additionally, some removals were completed to eradicate non-native invasive Norway Maples (*Acer platanoides*) from the site."

[90] https://travisaudubon.org/murmurations/dead-trees-are-home-sweet-home-to-woodpeckers

[91] "Chop and drop' tree felling aims to improve stream ecosystems in Pennsylvania," by Ad Crable, Apr 25, 2024, Chesapeake Bay Journal. https://www.bayjournal.com/news/wildlife_habitat/chop-and-drop-tree-felling-aims-to-improve-stream-ecosystems-in-pennsylvania/article_bbb95bae-fe4b-11ee-86ce-b73ce8e8f98e.html

COMMENT: This is greenwashing. While any removal of invasive plants is commendable, the removal of Norway Maples could have been done by hand or by walking in with chainsaws, not heavy construction equipment. This is a bogus attempt to justify the entire project.

"Any trees that must be taken are reused on our site either in the stream channel to provide root ball habitat in pools, or on the floodplain and riparian enhancement areas as terrestrial streamside habitat."

COMMENT: This is greenwashing. The fact is that no trees "must be taken" if misguided projects like this are not done. Parks asks that we not believe our eyes when the video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY) shows wanton clearcutting of the riparian forest and piles of cut mature trees. To say that cut trees will be used for another purpose is no justification for unnecessarily cutting them in the first place.

Second, DEP's presentation "Glenallan Stream Restoration Project, Public Meeting," dated October 24, 2017[92] shows many slides labeled "Existing Conditions." These photographs (see example above) show forested areas that have now been clearcut. (This presentation has apparently been taken off the web, but a copy will be supplied on request). Parks' professed need to use newly cut trees to create new "terrestrial streamside habitat" would not have been necessary if Parks had not destroyed the pre-existing "terrestrial streamside habitat" in the first place.

"The video linked in your letter shows how Parks' construction efforts put an emphasis on the protection of the remaining trees. It shows planking (wooden boards wrapped around trees) that protect tree trunks from accidental damage by passing equipment."

COMMENT: This is greenwashing and disinformation. First, the need for "protection of the remaining trees" is only necessitated by the construction of this misguided project.

Second, the few trees with planking (wooden boards wrapped around trees) will most probably die due to soil compaction of their critical root zones since they are on the very edge of the work zone used by heavy construction equipment as shown in the photo below. Again, Parks asks us to not believe our eyes.

[92] This presentation has apparently been taken off the web, but a copy will be supplied on request.

The fact is that no trees would have to be cut or protected if this misguided project was not done. Parks asks that we not believe our eyes when the video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY) shows wanton clearcutting of the riparian forest and piles of cut mature trees.

"Welded wire tree protection fencing is visible in the video, as well as tree protection "islands" where we preserved groups of mature trees within our limits of disturbance."

COMMENT: This is greenwashing and disinformation. First, the need for "tree protection fencing" is only necessitated by the construction of this misguided project. The photograph above shows both planking (wooden boards wrapped around trees) and the welded wire tree protection fencing. However, many of these trees will die due to soil compaction of their critical root zones by the heavy construction equipment seen in the video[93]

"It also showed haul roads that weave through the existing forest, finding paths free of existing trees so trees aren't removed merely for equipment access."

[93] Video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY)

COMMENT: This is false as documented with photographic evidence. Apparently, Parks uses a different definition of "weaving" than the rest of us. The photo below shows the arrow-straight haul road through the forest. Parks should define what they mean by "weaving."

Again, we are asked to not believe our eyes. The video (screen shot below) also clearly shows a wide, straight haul road.

Perhaps Parks will define what *they* mean by a "weaving" road.

"Those haul roads are lined with mulch and wooden mats to protect the forest floor from compaction during construction."

COMMENT: This is a red herring to deflect from the fact that this project should never have taken place. Plus, there are many potential detrimental impacts from the use of mulch.

Botanist John Parrish said, "If they leave it in place, it will probably be too deep for most preexisting perennial herbs to emerge, assuming they even survive the time period smothered under mulch and planks. If they remove it, they would have to do it manually with rakes otherwise they will compact the soils if they use motor vehicles to scrape it away."[94]

Gérard, F., et al. (2015)[95] say that, "the application of mulch can alter soil chemistry, particularly nutrient cycling and pH levels, which may negatively affect microbial communities and forest floor biodiversity. Certain types of mulch can increase soil acidity or alter nutrient dynamics, leading to long-term soil degradation."

Jones, M. B., et al. (2017)[96] performed a study that "discusses how certain mulching practices in forest restoration can have unintended negative consequences, such as suppressing native vegetation by altering light availability and soil temperature. The thick layers of mulch can

[94] Personal communication, 1/15/2025.
[95] Gérard, F., et al. (2015). "Impact of mulching on forest soil microorganisms: A review of potential risks." Forest Ecology and Management, 357, 99-106.
[96] Jones, M. B., et al. (2017). "Evaluating the ecological impact of mulches in forest restoration projects." Restoration Ecology, 25(3), 433-441.

inhibit the growth of understory plants, particularly those that require more light or specific soil conditions, disrupting forest regeneration."

Korb, J. E., et al. (2011)[97] discussed how mulch, "…can contribute to the spread of non-native species in forest ecosystems. The mulch may carry seeds of invasive plants, which, when decomposed or redistributed, can establish new invasive populations, further threatening the native biodiversity of the forest floor."

In addition, the US Army Corps of Engineers states that "The use of mats, and the operation of heavy equipment on those mats, may result in soil compaction that can adversely affect water infiltration, reestablishment of vegetation, and other processes. … the use of mats during construction activities may have resulted in soil compaction and produced depressional areas that may hold surface water and inhibit the recovery of hydrologic and soil functions, as well as the plant community, in the area affected by the placement of mats."
https://www.federalregister.gov/d/2025-11190/p-355

"In the case of the Glenallan project, portions of our haul roads were selected to follow a relic asphalt road through the woods that will be carefully removed when the project is complete."

COMMENT: This is a half-truth. While the "relic asphalt road" may have run "through the woods" before construction started, the photo below shows that the woods have been clearcut and are now a stack of cut logs. Still, we are glad that the construction material will be "carefully removed" and hope that the large cut logs do not interfere with that process.

[97] Korb, J. E., et al. (2011). "Invasive plant management and the unintended consequences of mulch application in forest ecosystems." Biological Invasions, 13(3), 657-669.

"Montgomery Parks prioritizes the conservation of existing trees based on a clear understanding of the pressures newly planted trees face from deer and NNIs. The Glenallan Tributary project includes an NNI management plan with efforts extending into the forest beyond our project limits to attempt to establish a healthier native vegetative community."

COMMENTS: This is Orwellian disinformation. Parks would have us believe that to conserve existing trees, they must be cut down. If parks truly "prioritizes the conservation of existing trees," then we would not have the video and photographs of log piles such as the ones above and below.

Furthermore, DEP has admitted, and we have seen, that it cannot control the growth of invasive post-stream "restoration" construction. This can be seen at any county stream "restoration" project such as the ones at Falls Reach and Breewood. These projects disturb large swathes of soil which is a major cause of invasive plant spread.

A 10/18/2021 Montgomery County DEP fact sheet about their Falls Reach, Potomac stream "restoration" states "Vegetative cover in the stream riparian area has successfully been reestablished…." However, a site visit on 10/24/2023 showed that four and a half years after project completion in March 2019, the forest floor was overrun with the non-native invasives Japanese Stiltgrass (*Microstegium vimineum*) and Hairy Jointgrass (*Arathroxon hispidus*).

Likewise, Montgomery Parks cannot control invasives on undisturbed parkland, much less on "restoration" sites. I was a Parks Weed Warrior for six years then a Weed Warrior Supervisor for eleven more years and witnessed uncontrolled invasives in wide areas of our parks. I stopped volunteering when Parks threatened to "fire" me if I were to ever discuss the issue of stream "restorations."

"The project will implement a robust planting plan well above regulatory requirements that consists of native tree, shrub, and herbaceous species, as well as live staking along the channel banks. Planting will happen late winter/early spring 2025 and include deer protection measures around tree and shrub plantings."

COMMENT: This is greenwashing and a typical red herring that deflects from the fact that these stream "restorations" should not be done in the first place. Parks' objective should be to save our forests, not replant them after Parks clearcuts them. Parks apparently operates in the Bizarro World where "Us do opposite of all Earthly things!"[98]

[98] Greenberger, Robert; Pasko, Martin (2010). The Essential Superman Encyclopedia. Del Rey. pp. 28–29. ISBN 978-0-345-50108-0.

> **No amount of planting can replace what was clearcut for this project. DC-area botanist John Parrish (formerly with the National Park Service Center for Urban Ecology, past vice president of the Maryland Native Plant Society, currently serving on the Boards of Conservation Montgomery and the Friends of Ten Mile Creek) has said, "While there is replanting of young saplings after stream "restorations, planting groups of trees on open ground to mitigate forest loss cannot replicate the loss of long-established forest soils, structure and biodiversity of forests destroyed…. It will take 100 years or more for a forest to develop soils and structure capable of sustaining a full complement of native plants and animals."[99] Plus, it will take decades for young trees to sequester as much carbon as the large trees that were cut down.**

"Our goal is for the restored riparian buffer to be more diverse and resilient than the degraded system that existed pre-construction, and for our planting efforts to enhance the pre-existing trees and native understory that is preserved throughout construction."

> **COMMENT: This is greenwashing and a typical red herring that deflects from the fact that these stream "restorations" should not be done in the first place. Parks' attitude seems to be, "We'll cut down all the trees, but don't worry because we will clean up all the wood chips." No amount of planting can replace what was clearcut for this project. DC-area botanist John Parrish (formerly with the National Park Service Center for Urban Ecology, past vice president of the Maryland Native Plant Society, currently serving on the Boards of Conservation Montgomery and the Friends of Ten Mile Creek) has said that after the loss of long-established forest soils, structure and biodiversity, "It will take 100 years or more for a forest to develop soils and structure capable of sustaining a full complement of native plants and animals."**

"Prior to construction, many areas of the site were unwalkable due to being overtaken with species such as bamboo (*Phyllostachys aurea* and *Pseudosasa japonica*), porcelain-berry (*Amur peppervine*), wineberry (*Rubus phoenicolasius*), Japanese knotweed (*Reynoutria japonica*), and other NNI species."

> **COMMENT: This is a red herring to deflect from the fact that this project should never have taken place. Any invasive removal could, and should, have been done by hand and possibly with spot herbicide treatment, not by scraping the forest floor bare with heavy equipment. This is a bogus attempt to justify the project.**

Use of Rock for Stream Stabilization

"Your letter also references rock rubble being "dumped" into the stream as an example of a "failed" stream restoration.

[99] Public Hearing Testimony to the Montgomery County Council, RE: Bill 25-22 Forest Conservation – Trees (Oct. 4, 2022 Public Hearing), by John Parrish

COMMENT: No, our reference to rock rubble being dumped into the stream was to point out how environmentally destructive this project is. See the video[100] screen shot below.

"The riprap shown in the video already existed on site as the result of a 1960's WSSC infrastructure protection project (not a stream restoration) and is being replaced with more sustainable natural channel design techniques to protect the WSSC infrastructure."

COMMENT: This statement contains both greenwashing and disinformation. It is greenwashing because Parks throws out a typical red herring to deflects from the fact that these stream "restorations" should not be done in the first place. This is a common ploy, the same one used by DEP, to disingenuously justify doing a stream "restoration." It uses fearmongering to blur infrastructure, in this case sewer line, protection projects with the purpose of a stream "restoration." Targeted spot hardening of sewer lines can be done in the immediate area of the erosion problem – this does not justify the hundreds or thousands of feet of some stream "restorations (1500 linear feet in the case of the Glenallan Tributary between Georgian Woods Place and Glenallan Avenue).

Parks is probably referring to the short section just upstream from Glenallan Avenue which may very well have been a previous "WSSC infrastructure [i.e., sewer line] protection project." Regardless of the original purpose of the riprap (rock rubble), its disruption and planned replacement by Parks proves that the only real solution to stream erosion is upland, out-of-stream stormwater control. Anything done in the stream itself will be washed out by future storms due to uncontrolled out-of-stream stormwater from developed areas.

Parks is talking out of both sides of their mouth. If Parks is claiming that Glenallan is an infrastructure protection project, then no MS4 permit credit can be claimed. If Parks claims to be using the natural channel design technique, which is a stream "restoration" technique, then this is not an infrastructure protection project.

[100] Video of the Glenallan stream "restoration"
https://www.youtube.com/watch?v=91O2bAdT8PY&feature=youtu.be

Regardless of its purpose, any in-stream technique is doomed to failure without controlling the stressor – the upland stormwater fire hosing into the stream. (See photographs of washed-out Montgomery County and other state-wide projects in the footnoted presentation.[101]) Parks is using disinformation to claim that the natural channel design technique is sustainable. This is clearly not the case given the following examples of the cost to repair failed stream "restorations" in Montgomery County:

- **Lower Booze Creek, Potomac, MD: repair cost $3.6M[102]**
- **Grosvenor Luxmanor: repair cost scheduled for $4.8M per MoCo DEP[103]**
- **Old Farm Creek Tributary in North Bethesda: repair cost scheduled for $800K per MoCo DEP[104]**

Plus, photographic documentation of washed-out projects in Montgomery County and other locations in Maryland (see photographs in the presentation https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing) lead to the conclusion that these projects are not sustainable.

Disturbingly, in the past Parks expressed no concern about the cost of stream "restoration" repairs during a pre-construction public tour of the Long Branch project in Takoma Park in 2021 when we pointed out that taxpayer dollars must be spent to repair or replace failed projects after the typical industry one-year guarantee runs out. Parks was asked, but refused to tell us, the length of the vendor's guarantee on that project.

Regarding why the "natural channel design technique" is used, Palmer et. al (2014)[105], states that "The combination of training materials, the profit factor, and Rosgen's charismatic personality has contributed significantly to the heavy reliance on the NCD [natural channel design] approach by practitioners in the private sector." They also said that "…the data we assembled (Table 2) suggest [these techniques] are often ineffective in stabilizing channels when stability is the primary goal."[106]

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[101] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

[102] Per DEP, https://www.montgomerycountymd.gov/water/Resources/Files/restoration/streams/Lower-Booze-Creek-Restoration-Repair-Presentation.pdf

[103] https://www.montgomerycountymd.gov/water/Resources/Files/restoration/streams/grosvenor-presentation-wildwood-manor.pdf

[104] https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/restoration/oldfarm-creek-neilwood/WRE12-26%20Old%20Farm%20Creek%20Public%20Meeting%20Presentation%20Final.pdf

[105] Palmer, M. A., K. L. Hondula, and B. J. Koch, University of MD, 2014, "Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,", Annu. Rev. Ecol. Evol. Syst. 2014. 45:247-269. (https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf)

[106] Palmer, M. A., K. L. Hondula, and B. J. Koch, University of MD, 2014, "Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,", Annu. Rev. Ecol. Evol. Syst. 2014. 45:247-269. (https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf)

An unanswered question is: who is paying for the section of the project meant to protect WSSC sewer lines and who will pay for the repairs when it is again washed out? Is it WSSC, DEP, or Parks?

"The use of placed rock with geotextile materials is a proven stream restoration practice to stabilize banks and prevent further erosion from uncontrolled urban runoff."

Comment: This is disinformation. The published research[107] and photographic documentation of washed-out projects in Montgomery County and around the state[108] prove that this is false.

Parks fails to disclose from the public that the "geotextile materials" being used is actually plastic sheeting which will break down into microplastics. (See photographs from the Glenallan site in other comments below).

"In the video, you can observe individually selected, large rocks being precisely placed in the channel by skilled operators to protect the stream bed and banks while redirecting powerful storm flows into designated scour pools at the center of the channel, thus reducing bank stress."

COMMENT: It is false that this project will "protect the stream bed and banks" by reducing bank stress." While some rocks are precisely placed, others are dumped directly from dump trucks into the stream channel. Regardless of the precision of some rock placement or the random dumping of tons of rock rubble into the stream bed, the science and photographic documentation[109] show that these techniques are failing in Montgomery County and around the state. The photographs of failed projects below show that bank stress is not reduced – the "precisely placed" rocks have been dislodged and the banks behind them have been eroded.

[107] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing) – see list of published papers.
[108] Ibid
[109] Ibid

Coalition to Stop Stream Destruction

(Above: Cabin John Creek, Bethesda)

(Above: Long Branch, Takoma Park)

> **Per Palmer et. al (2014)[110], "Less than half of these projects showed improvements in channel stability compared with prerestoration regardless of how stability was measured and even though many of the projects involved the use of large boulders or other materials to hold the banks in place."**

"The riffle grade control structures are constructed not of uniform dumped riprap, but of a carefully selected gradation of stone and sand, including native bed material. This material matrix was deliberately sized to withstand storm flows while providing oxygenating riffle habitat for ecological development."

> **COMMENT: It is disinformation that this project will "withstand storm flows." First of all, regardless of its detailed composition, the video shows rubble being dumped into the stream. Second, these projects do not work per the published science and documentation of washed-**

[110] Palmer, M. A., K. L. Hondula, and B. J. Koch, University of MD, 2014, "Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,", Annu. Rev. Ecol. Evol. Syst. 2014. 45:247-269. (https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf)

out projects in Montgomery County[111] (see scientific references and photographs in a presentation[112]).

Third, if this project was designed to "withstand storm flows," for how many years is the vendor's guarantee. Parks has refused to divulge this information for the Long Branch project.

Fourth, according to a 2021 paper by Dr. John Field[113], fluvial geomorphologist with Field Geology Services, for the City of Alexandria on the topic of raising a stream channel such as the Glenallan tributary,

- **"There is no guarantee that the imported fill's pollutant levels will not match or exceed those of the natural bank soils, which the City claims to be the source of pollutants reaching Chesapeake Bay."**
- **"The fill will completely bury and kill the existing …aquatic ecosystem of macroinvertebrates, amphibians, and fish…."**
- **"Due to the cutting of mature trees, "the City's ability to achieve its goal of preserving and enhancing aquatic and riparian ecology… will have already been lost for decades, and perhaps permanently."**
- **"The City also will fail to achieve its goal of reducing sediment flows into Potomac River and Chesapeake Bay. …channel incision and widening have occurred in response to the extensive development in the watershed and to establish a new equilibrium condition. Adding fill to the channel runs directly against this natural response to urbanization: After decades of naturally reducing its gradient through incision, the filled-in, elevated streambed will produce a steeper channel that will increase (not decrease) the stream's capacity to carry sediment. The stream's erosive energy will be rejuvenated and, as a result, Taylor Run will move sediment more efficiently towards Chesapeake Bay."**
- **"Further, the fill will replace the material that has taken decades to erode away, making sediment available to wash downstream again. As the proposed design does not address the excess runoff responsible for the incision and widening, the fill's long-term fate will ultimately be the same: The stream will once again work toward a configuration in equilibrium with the urbanized watershed, eroding the added material until channel stability is reached. This exact scenario has already played out in Strawberry Run, which was "restored" several years ago through a similar "Natural Channel Design" project. Simply put, sediment should not be added to the stream if the goal is to reduce the amount of sediment being carried to the Bay."**

From a 2020 paper by Field[114] for an Arlington County stream "restoration":

[111] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

[112] Ibid

[113] Field, John, 2021, "Analysis of the Stream "Restoration" Design for Taylor Run in Alexandria, VA"

[114] Field, John, 2020, "Analysis of the Stream Restoration Design of Donaldson Run Tributary B in Arlington, VA"

- **"Why, then, is the sediment that has taken decades to wash downstream now being replaced with imported fill? The long-term fate of the fill will invariably be similar to previous soils eroded away given that implementation of the project will have no effect on the high volume of runoff emanating from the urbanized watershed. Simply changing the form (i.e., width, slope, and sinuosity) of the channel as proposed in the restoration design does not change the process at the root of the problem."**
- **"The addition of fill, therefore, achieves exactly the opposite result of the project's goal to reduce downstream sediment transport towards Chesapeake Bay."**
- **"In addition, the fill added to the existing channel will be far more erodible compared to the cohesive native soil, so is more likely to be removed in years rather than decades."**
- **"Put simply, why add sediment to reduce sediment, especially if the project goals are less likely to be achieved?"**

Also, per Field (2020)[115],

- **"The numerous boulder step structures are justified as "grade controls" (i.e., to prevent downcutting of the channel) and habitat features."**
- **"The large rock, although not explicitly stated, is essentially being used to armor or lock the proposed design channel in place in direct contradiction to the basic tenets of Natural Channel Design (Rosgen, 2011). As a result, the use of large rock in the design is a tacit acknowledgement that the proposed project cannot function as a geomorphically "stable" channel. By creating a static rather than a stable channel with the freedom to adjust its position over time, several potential problems are likely to arise if the project is implemented as designed."**

Per Field (2021)[116],

- **"Boulder steps naturally form on steep mountain streams but their use in Taylor Run, where the "restored" stream is to be filled with fine sediment, will accelerate failure of the project (as described in Section 4.1 above) and prevent attainment of the City's goals"**

- **"When water flows hit the point of contact between large, hard boulders and the fine, erodible sediment surrounding them, the stream will preferentially and aggressively scour the finer sediments in the bed or banks of the channel in a manner akin to the scouring that creates deep pools around bridge abutments and piers (Raudkivi and Ettema, 1983). As the boulder steps will sit on "footer" boulders set beneath the channel bed (Web citation 3, Design drawing DET-01), undermining of the structures is less likely (yet still possible) than the "outflanking" of the structures – that is lateral erosion around the boulder steps. Such outflanking occurred in the channel**

[115] Ibid

[116] Field, John, 2021, "Analysis of the Stream "Restoration" Design for Taylor Run in Alexandria, VA"

constructed as part of the previous Strawberry Run "restoration" (Figure 8) and at a project on Donaldson Run in Arlington County (Figure 11)."

- **"The repeated failure of boulder structures, when implemented in fine-grained bank sediments and streambeds, extends beyond these two local examples (Miller and Kochel, 2010) and indicates they will be problematic if used on Taylor Run. Given the preferential scouring that occurs around boulders, the boulder-step structures on Taylor Run will provide numerous locations where the "restored" stream structure will begin to unravel, and ultimately will propel the widespread failure described in Section 4.1 above. Consequently, the ability to sustain the project's desired end state will be greatly compromised, not enhanced, by using boulders to create step-like features."**

Although Fields' analyses were for streams in Northern Virginia, hopefully Parks agrees that the same physics of fluvial geomorphology apply in Montgomery County as in Arlington County and the City of Alexandria.

Documented photographic evidence in Montgomery County and other parts of the state[117] prove that these projects do not "withstand storm flows" and are being washed out. Taxpayer dollars must then be spent to repair or replace them because the typical industry stream "restoration" guarantee is only for one year.

Examples of the cost to repair failed stream "restorations" in Montgomery County include:

- **Lower Booze Creek, Potomac, MD: repair cost $3.6M[118]**
- **Grosvenor Luxmanor: repair cost scheduled for $4.8M per MoCo DEP[119]**
- **Old Farm Creek Tributary in North Bethesda: repair cost scheduled for $800K per MoCo DEP[120]**

"Riffles are <u>not</u> lined with any plastic or geotextile underneath to ensure groundwater interaction along the stream channel."

COMMENT: This is disinformation meant to imply that *no* plastic sheeting is being used at all. Parks is trying to obfuscate our previous comment that was meant to simply point out that plastic sheeting was being used in this project, not exactly where it was being placed along its entire 1500 foot length. The following photographs taken on 11/16/2024 clearly shows that black plastic fabric (circled in red) is being used in this project.

[117] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

[118] Per DEP, https://www.montgomerycountymd.gov/water/Resources/Files/restoration/streams/Lower-Booze-Creek-Restoration-Repair-Presentation.pdf

[119] https://www.montgomerycountymd.gov/water/Resources/Files/restoration/streams/grosvenor-presentation-wildwood-manor.pdf

[120] https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/restoration/oldfarm-creek-neilwood/WRE12-26%20Old%20Farm%20Creek%20Public%20Meeting%20Presentation%20Final.pdf

The following on site photograph shows a roll of the plastic material that is being used. It is labeled GT180, 180" x 300':

This product, SKAPS GT-180, is a needle-punched nonwoven geotextile made of 100% virgin polypropylene per the web site https://skaps.com/products/geotextile-resources/skaps-gt180/

Like other projects in the county and around the state, as this project is washed out and the plastic is exposed to air and light, it will degrade into microplastics. See photos of stream "restoration" failures that exposed plastic fabric[121] including the photos below from Snakeden Branch in Potomac and Annapolis Landing in Anne Arundel County, and a photo which is a proposed mitigation site for the I-495 and I-270 widening.

[121] in the presentation https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

(Above: exposed plastic fabric at Snakeden Branch, Potomac)

Coalition to Stop Stream Destruction

(Above: stream “restoration” failure in Annapolis Landing, Anne Arundel County; photo by Arundel Rivers Federation, Testimony on HB 942 on March 3, 2023)

(Above: from 9/2/2022 on a tributary to Great Seneca Creek in the area south of Suffolk Terrance)

"These practices have been thoughtfully designed to both withstand the unnatural storm flows caused by urban runoff while mimicking elements of an unaltered aquatic ecosystem to promote ecological function."

COMMENT: This is demonstrably false. First, photographic documentation from around the state show that these practices are being washed out by urban runoff. Please refer to photographs[122] of failed stream "restorations" in Montgomery County and other jurisdictions.

Second, refer to the quotes from papers from fluvial geomorphologist John Field about the instability of such practices.

[122] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

Third, the published science[123] which analyzed over 700 stream "restorations" concludes that these projects do not work to either stabilize streams, improve water quality, or improve ecological function. Montgomery County DEP has admitted that none of their past 56 projects starting in 1992 have improved stream ecology.

Unfortunately, Parks has never posted any results of their stream "restorations" to back up their assertions. Thus, there is no scientific basis for the assertion that stream "restorations" "promote ecological function."

Fourth, the typical industry stream "restoration" guarantee is only for one year because they know the susceptibility of these projects to being washed out by storm events. After the guarantee period is over, taxpayer dollars must then be spent to repair or replace these damaged projects.

"Stream restoration plays a critical role in mitigating the impacts of urban development on our waterways,"

COMMENT: This is disinformation. It is the standard claim of the $25 billion stream restoration industrial complex and those who are either ignorant of the science or simply choose to ignore the science. Parks, MoCo DEP, the permitting agencies (MDE and USACE), and the industry would like us to believe that the damage done at a site of urban development is balanced (or zeroed-out) by a "restoration" at a site such as the Glenallan Tributary – a zero-sum game. The problem is that the science and empirical evidence shows that so-called stream "restorations" do not actually work. (See scientific references and photographs of failed projects in Montgomery County and other jurisdictions in footnoted presentation[124]). What actually happens is environmental damage at both the development site *and* environmental damage at the mitigation site. The result is a net decrease in natural areas, forests, and wildlife habitat.

To put it a different way, two wrongs don't make a right.

"but it is only one of the many tools Parks uses to improve water quality and habitat. Other tools include impervious removals, storm drain daylighting, outfall restoration, soil deconsolidation, riparian enhancements, headcut (areas of severe vertical erosion) stabilization, stormwater retrofits of existing untreated impervious surfaces (micro-bioretention practices, bio-swale conversions, landscape infiltration, etc.), native plantings, micro-topography restoration, and other techniques to capture and treat runoff while enhancing ecological systems."

COMMENTS: It is encouraging that Parks is aware of the range of non-destructive stormwater control practices. But stream "restoration" is the one tool that should not be in their toolkit since it is the only destructive stormwater control practice in their list. It should be abandoned

[123] Listed in Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

[124] Bawer, K., 2024," Stormwater Control & Stream Restoration: What Works and What Does Not," presentation for Rockville Science Day: April 21, 2024 (https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing)

> **in favor of all the other tools which are out-of-stream, non-destructive stormwater control projects that control stormwater runoff before it can firehose into streams.**

"Our team of experts - which includes biologists, engineers, ecologists, arborists, urban foresters, and environmental construction specialists - works hard to ensure that these projects are designed and implemented thoughtfully, with careful consideration of both their impacts and benefits."

> **COMMENTS: While there might have been a "careful consideration of both their impacts and benefits," the facts on the ground speak for themselves – stream "restorations" are destroying our stream valleys. Parks' comment is quite Orwellian given what is shown in the video of the Glenallan project[125] - it is all destruction. We are being asked reject the evidence of our eyes. This is the very definition of greenwashing and disinformation.**

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For background information, here are a few links:

- Video of Gaithersburg Solitaire Court stream "restoration": https://www.youtube.com/watch?v=NvTvPnG6Qs8
- Video of the Glenallan stream "restoration" https://www.youtube.com/watch?v=91O2bAdT8PY&feature=youtu.be
- Link to presentation that gives some background information on stormwater control and the damage done by stream "restorations" for stormwater control. It includes references to scientific papers: https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing
- Link to comments on Maryland Department of Transportation's State Highway Administration's draft MS4 permit that includes generic comments on stream "restorations": https://drive.google.com/file/d/1cncF1E32jrxdppqd5ghzZ2AsJjWt5P0O/view?usp=sharing
- Link to comments on Chesapeake Bay Program update ("Beyond 2025") to Chesapeake Bay Watershed Agreement: https://drive.google.com/file/d/1dBBEVLkvRCCKOlaw4RRDOU0B35exnS64/view?usp=sharing
- Link to March 2024 letter that debunks Montgomery County Department of Environmental Protection's false claims about stream "restorations": https://drive.google.com/file/d/1-e85ZiQfYBrySjswPgk61dnJIxTwYmMw/view?usp=sharing

[125] Video of the Glenallan stream "restoration" near Brookside Gardens at https://www.youtube.com/watch?v=91O2bAdT8PY

APPENDIX 4: CSSD comments on Montgomery County Department of Environmental Protection's response to comments on Glenallan engineered stream "restorations"

(January 14, 2025)

(Revised 11/12/2025, 3/8/2026)

Below are quotes from a 12/19/2024 note from Montgomery County Department of Environmental Protection (DEP) regarding our recent call to ban stream "restorations" followed by our comments:

- "DEP cannot support your call for banning stream restoration. Our decision is based foremost on our use of knowledge, science, and data to improve and adapt our program to ensure protection of the stream riparian resources, and water quality in the County."
    - **FACT: This is disinformation. DEP has never provided scientific evidence to support their position due to the fact *there is no supporting scientific evidence*. The published science which analyzed over 700 stream "restorations", documentation of washed out projects in Montgomery County, and ground observations of environmental damage (see references and photographs in the presentation https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing) and a video of the Glenallan stream "restoration"** (https://www.youtube.com/watch?v=91O2bAdT8PY) **all lead to the conclusion that these projects do not work to either stabilize streams, improve water quality, or improve ecological function. In fact, DEP has admitted that none of their past 56 projects starting in 1992 have improved stream ecology as measured by benthic macroinvertebrate improvement. There is no scientific basis for continuing the destruction caused by stream "restorations."**
    - **Plus, the Chesapeake Bay Program's document "A Unified Guide for Crediting Stream and Floodplain Restoration Projects in the Chesapeake Bay Watershed" has a long list of known negative impacts associated with stream restorations"[126] including**
        - **Depleted DO**
        - **Iron Flocculation**
        - **Warmer Stream Temps**
        - **More Acidic Water**
        - **More Stream Primary Production**
        - **Benthic IBI Decline**
        - **Construction Turbidity**

[126] See Page 73, Table 19: https://chesapeakestormwater.org/wp-content/uploads/2024/01/Unified-Document_Clean_1.12.24_updated-links.pdf f

- **Project Tree Removal**
- **Post-Project Tree Loss**
- **Invasive Plant Species**
- **Change in Wetland Type or Function**
- **Downstream Benthic Decline**
- **Blockage of Fish Passage**

- "With data from scientists and engineers over the last 20 years, stream restoration has proven to be effective in addressing stream erosion and sedimentation problems and restoring stream health."
    - **FACT: This is false. DEP has never provided any published science to prove this false claim. The published science concludes that these projects do not work to either stabilize streams, improve water quality, or improve ecological function. DEP has admitted that "We have not seen benthic [macroinvertebrate] improvement in any of our stream restorations."[127] BMIs are a measure of stream health. There is no scientific basis for continuing the destruction caused by stream "restorations."**

- "The Maryland Department of the Environment (MDE) and Environmental Protection Agency (EPA) have approved the use of this practice…."
    - **FACT: DEP disingenuously uses the justification of MDE and EPA approval to GREENWASH and deflect from the fact that stream "restorations" are ineffective per the published science and destructive per our own observations (see references and photographs in the presentation at** https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing**) and a** video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY**). Neither MDE nor EPA mandate the use of stream "restorations." Per an EPA letter dated 11/6/2024, "EPA does not direct states or localities on which BMPs [stormwater control projects] are used to reduce pollutant loads…." Note that EPA has approved the use of dirty coal fired power plants, but that does not make them environmentally acceptable. As everyone knows, "The right to do something does not mean that doing it is right," in the words of William Safire.**

- "DEP chose to fund the Glenallan project due to erosion complaints…."
    - **FACT: DEP should fund projects based on science, not complaints. In fact, stream "restorations" *do not* stop stream erosion since the source of the problem - uncontrolled stormwater from developed areas that firehoses into streams - is not controlled. Past DEP projects are being washed out by storm events post construction. (see photos in the presentation** https://drive.google.com/file/d/1dos8SmOF5_evuI8Y_CWuUMVNHZoVP1Sf/view?usp=sharing**).**

[127] . Per Montgomery Co. DEP in Stormwater Partners meeting (1/16/2024).

The only way to stop erosion if the out-of-stream stormwater is not controlled is to line a stream with concrete (see photo below) – a practice from the 1950s that fortunately has gone out of favor.

(Above photo from esa.org)

- "The Glenallan Tributary suffered from… a stream channel devoid of aquatic habitat."
    - **FACT: This is FALSE and ridiculous on its face. It shows a misunderstanding of basic ecological principles and terminology. Pre-construction photos from the Public Meeting presentation on October 24, 2017 show various existing aquatic habits along the entire length of the proposed project.**

- "Our technical review of the video you referenced confirms the project is being executed properly with careful protection of trees, best professional techniques for temporary haul roads, and proper placement of rock material to stabilize the stream. Only selective tree removal has occurred…."
    - **FACT: This is typical DEP greenwashing. DEP asks that we not believe our eyes when the video of the Glenallan stream "restoration" (https://www.youtube.com/watch?v=91O2bAdT8PY) shows wanton clearcutting of the riparian forest, piles of cut mature trees, a temporary haul road that slices through the forest, and imported rock rubble being haphazardly dumped, not placed, into the stream. The few trees with scrape protectors attached to their trunks will most probably die due to soil compaction of their critical root zones and hydrologic changes caused by heavy construction equipment and tree removal.**

- "During stream restoration projects, every effort is made to improve growing conditions for trees, prioritize healthy and mature trees for retention, and minimize the number of trees removed."

- **This is typical DEP greenwashing and Orwellian language. They are saying they must clearcut the stream-side trees in order to improve growing conditions. The way to minimize the number of trees removed is to not cut them in the first place.**

- "In this particular project, extensive non-native invasive plants (NNI) were cleared prior to construction, which is why the video shows cleared areas.
  - **THIS IS DISINFORMATION. The video shows cleared areas because the forest was clear-cut of ALL plants – mature trees, shrubs, and understory plants along with invasives. Any NNI removal could have been done by hand, not chainsaws and heavy equipment. This is a bogus attempt to justify the project.**

- "This NNI removal will enable future trees to thrive without competing for resources."
  - **THIS IS DISINFORMATION. The county has admitted, and we have seen, that it cannot control the growth of NNIs post-stream "restoration" construction. This can be seen at any county stream "restoration" project such as the one at Falls Reach. These projects disturb large swathes of soil which is a major cause of invasive plant spread.**
  - **A 10/18/2021 Montgomery County DEP fact sheet about their Falls Reach, Potomac stream "restoration" states "Vegetative cover in the stream riparian area has successfully been reestablished…." However, a site visit on 10/24/2023 showed that four and a half years after project completion in March 2019, the forest floor was overrun with the non-native invasives Japanese Stiltgrass (Microstegium vimineum) and Hairy Jointgrass (Arathroxon hispidus).**

- "Over time, vegetation around a stream restoration project returns, trees grow, and animal/aquatic life abound again."
  - **This is GREENWASHING nonsense. DC-area botanist John Parrish (formerly with the National Park Service Center for Urban Ecology, past vice president of the Maryland Native Plant Society, currently serving on the Boards of Conservation Montgomery and the Friends of Ten Mile Creek) has said that after the loss of long-established forest soils, structure and biodiversity, "It will take 100 years or more for a forest to develop soils and structure capable of sustaining a full complement of native plants and animals."**

    Plus, a City of Toronto study titled "Every Tree Counts"[128] compared the environmental performance of a 75 cm (30 inch) diameter tree to a 15 cm (6 inch) diameter tree. "A 75cm tree in Toronto intercepts ten times more air pollution, can store up to 90 times more carbon and contributes up to 100 times more leaf area to the City's tree canopy than a 15cm tree…. A 75cm tree in Toronto intercepts ten times more air pollution, can store up to 90 times more carbon and contributes up to 100 times more leaf area to the City's tree canopy than a 15cm tree."

[128] "Every Tree Counts A Portrait of Toronto's Urban Forest," City of Toronto Parks, Forestry & Recreation, Urban Forestry https://www.itreetools.org/documents/349/Toronto_Every_Tree_Counts.pdf

The article "Why Investing in Mature Tree Growth is Beneficial for Cities: A Financial and Environmental Case"[129] describes more ways in which mature trees offer advantages over newly planted trees. Mature trees are some of our best tools for combatting the impacts of climate change.

The title of a Bay Journal article from October 2025 by Timothy Wheeler is "Forests, urban tree canopy still shrinking in Bay region." Both DEP and Montgomery Parks have contributed to this situation by allowing engineered stream "restorations" such as the Glenallan project which clearcut riparian forests.

- "This [stream] erosion causes many problems such as…exposure of sanitary sewers running within the stream bed (a public health concern)…."
    - **This is fearmongering by DEP which purposely conflates sewer line protection projects with the purpose of a stream "restoration." Targeted spot hardening of sewer lines in the immediate area of the problem can fix this, unlike the hundreds or thousands of feet of some stream "restorations."**

- "Focusing our efforts solely on upland green infrastructure cannot fix the problems in our streams."
    - **This is easily disproved DISINFORMATION. The published science shows that stream "restorations" do not work. The *only* solution is upland (out-of-stream) projects that control stormwater runoff at its source (from roads, parking lots, roofs, etc.) with bioretentions, permeable pavement, rain gardens and many other practices. In the past, DEP has referenced papers to incorrectly conclude that upland green infrastructure cannot stop stream erosion. However, the proper conclusion from those papers is simply that *not enough* upland projects were done to keep stormwater from firehosing into streams.**

- "We have many highly developed areas in the county and finding locations for green infrastructure in these areas sufficient in size and expanse is challenging with numerous constraints."
    - **THIS IS MISLEADING: First, DEP does not even do these types of alternative analyses for every proposed stream "restoration" project. For example, DEP never did an upland alternative analysis for the Falls Reach project or the scheduled Grosvenor stream "restoration." Second, DEP has never proven, because it can't, that the county's MS4 permit cannot be met unless stream "restorations" are done. DEP's rational for stream "restorations," aside from their false claims about stream "restoration" benefits, is that it is more convenient to sacrifice our natural areas to stream construction projects than to take on the "challenge" of controlling stormwater outside of streams. What is particularly egregious is that Maryland Department of the Environment (MDE) has statewide data from its 2022 Annual Report on Financial Assurance Plans (FAPs) showing there are 20 non-destructive, out-of-stream stormwater project types that are more cost effective than stream "restorations." This**

[129] https://www.deeproot.com/blog/blog-entries/why-investing-in-mature-tree-growth-is-beneficial-for-cities-a-financial-and-environmental-case/

waste may be of interest to the Montgomery County Office of the Inspector General whose website (https://www.montgomerycountymd.gov/oig/hotline.html) defines waste as "The careless expenditure of county funds or resources above and beyond the level that is reasonably required to meet the needs of the county…." They give examples include buying excessive goods or services and inefficient use of resources.

- "We know that stream restoration is beneficial for habitat improvements, to protect private property and utility infrastructure, and to reduce in-stream erosion and sedimentation."
    - **THIS IS DISINFORMATION. DEP chooses to ignore the science, observations of their washed out projects, and common sense. The published science and ground observations conclude that these projects do not work to either stabilize streams, improve water quality, or improve ecological function. DEP has never provided any published science to support their false claims about the benefits of stream "restorations." DEP continues to falsely conflate utility infrastructure (e.g. sewer line) protection projects with the definition of a stream "restoration" to justify their projects.**

APPENDIX 5: DEP unresponsive to CSSD asks from meeting on JANUARY 22, 2026

- If [an engineered stream "restoration" is] proposed, provide independent scientific justification, not internal DEP monitoring results.

- Post on web detailed plans/permits for all planned stream "restorations." Invite general public, not just local residents to all meetings.

- Provide cost per acre treated for all past MS4 permit projects using same categories as MDE'sAnnual Report on Financial Assurance Plans to allow comparison with state average costs.

- Provide life cycle costs (build, maintain, repair) of all installed MS4 permit projects.

- Provide total acres of forest cut and total shrubs and trees cut (not just large trees) for past &current projects.

- On web, list all engineered stream "restoration" projects, whether alternative analysis was performed, to what storm strengths (e.g., 10-year) subjected to date, if need or needed repair, original cost & repair cost.

- For proposed stream "restorations," perform an alternatives analysis, identify a reasonable range of out-of-stream stormwater management practices that may achieve the objective, and perform a technical evaluation of the benefits and adverse impacts of the evaluated alternatives.