Plumtree Branch Stream Restoration Project

Comments by Bob Dover

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Introduction

Thank you for giving me the opportunity to offer my comments on the proposed Plumtree Branch Stream Restoration project, and on the broader topic of stream restorations conducted in Howard County by the Howard County government and the Columbia Association (CA).

My professional qualifications as a surface water hydrologist and environmental permitting specialist are attached as Attachment 1 to these comments. In my 38 year career as a geologist and environmental planner, I have had specialized experience in three areas that are directly relevant to Howard County and CA's stream and watershed restoration projects:

- In five years at a major oil company, I was assigned as my Department's leading expert in the 3-dimensional geomorphology of stream sediment deposits. I was sent to intensive graduate-level training courses, and attended field visits to study stream deposits both in active streams, and in the geologic record. For the last two years of this assignment, I led multiple canoe-based field trips to train other geologists on the geomorphology of stream sediment deposits.
- As an environmental planning specialist, I have served as the surface water Subject Matter Expert (SME) on dozens of projects, including three projects that involved an analysis of the impact of tree planting/removal on surface water hydrology.
- As an environmental permitting specialist, I author and perform completeness/accuracy reviews on environmental permit applications to state and federal agencies.

I am fully aware that there is a tendency, within the agency and development community, to view all opponents of projects as hippies, NIMBYs, or some other flavor of environmental activist. They are viewed as non-scientists who just oppose projects as a knee-jerk reaction, without any real data or scientific evidence to support their position. In one meeting of the CA Watershed Advisory Committee (WAC), the leader of the committee even went so far as to refer to opponents of the proposed Elkhorn Branch project as "anti-vaxers," clearly an attempt to dismiss their concerns by painting them as having taken a position that is unsupported by the scientific literature.

In introducing my comments, I wish to stress that I have spent my entire 30+ year environmental consulting career working for Federal agencies, and for developers who are applying to those Federal agencies for easements, rights-of-way, or permits. I have never been an environmental activist, and have actually spent my entire career on the agency/developer side of the table in these discussions about construction projects. When I offer comments on the scientific basis and validity of stream restoration projects, they are only offered after detailed study and analysis of the project documentation.

Howard County and Columbia Association Tree Removal Policy

In the August 28 Ball Bulletin, the weekly newsletter from Calvin Ball, Howard County Executive, Dr. Ball stated:

> "By planting a tree, we are improving our living space by reducing . . . . stormwater runoff and flooding."

This policy of encouraging the planting of more trees in order to reduce stormwater runoff and flooding is also a key focus of the Department of Recreation and Parks, Office of Community Sustainability, the Columbia Association and Village Watershed Advisory Committees (WACs), and multiple related environmental advocacy groups. In addition, this effect on stormwater hydrology is just one of multiple beneficial functions that mature trees perform in our community. The forests serve as habitat for wildlife, and recreation space for residents. Large numbers of people, including myself, will cite the view of trees as a substantial reason why we were willing to pay premium prices for our homes. Except for the occasional tree that needs to be removed due to disease, infestation, or as a hazard to infrastructure or adjacent property, there is no downside to encouraging the planting of as many trees as possible in our community.

I fully agree with Dr. Ball's statement, and the efforts of the County departments, the CA and Village WACs, and the other groups. Deforestation and development of impervious surfaces have resulted in increased runoff, which has led to poor water quality, reduced ecological function, and increased erosion rates in Howard County's watersheds.

Why, then, are the Department of Public Works (DPW) and CA so hell-bent on cutting down thousands of trees as part of these stream restoration projects?

And before the reader of this shuts down because they believe I have engaged in hyperbole with my reference to "thousands of trees," allow me to repeat it – it is thousands of trees. This is because one of the primary tricks that these agencies and the stream restoration companies engage in is their definition of "tree." When developing engineering design drawings and communicating impacts to the public, DPW and CA define a "tree" as having a diameter at breast height (dbh) of 12 inches or more. As a result, a large-scale project, such as Plumtree Branch, may be reported to "only" take 46 trees when, in reality, it will take hundreds of trees smaller than 12 inch dbh. As an example, the Plumtree Branch Ecological Restoration Design (dated May, 2022) discloses that 973 trees are located in the project area, but Appendix D only lists those trees greater than 12 inch dbh (Page 8). Page 12 discloses that the project will remove 46 trees when, in fact, this is only the number of trees greater than 12 inch dbh. The real impact is that the project will remove hundreds of trees.

The 12 inch dbh definition may be useful for assessing compliance with state or County codes, but it has nothing to do with the ecological, hydrologic, or visual functions of a tree. Even the smaller trees contribute to these functions. It is ironic that, when cutting down trees, DPW and CA rely heavily on the 12 inch dbh definition, so they can minimize the number of "trees" being removed in the public documentation. However, when they are talking about re-planting 2-inch saplings to replace the removed mature trees, suddenly these saplings are now referred to as "trees." This is pure hypocrisy, intended to minimize public opposition to these tree removal projects, and it is working.

I live adjacent to two areas where “ecological restoration” projects have been recently proposed. These are the Sewell’s Orchard Park project currently being done by DPW on land managed by the Department of Recreation and Parks (Rec & Parks), and the Elkhorn Branch Stream Restoration project proposed by CA. In both cases, the project would have involved large-scale destruction of an existing, mature ecological system in a residential area, with vague, unsupported promises that a newer, better ecological system will somehow arise. In both cases, the authors of the project documentation tried to avoid public opposition by trivializing the number of trees to be removed, either by using the 12 inch dbh definition, or by providing a false definition of “limits of disturbance (LOD)”, or both.

I have been speaking out and writing comments on these projects for almost 18 months now. I have been hoping that someone in a senior, decision-making role within the County and/or CA will realize the hypocrisy associated with advocating for a strong tree-planting policy and, at the same time, allowing County departments and CA to cut down mature trees without even a second thought. As evidence of this statement, I offer two examples:

- On the Sewell’s Orchard Park project, there was originally no consideration given to avoiding removal of trees. After enormous pressure from the community, major design changes were made that substantially reduced the tree removal. However, when construction began in early September, there were still indications that protection of trees was not a priority. Because DPW was using the existing asphalt path for construction access, they needed to construct an adjacent, temporary path to allow continued use by residents. This temporary path, which would be used for about 7 months, went right through the locations of two mature trees – one about 15 inch dbh, and the other about 11 inch dbh. Neither tree was shown on the design plans, even though the residents were assured that all trees greater than 12 inch dbh were on the plans. Because the trees were not on the design plans, the construction crews made a field decision to cut them down. Residents intervened and, after a four-hour standoff, DPW and CA agreed to move the path about five feet to the side, saving the two trees. In the next few days, DPW and Rec & Parks walked the area with residents to evaluate the specific reason that each and every tree must be removed and, in the process, saved about 10 to 15 more trees.

  Why is it the residents who have to intervene and do this micro-locating to minimize tree removals? If the County has a policy to plant as many new trees as possible, can they not also have a policy to make sure that DPW and other County departments perform this micro-locating exercise on each and every project? DPW will argue that this incident was highly disruptive, and caused an extended delay in construction at Sewell’s Orchard. I am sure that is true. In my career, I have found that agency intransigence is always disruptive, and causes delays. The clients I work with understand that being proactive about protecting natural resources, including trees, is far less costly and more expeditious than resisting. In the world I work in, micro-locating is not considered to be an unnecessary cost or delay – it is standard practice and, when done voluntarily and proactively before the construction crews arrive, only takes a few hours and does not cause delays. It is only when common-sense environmental protections are resisted that delays occur.

- On the Plumtree Branch project, there are two areas where the LOD is currently staked to delineate temporary equipment staging areas and temporary access routes. Both are in forested

areas directly adjacent to grassed, lawn areas. I am not sure of the details, but this appears to be due to property line considerations, where the lawn area is on County-owned school property, while the forested area is on County-owned Rec & Parks property. This is a perfect example where different County agencies can cooperate in order to facilitate environmental protections. The removal of decades-old trees to install staging and access areas that will only be used for a few months is unacceptable, and completely antithetical to a pro-tree policy.

When challenged to justify removal of mature trees on these projects, County and CA Staff and the CA WACs cite the project-specific restoration plans, which include re-planting of saplings once the construction is completed. This false equivalence between the ecological, hydrologic, and residential values of existing mature trees versus saplings that may or may not grow into mature trees a couple decades from now is abhorrent. If the saplings do not get eaten by deer, and if they are not washed away in floods, then they may eventually grow into mature trees that have the same ecological, hydrologic, and residential values as the current trees. However, that maturity is not guaranteed and, even if it happens, it will not happen for many years or decades. Evidence of this is the stream restoration project in The Glade in Reston, where there is no sign of re-forestation 14 years after the stream restoration was completed. Also, the difference in ecological and hydrologic productivity between mature trees and saplings in undisputed. There is no comparison. Mature trees are orders of magnitude more important to the health of a watershed than saplings.

It is critical to consider that it is the development-related deforestation that got our watersheds into the poor condition they are in in the first place. Attachment 2 to these comments summarizes the hydrologic and other functions of mature forests. The prevailing “common knowledge” about developed watersheds is that increased runoff is due entirely to conversion of permeable surfaces to impermeable. THIS IS NOT CORRECT. The most important factor in creating increased runoff in developed areas is the elimination of the hydrologic functions of trees. As shown in Sanford and Selnick (2013), mature forests in central Maryland remove more than 50% of the precipitation from the watershed, FOREVER, through evaporation and evapotranspiration. When trees are removed, that water remains in the watershed, in the form of a higher water table. A higher water table means that there is less storage space for water in the vadose zone. When it rains, the vadose zone fills with water much more quickly, and the excess water then becomes increased runoff. It is well-known, in areas where logging occurs, that tree removal immediately leads to an increase in flooding due to the elimination of the evapotranspiration function of trees. Page 14 of the Plumtree Branch design acknowledges that the project will result in a higher water table, but somehow makes this out to be a benefit rather than a problem. In fact, these stream restoration projects will increase flood risks to adjacent and downstream homeowners.

<u>General Observation on Howard County and Columbia Association Public Communications</u>

I do no not live near Plumtree Branch, and will not be directly affected by that project. However, I have reviewed the design drawings, done site walkthroughs to view the stream and the LOD, and conducted a technical review of the Ecological Restoration Design (dated May, 2022) and the Hydrologic and Hydraulics Study Memo (dated August, 2023). This was not a stand-alone review – my review was done within the context of the similar documents used by DPW to communicate details of the Sewell’s Orchard Park project, and by CA to communicate details of the Elkhorn Branch project. I have now spent most of the past 15 months doing intensive research to understand the impacts of the projects on

surface water hydrology, ecology, flooding on adjacent properties, property values, and residential quality of life. I have done the following activities:

- Conducted detailed, technical reviews of all of the associated permit application documents;
- Reviewed the permit-issuing agencies' regulatory permits and their associated application requirements;
- Studied the available scientific literature;
- Contacted and interviewed academic researchers and representatives from the Chesapeake Bay non-governmental organizations
- Attended working meetings with agency and stream restoration company personnel;
- Made multiple, repeated field visits to several proposed and completed stream restoration projects; and
- Offered my comments and observations to County and CA management, staff, and technical advisors, both in writing, and in formal resident speakout sessions.

What I have found in my extensive research efforts is a predictable pattern in the project design and permit application documents used to communicate project information to the public:

1) Exaggerate the magnitude of the problem that needs to be solved;
2) Exaggerate the water quality and ecological benefits that will be generated by the proposed solution; and
3) Ignore and/or trivialize the adverse impacts of the proposed solution to adjacent property owners and to existing ecological resources.

The combination of these three items on all three projects leads to an obvious conclusion. These project design and permit application documents are NOT scientific documents – they are sales pitches. The purpose of these documents is not to identify and analyze effective solutions to real problems, or to communicate the full scope of the project's impacts to affected residents. It is to justify a project for which all of the decisions have already been made. These documents do contain some scattered pieces of truth about what the real problem is and how it may be solved. However, these little bits of truth are overwhelmed by fear-mongering about the current condition about our streams and ponds, and by the enormous amount of greenwashing about all of the ancillary benefits that the stream restoration companies want the agencies and the public to believe will be generated.

This fear-mongering has convinced some residents that replacement of a corroding spillway pipe in Sewell's Orchard is necessary to improve fisheries in the Chesapeake Bay and will protect downstream residents from flooding, neither of which is true. It has also convinced residents that 65 acres of trees in Elkhorn Branch must be cut down to stop the emerald ash borer, destroy all invasive plants, and protect children from falling tree limbs. Similarly, the greenwashing has succeeded in convincing non-technical residents that destruction of an existing, functioning ecosystem will magically lead, in a year or two, to a better ecosystem. People in the community now believe that planting of small saplings and installation of rain gardens in backyards will quickly replace the hydrologic and ecological functions performed by an entire forest of mature trees.

None of these claims are directly made in the project documents, but they are implied, and there are many residents, including individuals appointed to advisory committees and boards, who believe them. The entire Columbia community has now been poisoned by the exaggerated claims made by companies

who seek to make profits by cutting down our trees. I am not saying there are no problems to be solved. The Sewell's Orchard Park spillway must be replaced. Areas where stream erosion imminently threatens adjacent properties must be armored. In the long-term, reforestation and conversion of impervious areas to pervious must be done to reduce stormwater runoff into our streams. But none of these requires the enormously destructive and expensive solutions that are proposed, especially solutions that involve massive removal of mature trees, and solutions that will impose substantial long-term inspection, maintenance, and repair costs to the County and CA.

Below, I will offer some observations on the Plumtree Branch Ecological Restoration Design, dated May, 2022. I have previously expressed similar concerns about the Sewell's Orchard Park 100% Design Report and the Elkhorn Branch Prospectus, in writing and in verbal speakouts. I will be happy to provide those documents, upon request.

Exaggerate the magnitude of the problem that needs to be solved

Of the three components of the pattern of misinformation mentioned above, this one is the most subtle, and, therefore, the most difficult to demonstrate. The Plumtree Branch design never comes out and makes statements such as "infrastructure is imminently threatened by erosion," or "erosion rates are increasing". Instead, it provides a number of apparently innocuous observations about current conditions in the watershed, and then allows the public to sub-consciously draw a connection between these conditions and the need for the project. Examples include:

- The entire discussion of legacy sediments from mills is unsupported by any actual data or observations, but serves the purpose of leading the public to believe that there is a large volume of contaminated, man-made sediment out there, just waiting to be released and needing to be dredged.
- The document contains multiple references to, and photos of, eroded stream banks and sediment in the stream channel. In fact, both eroded stream banks and channel sediments are completely natural, and essential, features of any healthy stream system. Have these been exacerbated by increase runoff? Yes, probably. Does this mean that every single one of them is evidence of an imminent problem that must be addressed with an extremely destructive stream restoration method? No. In my walk-through of the stream, I was actually stunned by how little bank erosion I saw. The erosion is only a few feet deep in most places, and the stream is mostly stabilized by the root structures of mature trees. Yet the design report continually displays these, resulting in an impression, to the general public, that imminent action is needed.
- In one location, the design report shows a photo of a straight stream with a caption stating that the stream "lacks sinuosity", implying that stream restoration is needed to add sinuosity. In another location, the report shows a photo of a meander, implying that the stream's meanders are causing erosion, and stream restoration is needed to reduce this sinuosity. The fact is, stream channels migrate naturally in a floodplain. They become more sinuous until a flood causes them to cut off a meander, creating a straight section of stream. Then the process starts again. Presenting these photos without the context of how streams normally function leads the public to believe the misinformation that a stream restoration project is needed to fix the "problem."

- On Page 6, the design report makes the apparently alarming observation that the "stream is disconnected from its floodplain except during storm events." Again, the impression this leaves upon the untrained residents is that this must be fixed. Of course, the report does not state that ALL water flow in stream channels is disconnected from the floodplain, except when storm events cause the water to rise out of the channel and into the floodplain. That is how floodplains naturally function.
- The same is true of photos of erosion undercutting mature trees, which are about to fall into the stream. Again, this is a natural and essential function of streams. Do trees get undercut by erosion and fall into healthy streams? Yes, all the time. By showing multiple photos of these trees, without providing context, the author of the design is being disingenuous in persuading the public that these trees present an imminent threat.
- Similarly, the design report refers to, and shows a photo of, dead and dying ash trees. The report does not make any statement about what caused the death of these trees, but the context implies that this is due to a degraded stream, and must be fixed through a destructive stream restoration project. There is no evidence of this, and it is more likely that the trees died from emerald ash borer.
- The same is also true of the multiple references to, and photographs of, infrastructure within the project area. Not once does the design report show evidence that any of this infrastructure is under threat of erosion damage. Similarly, the design report fails to mention that, in the infrequent instances where erosion threatens to damage infrastructure, this can be easily addressed through re-location or surgical-scale armoring. However, by repeatedly showing these photos and referencing the existence of infrastructure, the design report implies, without directly stating, that the project must be done, immediately, to stop these imminent threats.
- Perhaps the most egregious instance is the discussion of the Maryland Biological Stream Survey (MBSS) data on Page 7. The text cites a benthic index of biological integrity rating of "poor", as well as some other data, to imply conclusions about the ecological impairment of the stream function. The text fails to point out that every stream in any developed area will show impairment. That does not mean that every stream can, and should, undergo a massive tree removal effort in an attempt to correct the condition. Also, I have been working with these stream survey data for decades, and was taught very early that it is NOT to be used to support project-specific decisions. On the MBSS page where the author of the design report obtained the biological stream condition data, the bottom of the page reads *"Information disclaimer: The information and data on this page is for guidance and general planning purposes only. It should not be used to make decisions on specific matters."* Again, the report never comes out and says that the biological stream condition data justify a stream restoration project. However, by presenting those data without mentioning its intended purpose and the disclaimer, the report serves the purpose of convincing an inexperienced public to support the project.

Exaggerate the water quality and ecological benefits that will be generated by the proposed solution

Like the Elkhorn Branch Prospectus, the author of the Plumtree Branch design report makes inflated and unsubstantiated claims about the water quality and ecological benefits of the proposed project. And

both documents do this in the same way – by misrepresenting statements made in older scientific articles, and ignoring the existence of more recent studies of the benefits of stream restorations.

In the Elkhorn Branch project, the Prospectus cited three articles to support its claims that the project would improve water quality and ecological function. Those three articles were dated 2005, 2005, and 2008 – all of them at least 13 years old at the time the Prospectus was submitted to MDE. In addition, none of those three articles actually stated what the Prospectus claimed that they stated.

The Plumtree Branch report does this one better. It only cites one article to claim these benefits. On Page 14, the report states:

> "Research on steam function supports an argument that this type of restoration will result in an increase in habitat and ecosystem benefits with an increase in physical complexity (Newson and Newson, 2000)."

Whether or not the Newson and Newson article actually supports this statement is irrelevant. The fact is that Newson and Newson is 23 years old, and there has been a massive amount of further research, and published, peer-reviewed scientific articles, since 2000. An annotated bibliography of these articles is included as Attachment 3 to these comments. Beginning in about 2005, and continuing into late 2022, the academic scientists who have studied "stream restorations" and published their results have been relentless and unanimous in opposing stream restoration projects. At this point, I have compiled about 30 recent articles that have studied large groups of stream restoration projects, and uniformly state that these projects do NOT offer any improvement in water quality or ecological function. Palmer and others (2014) compiled results from 644 projects, and in a recent communication from Dr. Palmer (May, 2023), she confirmed that she still stands by her conclusions in that article. Ten of the articles, published since 2017, were from studies funded by the Chesapeake Bay Trust.

An interesting observation about these articles is that several of them are brutal not only in their rejection of the benefits of stream restoration, but of the practitioners who are out there convincing municipalities and HOAs to do it. In peer-reviewed articles in technical journals, they name names and criticize the practitioners as non-scientists driven by profit instead of by science:

- Palmer and others (2014) referred to the practitioners as "charismatic personalities", and "driven by the profit factor."
- Simon and others (2007) said that "Training has empowered individuals that "may have limited backgrounds in stream and watershed sciences to engineer modifications of streams", and "based on 50-year-old technology never intended for engineering design".
- In referring to David Rosgen, the proponent of the Natural Channel Design stream restoration method, in Science Magazine in 2004, J. Steven Kite said that "Dave is creating his own legion of pin-headed snarfs", and "market is being filled by folks with very limited experience in hydrology or geomorphology".
- Simon and others (2005) state that "Practitioners have received "para-professional training".
- Finally, Thompson and Smith (2012) lament that "The practice of stream restoration has far outpaced the science. Practitioners base their efforts on their own personal experience, which is not written and not made available for study. Where they have been made available, they are non-quantitative and anecdotal."

Has anyone in the Howard County government reviewed these articles, and considered their implications for DPW and CA's stream restoration programs? I know, by now, that the answer is clearly "no". This is for two reasons:

- The stream restoration companies are probably anxious that this negative information about their business practices not become available to the public, or to decision-makers within the agencies. Acknowledging and publicizing that the entire academic, scientific community opposes your activities is bad for business; and
- The agency personnel in DPW, other Howard County agencies, and CA have not done the homework needed to learn that there are contrary opinions in the academic community that oppose stream restoration. They have relied on presentations given by the stream restoration companies, have not done any due diligence, and have not hired professional consulting services to provide an independent analysis.

How else can you explain DPW's continued practice of doing stream restoration projects, given the history of results from their own projects? DPW does water quality and biological monitoring in three watersheds, as part of their MS4 permit. They provide an annual report to MDE every December. The annual update of results from watershed monitoring includes several watersheds in which "stream restorations" had occurred in prior years. The results from 2022 are as follows:

- Wilde Lake – The water quality results continued to show elevated total suspended solids concentrations. With respect to biological monitoring, the report states "Overall, the stream system in the Wilde Lake watershed continues to exhibit evidence of the urban stressors affecting it and has not demonstrated measured improvement in either habitat quality or ecological stream health over the seventeen years of monitoring.".

  Most concerning is the geomorphic assessment, conducted long after the Longfellow project in that watershed was completed. The text states "The main goal of the monitoring is to assess the temporal variability of the geomorphic stability of the stream channels upstream of the lakes as they react to restoration activities. Overall, implementation of projects in the watershed do not appear to have significantly improved the physical habitat in the tributary streams."

- Red Hill Branch – This area is downstream of the Bramhope Lane stream restoration project done in 2011. The monitoring in 2021 found no improvement in water quality. The biological monitoring results show that "post-restoration monitoring results indicate a subwatershed in an overall degraded ecological condition, with little change from the first two years of pre-restoration monitoring." In fact, the BIBI scores in 2022 were "slightly worse results than during 2021". Habitat assessments in 2022 were "nearly identical to 2021 and 2020 results", with all sites rated as "degraded". The text states "The biological community and habitat continue to fluctuate slightly from year-to-year, with 2022 results a slight decrease from 2021, but remain in a degraded condition and have not shown any significant improvement after restoration. The report did note that there had been reductions in erosion.

- Dorsey Hall – The post-restoration biological and physical monitoring results were the same as reported for 2021. The report showed that "habitat results have been similar throughout the post-restoration period", with the sites falling into the lowest "severely degraded" category. The physical habitat results show that both monitored sites continue to be severely impacted, "with no evidence yet of ecological uplift after restoration".

Despite this unanimous opposition to stream restoration in the scientific literature, and the results from DPW's monitoring programs in watersheds directly adjacent to Plumtree Branch, none of these recent articles or reports were cited in the Plumtree Branch design report. I wonder why? Like the Elkhorn Branch Prospectus, if the Plumtree Branch document were a sophomore paper on stream restoration for Ecological Studies 101, it would be given an "F" for ignoring more than 20 years or readily-available, relevant, documentary scientific information.

As with all Natural Channel Design (NCD) projects, the stream restoration company will cut down trees and move dirt around in order to create something that looks, to the layman, to be similar to original habitat. However, as noted in the scientific articles since about 2005, there is no evidence, whatsoever, that the original water quality or ecological conditions will return. It is very similar to the Frankenstein story, where dead body parts are sewn together to make something resembling a living human, with the hope that it will somehow magically come to life. However, Frankenstein is science fiction, not science. Like Frankenstein, the use of stream restorations to create the appearance of habitat does not mean that the stream will come back to life. The overwhelming scientific consensus is that it does not come back to life. But the document cannot say that, because the public wants to believe that improvement of water quality and return of the original ecology is the overall objective of these projects. It is not. If the residents were to be told that the stream restorations will not improve water quality of ecology, public support for the projects would evaporate.

Another commonly stated purpose of these stream restoration projects is to reduce erosion, and therefore reduce costs for dredging in downstream ponds and lakes. This was the primary justification given by CA for the proposed Elkhorn Branch project. In their strenuous efforts to get the project permitted and approved, the stream restoration company for that project repeatedly cited their projects in Reston, Virginia, as their "model" project. They cited this project in their Prospectus, and intended to take the CA Board on a site visit there to show how wonderful it was. The company eventually withdrew from the project two days before that planned site visit, so it never happened. However, following up on the repeated claims about Reston, I investigated. In 2008, the developer and the Reston Association promised the community, in writing, that the stream restoration would reduce dredging costs by 50%. Ten years and two dredgings later, it is apparent that the annualized dredging costs have actually increased by about 60%.

The discussion above presents the results of years of academic study and DPW monitoring of the results of former stream restoration projects. Stream restorations do not work. But, why not? The answer is in the runoff. There is widespread consensus that the reason for degraded streams is an increase of runoff due to development. So, how do these stream restoration projects deal with this root cause?

The answer is, not at all. Natural Channel Design stream restoration projects, including Plumtree Branch, attempt to "restore" the original geomorphology of the stream. They do this by modifying the topography of the floodplain, or the stream channel, or both, in order to re-connect them. The theory is that this spreads the stormwater out over a larger area, which will cause it to move more slowly. The slower velocity, in turn, will reduce erosion and promote infiltration, allowing growth of riparian wetlands. The projects also usually involve extensive use of engineered structures in the stream channel to promote pooling, which is expected to improve nutrient processing and provide variable habitats. Engineered structures are also used on the stream banks as armoring, to reduce erosion.

This all sounds great, except that it does nothing to address the original cause, which is the high levels of runoff. This method attempts to address runoff velocity, but does nothing to address runoff volume, and it is the volume that is the problem. By failing to address runoff volume, the channelization, erosion, and disconnection from the floodplain will just happen again. Meanwhile, the stream has now been lined with engineered structures that need to be inspected, maintained, and repaired in perpetuity, increasing long-term operational costs. In Reston, these structures were damaged and required repair only two years after the project was completed, and you can see erosion beneath and behind these structures today, indicating that future failures are likely.

In fact, the failure to address runoff volumes is not the worst part of the problem. As discussed above, and in more detail in Attachment 2, the removal of trees from the floodplain will, on its own, have the effect of increasing runoff volumes and velocities, making them even higher. Trees directly remove stormwater runoff from the watershed, forever, through evapotranspiration, substantially lowering the elevation of the water table. When trees are removed, the groundwater table in the area immediately rises, a process known as "watering-up". This allows the unsaturated zone to become saturated during a storm much more quickly. It is well-established in logging areas that removal of trees immediately increases the frequency and intensity of surface water flooding.

There is an enormous body of literature on this subject – it is not complicated, nor is it controversial. In my Introduction to these comments, I cited the August 28 Ball Bulletin, which stated:

> "By planting a tree, we are improving our living space by reducing . . . . stormwater runoff and flooding."

Dr. Calvin Ball understands this principle. In the meeting in which the CA WAC discussed the Elkhorn Branch project and voted to send a letter of support to MDE, the members had a brief discussion which showed that they, and the CA Staff, understood this principle. Two members discussed that stream restorations resulted in increased extent and frequency of flooding, and the representative from the CA Staff confirmed this. But, he said, the developers were required, as part of the permit application process, to demonstrate that the flooding would not exceed the 100-year floodplain boundary. Whether or not that has been, or could be, demonstrated, is discussed in the section on adverse impacts below. Also, the participants in the discussion never went further and made the connection that I am making in these comments – that removal of trees actually exacerbates the runoff that caused the stream degradation in the first place. But it is an acknowledgement, on the part of CA's advisors, that they are aware that stream restorations result in an increase in runoff.

Ignore and/or trivialize the adverse impacts of the proposed solution to adjacent property owners and to existing ecological resources

The manner in which the Plumtree Branch design document addresses adverse impacts to existing ecology, hydrology, and residents is the same as the manner in which the Elkhorn Branch Prospectus addressed them – not at all. Not a word.

Stream restoration projects using the Natural Channel Design method are massive, enormously destructive construction projects. Plumtree Branch will remove all trees on about six acres of land. Elkhorn Branch was to be 65 acres. All you have to do is go to one of previous stream restoration

projects to see what they look like. Longfellow was 13 acres. A few tall, straggling trees were left in place, and these immediately died due to the compaction of soil around them by construction equipment, and to the change in the hydrologic context. The same can be seen in The Glade in Reston, where there is no sign of mature tree re-growth 14 years after the project. The same is true of the project near Lighting View in Columbia.

It is bad enough that the project area itself must be cleared to perform these projects. Above, I discussed how the Sewell's Orchard, Elkhorn Branch, and Plumtree Branch projects required additional tree removal to establish temporary staging areas and access routes, even in areas where already cleared land is available nearby. What I have witnessed, in the agencies, is not one minute of thought given to the idea that a tree that is 10 or more years old is to be cut down to support a project that will last only a few months. In my work for Federal clients and developers on Federal lands, micro-locating to minimize the removal of all trees (not just those over 12 inch dbh), and any other natural resources, is our standard practice. We don't think about it or have to be reminded – it is how business is done by professional, competent developers and agencies in the 21st century. Therefore, it was a tremendous shock to me to realize that this is not practiced on local government and HOA projects, even though the scale of the destruction is the same.

As discussed above, a major adverse effect of the removal of trees is the elimination of the hydrologic functions of those trees in reducing the volume and velocity of runoff. However, the ecological impacts due to the removal of habitat are also substantial. Somehow, these project documents are able to discuss all of the magical improvements that are expected in the ecology several years down the road, but fail to mention the immediate, irreversible elimination of habitat that will occur within the space of a few weeks.

Where these projects occur in close proximity to residences, or where they occur in forested areas that have recreational paths, they will also have substantial adverse effects on adjacent homeowners and other residents. Many residents, including me, have paid premium prices to buy homes with a view of trees. If the Elkhorn project had been implemented, hundreds of residences that currently have a view of trees would have found their viewscapes replaced with a view of Route 175, or car repair shops on Dobbin.

As mentioned above, these projects are also documented to cause increased frequency and extent of flooding. This is also not mentioned in the Plumtree documentation. The documentation does present the results from a hydrologic analysis, but does not provide any of the input parameters for public review, and does not discuss the meaning of the results with respect to increasing the frequency or extent of flooding on adjacent or downstream properties.

One thing I did notice, in the original hydrology analysis in the design report, was that the reported results were physically impossible. I have seen this too many times in my career – a consultant plugs some numbers into a computer model, and the model spits out numbers which are then plopped into a table. The input parameters are not made available for independent review. The output results are not reviewed to see whether they make sense, or are physically possible. There is no discussion in the document of the meaning of the results.

What I noticed is that the analysis showed that the stormwater velocities became slower with the increased intensity of the storm. The fastest stormwater flow was in the 1-year storm, and the slowest

velocity was in the 100 year storm. This, obviously, is impossible, and shows that the calculation was done wrong, and not caught by internal reviewers. The analysis was later revised, AFTER the permit was issued by MDE, and the revision has corrected this error. However, the fact that this document made it through internal review at the developer, through DPW approval and PE signatures, and through approval of the MDE permit with this easily-found error is alarming. The fact that residents had to point the calculation error out to the agencies should be embarrassing to everyone who participated in the development of this design.

Conclusion

Various Howard County departments have made the following environmental policy statements on their websites:

- HoCo By Design: Policy Statement EH-11 of the recent draft General Plan, "HoCo by Design", states that "The County should continue to provide ***leadership*** by incorporating environmentally sensitive site development and property management practices on county properties".
- Department of Recreation & Parks: The "Values" statement of the Department of Recreation & Parks, states "serve as ***model stewards*** of the environment by managing, protecting, and conserving our resources for a sustainable future."
- Office of Community Sustainability: The Home page of the website of OCS states "Howard County ***boasts*** the state's oldest Office of Sustainability . . .".
- Department of Planning and Zoning: The Home page of the website for DPZ states that "The Department of Planning and Zoning shapes the growth and future of Howard County by . . . protecting the County's natural environment."

These statements do not claim that the County follows environmental regulations. They claim that Howard County is a LEADER in environmental protection, serves as a MODEL for other agencies, and that they have been proactive to the extent that they have something to BOAST about.

This is all just words on websites. The real test is to see how the County actually does their projects, and the result is just the opposite. In my discussions with both County and CA personnel over the past 15 months, I have heard, over and over, that their projects comply with environmental regulations. As someone who has built an entire, successful career in environmental compliance and protection, I feel the need to shout from the rooftops:

"ENVIRONMENTAL COMPLIANCE IS NOT THE SAME AS ENVIRONMENTAL LEADERSHIP!!"

In fact, it is the OPPOSITE. Environmental compliance is following – that is why we call it "following" regulations. Leadership is something completely different – it is protecting environmental and natural resources even if there is no regulation requiring you to do so. It is protecting all trees to the extent possible, not just those over 12 inch dbh. It is the way responsible and competent developers and agencies do things in the 21st century. But there is no evidence that this news has reached the Howard County and CA staff who are inflicting these "stream restoration" projects on the community and our watersheds.

- I urge DPW to pause their stream restoration program for an adaptive management review of the results of their past projects, as well as the current state of the scientific literature. I request that they form a working group, which includes affected residents as fully-participating members, to consider alternative methods of erosion reduction and infrastructure protection that do not have substantial impacts on ecology or adjacent residents.
- I ask that the County consider implementing a program, similar to the Federal National Environmental Policy Act (NEPA), which requires that the adverse effects of construction projects be disclosed to all potentially affected residents. Through the Sewell's Orchard project, I learned that DPW has no standard practice or guidance for notifying or soliciting comments from potentially affected residents – it is left up to the individual project managers to decide whether they wish to do that and, in my case, the original project manager chose not to do any notifications. My understanding, from conversations a few weeks ago, is that this practice has not changed since the debacle at Sewell's Orchard.
- I also ask that the County establish policies that require aggressive micro-siting and other efforts to reduce tree removals to the absolute minimum needed to accomplish the goals of the project. The County must begin to value its existing trees as much as they value planting of new trees.

Thank you for allowing me to provide these comments. Unfortunately, I will not be available to attend the public meeting on the Plumtree project on September 28. However, these comments are about far more than that specific project – they about the entire way the County departments function when implementing construction projects.

Bob Dover

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Attachment 1
Summary of Qualifications Relevant to Surface Water Hydrology

Bob Dover
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Education
B.S., Geology, Beloit College, Spring 1983
M.S., Geology, University of North Carolina – Chapel Hill, Spring 1985
Specialized coursework in stream deposit geomorphology, Exxon Production Research Co., 1988-1989.
Additional PhD-level graduate study, Geology, University of North Carolina – Chapel Hill, Autumn 1985
Additional PhD-level graduate study, Hydrogeology and Environmental Engineering, Cornell University, Autumn 1990 to Spring 1991

Relevant coursework:

- Fluids in the Natural Environment (Surface Water Hydrology)
- Chemistry of Water and Wastewater
- Geohydrology
- Sedimentology
- Stratigraphy
- Fluid-Rock Interactions
- Aquatic Chemistry
- Clastic Sedimentology
- Advanced Clastic Sedimentology

Professional Certifications
Professional Geologist #1488, Arkansas (since 1989)
Professional Geologist #PG004768, Pennsylvania (since 2007, included sitting for American Society of Boards of Geologists exam)
Project Management Professional #326182 (2006 to 2019)

Employment
1986-1990, Senior Petroleum Geologist, Exxon Company USA
1991-2001, 2002-2006, Project Manager, Dynamac Corporation
2001-2002, CERCLA Program Manager, USDA Forest Service
2006-present, Senior Environmental Planner, AECOM

Experience on Similar Environmental Planning and Surface Water Hydrology Projects

- Experience in evaluating stormwater management systems for construction projects in:
  - Maryland
  - Pennsylvania
  - Virginia
  - West Virginia
  - Tennessee
  - Nevada
  - California
  - Illinois
  - Kansas
  - Texas
  - Alabama
  - New Jersey
  - New Mexico
  - Nova Scotia

- Managed the Environmental Department of Dynamac Corporation, including a staff of 15 ecologists, geologists, and civil and environmental engineers (1993 to 2000)
- More than 16 years of experience as Senior NEPA Project Manager at AECOM, managing multi-disciplinary staff (including stormwater and environmental engineering professionals) in developing Environmental Impact Statements (EISs) for natural resource and recreation management, forestry, solar power, nuclear power, pipeline, transmission, transportation, and other construction and development projects.
- Served as Subject Matter Expert in surface water hydrology and stormwater management for more than 20 EISs and Environmental Assessments (EAs) for large-scale construction and development projects.
- Played leading role in development of stormwater management standards for large-scale solar power plants in California for the Bureau of Land Management (2007 to 2009).
- Experienced in analysis of stream sediment morphology, including leading canoe field trips to study fluvial deposits.
- Experienced on four separate projects that involved analysis of the hydrologic effects of tree removal on groundwater and surface water flow.
- More than 20 years of experience working with federal agency NEPA staff and attorneys to comply with administrative requirements of NEPA, including development and analysis of project alternatives, incorporation of mitigation measures into project approval documentation, and meeting public engagement requirements.
- Served as onsite Stormwater and Environmental Controls Compliance Inspector for multiple construction projects (1997 to 2012).

Personal

- Columbia Association homeowner since 1995, including adjacent to Elkhorn Branch since 2018.
- Author of *Bridgespotting: A Guide to Bridges that Connect People, Places, and Times*, published by Sewell Pond Press (March, 2022), and *Bridgespotting Part 2: A Guide to Even More Bridges that Connect People, Places, and Times* (November, 2022).

Attachment 2

Analysis of the Impact of Trees on Stormwater Hydrology

Bob Dover

August 2023

Introduction

I have had substantial professional experience in surface water hydrology, including multiple projects in which I analyzed the hydrologic effects of either planting fast-growing trees, or of removing trees. There is an enormous body of literature on this subject – it is not complicated, nor is it controversial. Trees perform the following hydrologic functions:

- Trees directly remove stormwater from the watershed through evapotranspiration. Trees remove enormous quantities of groundwater, substantially lowering the elevation of the water table. Also, tree roots are very effective promoters of infiltration pathways. Operating together, these provide substantial storage for stormwater in the unsaturated zone, and active infiltration pathways for surface water to get to that storage. When trees are removed, the groundwater table in the immediate area immediately rises, a process known as "watering-up". This allows the unsaturated zone to become saturated during a storm much more quickly. It is well-established in logging areas that removal of trees immediately increases the frequency and intensity of surface water flooding.
- Watering up also has the effect of killing whatever trees have been left in place. Even if a tree removal project leaves some trees uncut, they will quickly die due to the modification of their hydrologic setting. This can be clearly seen at Longfellow, and at The Glade in Reston. Advocates of stream restoration like to proclaim that these projects do not "clearcut" forests. This depends on the definition of "clearcut". At both Longfellow and The Glade, a small number of mature trees were left uncut by the developer. In both cases, all of those leftover trees died anyway, and still stand there today as ghostly reminders of the mature forest that once thrived in both places.
- Trees also directly remove stormwater from the watershed before it reaches the ground, through evaporation. When it rains, the trunk, branches, and leaves get wet – a process known as canopy interception. Following the rain, much of this water evaporates without reaching the ground. This is a large amount of water. When trees are removed, this water that would have evaporated over time instead reaches the ground immediately, during the most intense part of the storm, and becomes stormwater.
- Much of the water from the branches and leaves that does drip and reach the ground does so in the hours or days following a storm. Although the water enters the watershed, it does so slowly, over a period of hours or days, and thus does not add to the immediacy of a flood during a storm. Removal of trees eliminates this attenuation effect of trees, thus adding to stormwater volumes at the very time that additional water is most destructive.
- The presence of tree trunks and fallen tree trunks, branches, and leaves all add to the roughness of the forest floor. This roughness is another strong attenuation effect on stormwater. It slows

the stormwater velocity, reducing its erosive effect. Removal of trees allows stormwater to flow freely, with nothing to hinder its velocity and erosive powers.

- The root structures of trees, as well as fallen trunks and branches, serve to stabilize soils in place and protect them from erosion. Removal of trees removes this stabilizing effect, exposing soils to increased erosion and downstream transport.
- Trees directly reduce nutrient concentrations, such as nitrogen, in groundwater and, by extension, in nearby surface water bodies that receive discharged groundwater.

In all cases, there are some important observations:

1) The effect is highest at the tree, and diminishes with distance from the tree. Therefore, removal of trees within close proximity of surface water bodies has a substantial ability to influence the amount of stormwater that enters the stream.
2) The effect is immediate when a tree is cut down. The hydrologic functions of the tree cease immediately, the groundwater level begins to rise immediately, and adverse effects on nearby streams can be seen to happen within a few weeks.
3) The effect is permanent, unless trees of similar size and evapotranspiration capacity take their place. Where mature trees are removed and attempts to re-establish the forest are made, the hydrologic system can take 10 to 20 years to recover.

Almost all of the discussion regarding stormwater management issues in urban watersheds focuses on the conversion of permeable land surface to impermeable, thus eliminating infiltration and increasing the volume and velocity of stormwater. This is true, but it is the highly visible part that is easy to understand and explain to people. Evaporation and evapotranspiration are invisible. You cannot stand by a tree and watch as it physically removes water from the watershed, as the groundwater table is lowered, and as the water is evaporated into the atmosphere. Nevertheless, this happens, in enormous quantities. By some estimates I have looked at, forests stands in Maryland evaporate more than 50% of the precipitation that falls on them (Sanford, Ward E., and Selnick, David L., 2012). When these trees are removed, this water raises groundwater levels, reducing water storage capacity during a storm. This excess water then becomes stormwater during rainstorms. ***Removal of trees directly, and immediately, increases the frequency and intensity of floods.***

The following paragraphs describe four projects involving the hydrologic impacts of trees with which I have been personally involved:

Morton Grove Remediation Site, Illinois

The Morton Grove facility was the site of contaminated groundwater and soils. Prior to my association with the site, the site owner, in coordination with the Illinois Environmental Protection Agency, had installed a phyto-remediation system to capture and treat groundwater. Phyto-remediation is a common remediation technique that uses trees to remove contaminated groundwater, reverse, the direction of groundwater flow, and metabolize organic contaminants.

My role on the project was to oversee quarterly groundwater monitoring events to verify the continuing efficacy of the system. The principal activity was to measures groundwater levels across the site to verify that the reversal of the groundwater flow direction forced by the planted trees was still in effect. It was this reversal of groundwater flow direction, accomplished entirely by the planting of trees, that stopped contaminated groundwater from flowing onto the adjacent property. In the two years that I was

associated with the project, there was never a situation in which the trees failed to keep the groundwater flow direction under control.

Townhouse Condominium Community, Central Maryland

I was on the Board of my condominium association when I owned a townhouse. Our community had a stormwater retention pond, close to two blocks of townhouses, in which there were two mature willow trees. During an inspection, a contractor noted that the trees were diseased and cut them down.

Even though they were diseased, the trees were still alive, and were still removing large amounts of groundwater. Within a period of weeks, residents at the two nearby townhouse blocks reported that their sump pumps were running full time, and that they had to purchase dehumidifiers to stop mold from growing in their basements.

The residents petitioned the Board to immediately replace the removed trees with mature willow trees. The Board approved the planting of two 12-foot willow trees, despite a very high cost. The trees established root systems very quickly, and the residents reported that their sump pumps stopped running within a couple months of the planting.

Application for Cold-Tolerant Eucalyptus Trees, Southeastern United States

A private developer filed an application with the USDA Agricultural Research Service (ARS) to approve the sale of their product, which was cold-tolerant eucalyptus trees, to lumber companies in the southeastern US. Eucalyptus trees are very fast-growing trees, and being able to establish them in the US would allow lumber companies to reduce the growing time before their re-planted trees could be harvested.

My role was to serve as the surface water hydrology expert on the Environmental Report filed with ARS as part of the application. There was a substantial amount of public opposition to the project, due to the well-documented effect of the fast-growing trees on groundwater levels while they were growing, and on flood intensity and frequency once they were harvested. My research showed that there was a large body of literature on these subjects from projects throughout the world. Both depression of groundwater levels during growth, and increase in flood intensity and frequency following harvesting, were well documented in hundreds of locations. In the face of these reports and the public opposition, the applicant withdrew the application before ARS could make a decision on approval.

Construction of Wind Farm, Keyser, West Virginia

I served as the lead Environmental Compliance Inspector for the construction of this wind farm in 2012. The project included the installation of 23 wind turbines along the crest of a ridge, requiring complete tree removal on 23 pads, each approximately two acres in size, as well as along the 2-mile-long road that connected the pads. The only activity in the affected area was tree removal – there was no paving, and no substantial soil compaction.

Immediately after the removal of the trees, the mountain effectively sprung leaks on its slopes. The water table, which had been in stable equilibrium between precipitation and evapotranspiration for millennia, immediately rose several feet once the evapotranspiration ceased. This caused the water table to find outlets through the fractured bedrock to the surface, creating springs and streams where none had previously existed. During rainstorms, these became overwhelmed, causing flooding of homes

on the slopes of the mountain. I left the project before I saw the final results, but I was present when one home, which was used as an office by the developer, was flooded as a result. I later heard that the developer ended up purchasing several of the homes, although I have no documentation of this.

Attachment 3

Stream Restoration Bibliography

Compiled and Annotated by Bob Dover

August 2023

Articles, Studies, and Reports Evaluating Results from Past Stream Restoration Projects

Beauchamp, Vanessa, Joel Moore, Patrick McMahon, Patrick Baltzer, Ryan A. Casey, Christopher J. Salice, Kyle Bucher, and Melinda Marsh. 2020. Effects of Stream Restoration by Legacy Sediment Removal and Floodplain Reconnection on Water Quality and Riparian Vegetation. Study funded by Chesapeake Bay Trust Award #13974. December 2020. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

> This report concludes that stream restorations did not have any impact on nitrogen concentrations. Preservation of high-quality forest areas, even if they have invaded previous floodplains, should be considered. The effects of loss of tree canopy should also be considered.

Budelis, Drew, Lauren McDonald, Steve Schreiner, and Donald E. Strebel. 2020. An Evaluation of Forest Impacts Compared To Benefits Associated with Stream Restoration. Study funded by Chesapeake Bay Trust Award #14833. February 2020. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

> This report concludes that:
>
> - There is no compelling evidence that the benefits of floodplain reconnection outweigh the impacts, and Maryland DNR stresses the need to minimize impacts to existing forests.
> - While the authors believe that floodplain habitat is of greater value than upland habitat, attempts to convert upland habitat to floodplain habitat are likely to not be successful, especially in areas where habitat is fragmented and has anthropogenic structure, such as Elkhorn Branch.
> - Reconnection of floodplains does not increase functional composition or diversity of plant communities.
> - Floodplain reconnection may increase presence of invasive species.
> - Floodplain reconnection will not affect soil nutrient content.

Center for Watershed Protection. 2021. The Self-Recovery of Stream Channel Stability in Urban Watersheds due to BMP Implementation. Study funded by Chesapeake Bay Trust. March 2021. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

> This report concludes that, in a study of a limited number of stream restoration sites, the total suspended sediment load increased after restoration.

Center for Watershed Protection. 2022. Maintaining Forests in Stream Corridor Restoration and Sharing Lessons Learned. Acquired by email from Greg Hoffman, Center for Watershed Protection, on 6/14/2023

This extensive study was intended to respond to the growing observations of massive tree removal and disturbance of riparian area during "stream restoration" projects. The purpose was to review past projects and identify ways to protect riparian buffers and minimize impacts on those buffers, especially healthy, mature trees. The report noted that "there are very few requirements that explicitly focus on protection of existing forests from impacts", meaning that the extent to which these projects remove trees is largely left to the developer.

Key Observations included:

- Some stream restoration sites are not severely degraded and therefore result in significant forest losses that could have been avoided with better site selection.
- Sites where the quality of the riparian community is poor (e.g., invasive species, poor habitat conditions) may be good candidates for stream restoration project design that incorporates native plantings and habitat improvements. The trade-off here is that short-term forest loss may be necessary to achieve longer-term habitat improvement goals.
- Certain stream restoration designs may include extensive removal of riparian vegetation or subsequent tree loss through increased groundwater elevations and/or extended inundation (e.g., floodplain reconnection projects) while others (e.g., legacy sediment removal) may not be intended to include a fully forested riparian area, but instead include a diverse mosaic of herbaceous plants, shrubs, and water-loving trees that represent pre-development site conditions. The specific project goals, objectives, and design approach therefore have an important bearing on how much forest loss results from the project.

Cohee, Gabe. 2023. Chesapeake and Atlantic Coastal Bays Trust. Email to Bob Dover regarding mass tree removal as part of stream restoration. June 12, 2023.

In response to a question about funding of stream restoration projects by the Chesapeake and Atlantic Coastal Bays Trust, Mr. Cohee responded that "As a fund source, we are very interested in protecting existing habitat and ecological functioning while supporting the restoration activities based on high levels of degradation. In response to my question about whether they would fund projects that involve up to 60 acres of tree removal, he responded "It is hard to say whether we'd support a project without further information and seeing an engineered design; however, it would be very detrimental to a proposal if this many acres of existing forest is being negatively impacted." Then, he discussed the evolving state of the science about stream removal projects. He said "There are many new, more surgical approaches that can protect existing trees while meeting project goals. For example, if the goal of the project is to actively reconnect the stream to the floodplain, some upland trees that exist now may die overtime as new, more riparian appropriate species take hold. This shift in the regime can happen overtime to protect habitat, stream temperature, etc. while promoting more appropriate ecological functioning."

Craig, Laura S., Margaret A. Palmer, David C. Richardson, Solange Filoso, Emily S Bernhardt, Brian P. Bledsoe, Martin W. Doyle, Peter M. Groffman, Brooke A. Hassett, Sujay S Kaubal, Paul M. Mayer, Sean M. Smith, and Peter R. Wilcock. 2008. Stream Restoration Strategies for Reducing River Nitrogen Loads. Frontiers in Ecology and the Environment. Vol.6 , Number 10, 529-538. Accessed at https://www.jstor.org/stable/20441018 on 5/7/2023.

> The Elkhorn Branch Prospectus claimed that this article supports the statement "stream restoration WILL improve water quality through the reduction of stream bank erosion and the downstream transport of associated pollutants, improve instream nutrient processing".
>
> The article does not support these claimed "benefits". The use of this article to claim reduction of nitrogen concentrations is moot, since the 2015 CA Watershed Quality Report did not identify nitrogen concentrations to be elevated. Instead, the article says that "stream restoration alone is not appropriate for compensatory mitigation and should be seen as complementary to land-based best management practices"

Ensign, Scott H., and Martin W. Doyle. 2005. In-channel transient storage and associated nutrient retention: Evidence from experimental manipulations. Limnology and Oceanography 50, p. 1740-51. Accessed at https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.files/fileID/13937 on 5/7/2023.

> The Elkhorn Branch Prospectus claimed that this article supports the statement "stream restoration WILL improve water quality through the reduction of stream bank erosion and the downstream transport of associated pollutants, improve instream nutrient processing".
>
> The article does not support these claimed "benefits". The use of this article to claim reduction of nitrogen concentrations is moot, since the 2015 CA Watershed Quality Report did not identify nitrogen concentrations to be elevated. The study was conducted in a completely different environment type, and concludes by saying that results could not be corroborated because results were affected by sediment disturbance.

Groffman, Peter M., Ann M. Dorsey, and Paul M. Mayer. 2005. N Processing within Geomorphic Structures in Urban Streams. Journal of the North American Benthological Society 24: 613-25. Accessed at https://www.jstor.org/stable/10.1899/04-026.1 on 5/7/2023.

> The Elkhorn Branch Prospectus claimed that this article supports the statement "stream restoration WILL improve water quality through the reduction of stream bank erosion and the downstream transport of associated pollutants, improve instream nutrient processing".

The article does not support these claimed "benefits". The use of this article to claim reduction of nitrogen concentrations is moot, since the 2015 CA Watershed Quality Report did not identify nitrogen concentrations to be elevated. Instead, the article states that "denitrifying structures are difficult to maintain in urban streams because of high storm flows and downstream displacement". Since this project will NOT control runoff, any in-stream structures are likely to be destroyed.

Hawley, Robert J., Kathryn Russell, and Taniguchi-Quan, Kristine. 2022. Restoring Geomorphic Integrity in Urban Streams via Mechanistically-Based Storm Water Management: Minimizing Excess Sediment Transport Capacity. Urban Ecosystems. Vol. 25, p. 1247-1264. Accessed at https://link.springer.com/article/10.1007/s11252-022-01221-y on 5/8/2023.

> This article presented case studies showing that, to reach a goal of geomorphic stability in urban watersheds, stormwater control measures to reduce erosion potential must be implemented.

Hilderbrand, Robert H. 2020. Determining Realistic Ecological Expectations in Urban Stream Restorations. Study funded by Chesapeake Bay Trust Award #15823. July 2020. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

> The study of more than 20 stream restoration projects documented that biological uplift goals were not met.

Hilderbrand, Robert H., Joseph Acord, Timothy Nuttle, and Ray Ewing. Undated, except after 2017. Quantifying the ecological uplift and effectiveness of differing stream restoration approaches in Maryland. Study funded by Chesapeake Bay Trust Award #13141. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

> There is a large amount of information to unpack in this report. In a study of stream restorations on 40 urban streams in the Baltimore/Washington area, this study found no evidence of ecological uplift. The report went on to conclude that the practitioners of stream restoration are aware of this, but the public and regulators are not. With respect to the Elkhorn Branch project, this supports my claims that the contractor is deliberately not disclosing any studies or articles that provide any negative observations, because it is damaging to their business model.

Howard County DPW NPDES Permit MD0068322 Annual Report for Fiscal Year 2021.

> The annual update of results from watershed monitoring includes several watersheds in which “stream restorations” had occurred in prior years. The results are as follows:
>
> - Wilde Lake – the report discusses the erosion and sedimentation status of the upstream reach (the location of the Longfellow “stream restoration” project) and the downstream reach. As of 2021, the “upstream reaches are not experiencing the same level of erosion as the downstream reach and have remained relatively stable over 2017-2021 period”. Given this observation, it is not clear why a “stream restoration” project was implemented in the upper reach in 2020-21. The report goes on to state that a “newly constructed stream restoration project in the upstream reach should provide increased stability”. Since the upper reach was not exhibiting any instability, it is not clear how such a destructive project in that area, removing acres of trees, can be expected to provide “increased stability”.
> - Red Hill Branch – This area is downstream of the Bramhope Lane stream restoration project done in 2011. The monitoring in 2021 found no improvement in water quality. The biological monitoring results “have not shown any significant

improvement after restoration". The results did show a reduction in erosion, but noted that flood damage to an upstream debris dam had contributed sediment into the survey area.

- Dorsey Hall – The post-restoration biological and physical monitoring results showed that "habitat results have been similar throughout the post-restoration period", with the sites falling into the lowest "severely degraded" category. The physical habitat results show that both monitored sites continue to be severely impacted, "with no evidence yet of ecological uplift after restoration".

Howard County DPW NPDES Permit MD0068322 Annual Report for Fiscal Year 2022.

The annual update of results from watershed monitoring includes several watersheds in which "stream restorations" had occurred in prior years. The results are as follows:

- Wilde Lake – The water quality results continued to show elevated total suspended solids concentrations. With respect to biological monitoring, the report states "Overall, the stream system in the Wilde Lake watershed continues to exhibit evidence of the urban stressors affecting it and has not demonstrated measured improvement in either habitat quality or ecological stream health over the seventeen years of monitoring.".

  Most concerning is the geomorphic assessment, conducted long after the Longfellow project was completed. The text states "The main goal of the monitoring is to assess the temporal variability of the geomorphic stability of the stream channels upstream of the lakes as they react to restoration activities. Overall, implementation of projects in the watershed do not appear to have significantly improved the physical habitat in the tributary streams."

- Red Hill Branch – This area is downstream of the Bramhope Lane stream restoration project done in 2011. The monitoring in 2021 found no improvement in water quality. The biological monitoring results show that "post-restoration monitoring results indicate a subwatershed in an overall degraded ecological condition, with little change from the first two years of pre-restoration monitoring." In fact, the BIBI scores in 2022 were "slightly worse results than during 2021". Habitat assessments in 2022 were "nearly identical to 2021 and 2020 results", with all sites rated as "degraded". The text states "The biological community and habitat continue to fluctuate slightly from year-to-year, with 2022 results a slight decrease from 2021, but remain in a degraded condition and have not shown any significant improvement after restoration. The report did note that there had been reductions in erosion.

- Dorsey Hall – The post-restoration biological and physical monitoring results were the same as reported for 2021. The report showed that "habitat results have been similar throughout the post-restoration period", with the sites falling into the lowest "severely degraded" category. The physical habitat results show that both monitored sites continue to be severely impacted, "with no evidence yet of ecological uplift after restoration".

Kaushal, Sujay S., Kelsey L. Wood, Phillippe G. Vidon, and Joseph G. Gallela. 2021. Tree Trade-offs in Stream Restoration Projects: Impact on Riparian Groundwater Quality. Study funded by Chesapeake Bay Trust. March 2021. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

This report concludes that tree removal during stream restoration resulted in long-term degradation of groundwater quality. Shallow groundwater will eventually discharge as surface water runoff, carrying these pollutants into streams and lakes.

Mayer, Paul M., Michael J. Pennino, Tammy A Newcomer-Johnson, and Sujay S. Kaushal. 2022. Long-Term Assessment of Floodplain Reconnection as a Stream Restoration Approach for Managing Nitrogen in Ground and Surface Waters. Urban Ecosystems Vol. 25, p. 879-907. Accessed at https://link.springer.com/article/10.1007/s11252-021-01199-z on 5/8/23.

This article states that stream restoration can be an important component of holistic watershed management "if stream restoration and floodplain reconnection can be done in a manner to resist the erosive effects of large storm events." Since this project will NOT control runoff, the stream will still be subject to the erosive effects of large storm events.

Myers, Doug. 2023. Chesapeake Bay Foundation. Testimony to the CA Board Meeting on January 12, 2023. Video available at https://www.youtube.com/watch?v=8p8M7ebpl9o, beginning at time stamp 1:50:00.

Mr. Myers repeatedly stressed that it is useless to attempt stream restoration if you do not first address the source of the problem, which is increased runoff. This project will not control runoff. At the end of Mr. Myers presentation, he was asked if, in his expert opinion, it would be better to do the project and see what happens, or if it would be better to do nothing. Mr. Myers stated that the evolving science says that it would be better to do nothing, and let the stream heal itself.

Palmer, Margaret A., Solange Filoso, and Rosemary M. Fanelli. 2013. From Ecosystems to Ecosystem Services: Stream Restoration as Ecological Engineering. Ecological Engineering, Vol. 65, Pgs. 62-70. Accessed at https://pubag.nal.usda.gov/catalog/5378506 on 4/30/2023.

This article concluded that urban stream restoration does not result in net annual benefits in reduction of nitrogen. With respect to retention of sediment, the article concludes that this does occur initially, it will decrease over time. In addition, the article documented that loss or damage of riparian forests and pulses of sediment released during construction may offset other project benefits. Therefore, the article concluded that use of approaches that require substantial ecosystem modification to enhance a limited number of biophysical processes should be limited to the most degraded systems, and then only after less invasive approaches, such as upland reforestation, reduced lawn fertilization, and better stormwater management at the source of runoff generation have been exhausted.

Palmer, Margaret A., K.L. Hondula, and Benjamin J. Koch. 2014. Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals. Annual Review of Ecology, Evolution, and Systematics 45:247-69. Accessed at https://www.annualreviews.org/doi/10.1146/annurev-ecolsys-120213-091935 on 5/7/2023.

> This is probably the key article that documents failures of stream restoration projects to meet almost every metric of success. The study involved an assessment of reported monitoring results in 644 streams. The article documents that the projects usually improve habitat, substrate, and channel form, but this is because these measures have recently been physically manipulated as part of the restoration. These are not measures of the long-term condition of the stream, and others researchers have documented that these manipulations do not last if runoff is not controlled. With respect to stability, the study found that less than half the projects showed improvements in channel stability compared to pre-restoration conditions, even though the projects had used rip-rap and boulders to try to stabilize the streams. Improvements in water quality metrics were only met 7% of time. The projects did improve indicators of hydrologic or biogeochemical processes, but these were not accompanied by any increased aquatic biodiversity or recovery of sensitive species. This was a common finding in other articles – that, although the metrics showed improvements in habitat, channel form, substrate, and velocity, these improvements were not accompanied by improvements in biodiversity. There was also no improvement in taxa richness, except for one area where the increase in taxa was due entirely to the addition of some taxa that are tolerant or urban stream conditions.

Palmer, Margaret. 2023. University of Maryland. Email to Bob Dover regarding NCD Stream Restoration Methodology. May 7, 2023.

> Because Dr. Palmer's article was developed in 2014, Bob Dover contacted her by email in May, 2023, to notify her that he intended to use the article to opposes a proposed project, and to determine whether the statements and conclusions made in the article still reflect her current opinions about the effectiveness of stream restoration. She responded "Yes, they absolutely do."

Simon, A., M. Doyle, M. Kondolf, F.D. Shields, B Rhoads, G. Grant, F. Fitzpatrick, K. Juracek, M. McPhillips, and J. MacBroom. 2005. How Well do the Rosgen Classification and Associated "Natural Channel Design" Methods Integrate and Quantify Fluvial Processes and Channel Response? Abstract from conference paper. DOI publication 10.1061/40792(173)584. Accessed at https://www.usgs.gov/publications/how-well-do-rosgen-classification-and-associated-natural-channel-design-methods on 5/10/23.

> This abstract from a conference presentation challenged the idea, of David Rosgen, that classification of streams and "natural channel design" are equivalent or superior to the science of fluvial geomorphology. The authors lamented that "para-professional training" had empowered individuals and groups with limited backgrounds to re-engineer entire stream systems. The abstract concluded that, while the system makes it easy to communicate between practitioners, but that does not justify its use for engineering design or for predicting river behavior, and its use for designing mitigation was beyond its technical scope.

Simon, A., M. Doyle, M. Kondolf, F.D. Shields Jr., B. Rhoads, and M. McPhillips. 2007. Critical Evaluation of How the Rosgen Classification and Associated ‘‘Natural Channel Design’’ Methods Fail to Integrate and Quantify Fluvial Processes and Channel Response. Journal of the American Water Resources Association (JAWRA). Vol. 43, Number 5, Pg. 1117-1131. Accessed at https://naldc.nal.usda.gov/download/7764/PDF on 5/10/23.

> The purpose of the article was to “present a critical review, highlight inconsistencies, and identify technical problems of Rosgen’s natural channel design approach to stream restoration.” The text states that Rosgen’s training business has “empowered individuals and groups that may have limited backgrounds in stream and watershed sciences to engineers modifications of streams whose scientific underpinning is based on 50-year-old technology never intended for engineering design.”

Southerland, Mark, Chris Swan, and Andrea Fortman. 2017. Meta-Analysis of Biological Monitoring Data to Determine the Limits on Biological Uplift from Stream Restoration Imposed by the Proximity of Source Populations. Study funded by Chesapeake Bay Trust. September 2017. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

> This report was largely inconclusive, but did conclude by saying that expectations for biological uplift from stream restorations should be tempered. The report was mostly setting the stage so that the chief investigator could ask for more funding for more studies.

Thompson, Tess, and Eric Smith. 2021. Improving the Success of Stream Restoration Practices – Revised and Expanded. Study funded by Chesapeake Bay Trust Award #13970. June 2021. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

> This report concludes:
>
> - There are few studies that support the supposed benefits of stream restoration.
> - Attempting these projects in urban watersheds will limit the potential for biological improvements.
> - In-stream improvements to reduce channel erosion, sedimentation, and nutrient reduction will not be effective if excessive runoff is not controlled.
> - Efforts to limit channel migration are opposed to the normal functions of streams, and will therefore limit ecosystem health.
> - The practice of stream restoration has far outpaced the science. Practitioners base their efforts on their own personal experience, which is not written and not made available for study. Where they have been made available, they are non-quantitative and anecdotal.

Welty, Claire, Andrew J. Miller, and Jonathan M. Duncan. 2021. Quantifying the Cumulative Effects of Stream Restoration and Environmental Site Design on Nitrate Loads in Nested Urban Watersheds Using

a High-Frequency Sensor Network. Study funded by Chesapeake Bay Trust Award #15828. 2021. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

This report concludes that stream restorations did not provide any reductions in nitrate loads.

Wood, Kelsey L., Sujay Kaushal, Phillippe G. Vidon, Paul M. Mayer, and Joseph G. Galelle. 2022. Tree Trade-Offs in Stream Restoration: Impacts on Riparian Groundwater Quality. Urban Ecosystems. Abstract accessed at https://cfpub.epa.gov/si/si_public_record_Report.cfm?Lab=CPHEA&dirEntryId=355730 on 5/8/2023.

The article states that “riparian tree removal can lead to significant groundwater quality impacts”, and that “where possible mature trees and soil profiles should be conserved”.

Annotated Bibliography on Urban Stormwater, Forestry, and Effects of Tree Removal on Hydrology

Berland, Adam, Sheri A. Shiflett, William D. Shuster, Ahjond S. Garmestani, Haynes C. Goddard, Dustin L. Herrmann, and Matthew E. Hopton. 2017. The Role of Trees in Urban Stormwater Management. Landscape and Urban Planning, Vol. 162, Pg. 167-177. Accessed at www.sciencedirect.com/science/article/abs/pii/S0169204617300464 on 5/23/2023.

> Technical article from Berland and others (2017) stating that "a narrow focus on infiltration overlooks other losses from the hydrologic cycle, and we propose that arborculture – the cultivation of trees and other woody plants – deserves additional consideration as a stormwater control measure. Trees interact with the urban hydrologic cycle by intercepting incoming precipitation, removing water from the soil via evapotranspiration, enhancing infiltration, and bolstering the performance of other green infrastructure technologies."

Cappiella, K., T. Schueler, and T. Wright. 2005. Urban Watershed Forestry Manual: Part 1. Accessed at https://urbanforestrysouth.org/resources/library/ttresources/urban-watershed-forestry-manual-part-I on 5/27/2023.

> This is a manual to be used by USDA Forest Service staff in increasing forest cover in urban environments. In a preliminary discussion of urban forestry, the documents discusses the watershed benefits of tree cover, including reducing stormwater runoff, improving air quality, reducing stream channel erosion, providing habitat for terrestrial and aquatic wildlife, improving soil and water quality, and reducing summer air and water temperatures.

Center for Watershed Protection. 2017. Making Urban Trees Count. Accessed at https://cwp.org/making-urban-trees-count/ on 4/20/23.

> This web-based article included a review of 159 publications to understand the effect of urban trees on reducing runoff, nutrients, and sediment. Then, they used the observations to develop a water balance model and recommendations for tree planting credits that could be used for planting of trees in an urban environment.
>
> This article demonstrates that many organizations involved in assessing and restoring urban watershed are focused on the benefits of planting upland trees, instead of undertaking projects that directly remove upland trees.

Center for Watershed Protection. 2022. Using a Novel Research Framework to Assess Water Quality Impacts of Urban Trees. Study funded by Chesapeake Bay Trust. July 2022. Accessed at https://cbtrust.org/grants/restoration-research/ on 6/10/23.

> The study cited another source, in which an expert panel on the Chesapeake Bay recommended BMP credits be offered for planting to increase tree canopies, and for conservation and maintenance of tree canopies, because of the positive effects of the tree canopies in reducing runoff. This observation is based ONLY on the evaporation from the tree canopies – it does not include evapotranspiration by the trees, which other studies have shown to have an even greater effect on runoff.

North Street Neighborhood Association. 2009. Watering-Up: Studies of Groundwater Rising After Trees Cut. Accessed at https://www.northassoc.org/2009/03/09/watering-up-studies-of-groundwater-rising-after-trees-cut/ on June 3, 2023.

This is a compilation of articles that discuss the phenomenon and impacts of "watering-up", which is the increase in the elevation of the water table and consequent increase in runoff after trees are removed.

Sanford, Ward E., and David L. Selnick. 2012. Estimation of Evapotranspiration Across the Conterminous United States Using a Regression with Climate and Land-Cover Data. Journal of the American Water Resources Association. Vol. 49, Issue 1. Accessed at https://onlinelibrary.wiley.com/doi/full/10.1111/jawr.12010 on 5/7/2023.

This is a technical article on the evapotranspiration functions of trees. See Figure 13, which shows that forests in central Maryland are estimated to remove more than 50% of the total rainfall from the watershed through evapotranspiration.

US Environmental Protection Agency. 2023. Soak up the Rain: Trees Help Reduce Runoff. Accessed at https://www.epa.gov/soakuptherain on 4/20/23.

This is an EPA program designed to educate the public about the hydrologic effects of trees. It provides links to a large number of resources, including technical articles and state government-based programs, related to the removal of water from the hydrologic system through tree canopy evaporation and evapotranspiration.

Respass, Charity

From: roger davis <rdavis11@comcast.net>
Sent: Monday, October 16, 2023 6:45 PM
To: CouncilMail
Subject: CB 40

Dear Council Members,

My name is Roger Davis, I live at 9316 Rock Meadow Drive in Ellicott City. Thanks to Liz Walsh for sponsoring this Bill. I have been fighting the Plumtree Branch Stream Restoration for two years now. We have a website saveplumtreebranch.org which I encourage you to visit. It has a study by Margaret Palmer at the University of Maryland which is the only study you need to read to be convinced that all stream restorations are a bad idea. We are here tonight because of the Clean Water Act passed in 1972. I was a teen at the time and we lived in New York. I remember hearing "Lake Erie is dead" and being shocked to learn that something so big had no fish. I was fortunate to grow up a couple of blocks from the Long Island Sound but the beaches were often closed after thunderstorms because we had combined sewer systems and the wastewater treatment plants couldn't treat all the stormwater. My family loved clams but we didn't dare eat the ones from our beaches. We also knew you could't eat fish from the hudson river because GE and other factories had polluted the river. So I have grown up keenly aware of governments failure to protect the environment from industry and development. My family also belonged to a hunting and fishing club in the Poconos so I know what a healthy trout stream looks like. I have seen many stream restorations and I know they will never support trout. I have never seen algae in the shady streams of the Poconos, whereas most post restoration streams are choked with algae because of the removal of the tree canopy. The fisherman in this club were mostly fly fishers who had a great appreciation of the food web and the effect of water temperature on fish behavior. Stream restorations totally annihilate the food web and make streams warmer so any pretense of actual restoration is just a lie. There is no science behind stream restorations. There is plenty of engineering and there are plenty of models but there are no large scale scientific studies that support stream restorations. The EPA's own Inspector general criticised them for claiming progress in the Bay based on models rather than data. The EPA, the Chesapeake Bay Program, the Maryland Department of the Environment, the Army Corps of Engineers, and the Howard County Government all support stream restorations, and they are all wrong. If I understand what is going on here tonight I am guessing most of you will vote against this bill tonight. My goal tonight is to get you to examine your reasons for your vote. Have you taken others word for what is the right thing to do tonight? Have you read the study by Margaret Palmer? Even the most cursory search of "critcisms of stream restorations" will bring up her name. Have you ever seen a before, during and after of an actual stream restoration? Would you go up to the homeowners surrounding the Ashbrook Road Stream Restoration in Mt. Hebron whose homes probably lost thousands in value when the woods in there back yards was completely removed and say you supported and funded that project even though there is no evidence it helped the Bay? I was at the County meeting at Miller Library for that project and they didn't even mention tree removal until I spoke up at the end of the meeting and said "Would you please tell these people how many trees you are going to remove?" I ask you to consider the possibility that stream restorations are wrong and need to be stopped. How would that happen? Would it be small groups of tree huggers from all around the country writing their elected officials in Washington and getting them to change the EPA?

Would it be officials at the Chesapeake Bay Program who have staked their careers and reputations on stream restorations? Would it be the Maryland Department of the Environment who in 2018 at the request of the Maryland Association of Counties allowed even more credit for stream restorations? There are many ways to get stormwater mitigation credit. We are not here because of good science. We are here because of developers, contractors, bureaucrats, and politicians making poor selfish decisions. The plan has always been to leave the decision making to the local governments because they know best where to spend the money. Our Stormwater Management people don't even pretend to do any cost benefit analysis of doing a stream restoration in a rich ecosystem like the Plumtree Branch versus a farm with no trees. The Plumtree Branch has 85 different documented species of birds. We have had bald eagle, wild turkeys, owls and beaver seen in the past year. Many years ago we had beaver in the stream until they made the mistake of chewing down a tree on Columbia Road in Dorsey Hall. The County or the Columbia Association killed them. They are finally back and now you are going to perform a stream restoration on their home. Have any of you seen an eagle, or turkey, or owl, or beaver in the wild? The Bay is not getting better. Your decision tonight will have a direct impact on the bay. Please do not look around for an expert. This is a political decision. The science is out there. The interest groups are out there, the question to ask is what is their interest?

Sincerely,
Roger Davis
410-627-6033

Respass, Charity

From: Ken Bawer <kbawer@msn.com>
Sent: Monday, October 16, 2023 1:06 PM
To: CouncilMail; Walsh, Elizabeth; Jones, Opel; Rigby, Christiana; Jung, Deb; Yungmann, David
Subject: FOR Bill No. 40-2023

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Councilmembers:

I urge you to vote FOR Bill No. 40-2023 which would remove certain exemptions for stream restoration projects in the Forest Conservation Act.

County Executive Ball has said, ""By planting a tree, we are improving our living space by reducing . . . . stormwater
runoff and flooding." Stream restorations which cut thousands of trees should not be exempted from the Forest Conservation Act.

Thank you for your consideration,

Kenneth Bawer

Respass, Charity

From: Robert Dover <bobatwaterbury@aol.com>
Sent: Tuesday, October 17, 2023 10:36 AM
To: CouncilMail
Subject: Testimony and comments in support of CB-40
Attachments: Dover Comments on CB40_Forest Conservation Act Amendment.pdf; Dover Comments on Plumtree Branch Stream Restoration_September 27 2023.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Council members - Thank you for giving me the opportunity to speak last night in support of Council Bill 40.

I attach two documents here:

1) A written copy of the comments I made last night; and
2) The attachments that I passed out last night, which are the comments I submitted to DPW regarding the Plumtree Branch stream restoration, and more generally on the DPW and CA stream restoration programs and policies favoring extensive tree removal.

The conversation around the pros and cons of stream restoration in Howard County the past few years has been dominated by the companies that make profits by doing stream restoration projects. In the past few months, I have been trying to offer the perspective of the scientific community, as well as that of the affected residents. As you consider CB-40 in the coming weeks, I would be happy to meet individually with you or your Staff, or to provide more detailed testimony at your upcoming work session, to show that there are legitimate, science-based concerns, and alternatives to the extremely destructive methods used for these projects.

Thank you.

Bob Dover
6354 Tamar Drive
Columbia, MD 21045
bobatwaterbury@aol.com
410-740-6647

Respass, Charity

From: Tom Johnson <thomas_k_johnson@yahoo.com>
Sent: Tuesday, October 31, 2023 5:43 PM
To: CouncilMail
Subject: Fw: Please stop "stream restoration" behind Dunloggin Middle School

Dear County Council People:

I am writing to you today to ask that you please take whatever action you can to stop the "stream restoration" project behind Dunloggin Middle School.

I attended a public hearing on this subject this past month, and was deeply concerned with what I learned.

As far as I can tell, the planned project is a needless waste of precious financial resources, will irreversibly damage local wildlife habitat, and do nothing to reduce stream erosion or protect the bay.

In addition, I learned at the meeting last week that the project was not competitively bid. So, even if "stream restoration" was needed, it is not clear that the contractor selected to do the work is the best qualified or the best price.

I believe this project should be halted immediately, and thoroughly reviewed to determine if it is necessary at all, and if it is necessary exactly what work is to be done, by whom, and at what cost.

And, most importantly, there should be disclosure to and more input from the local community.

Thank you for your time and consideration on this matter.

-Tom Johnson

Respass, Charity

From: Dara Baker <dabaker.research@gmail.com>
Sent: Wednesday, November 1, 2023 10:44 PM
To: Ball, Calvin; Richmond, Mark; CouncilMail
Subject: Opposition to Dunloggin/Plumtree project as currently designed

Follow Up Flag: Follow up
Flag Status: Flagged

Thank you all for the extended opportunity for the community to learn about and comment on another project in Howard County. As a new resident of Columbia (I moved here in 2021), I have spent nearly all my residency learning about -- and becoming increasingly concerned by -- the county's flippant approach to canopy removal and habitat threats in planned stream and pond projects.

The nightmare of a project "completed" by Ecotone in Longfellow has created a growing movement in Howard County based on the need to reevaluate vendor selection, project planning, protection of existing resources, and respect for residents. Ecotone turned Longfellow into an effective clearcut that reminded me of WWI Battle of the Bulge.

My friends, neighbors and colleagues, and fellow members of Protect Our Streams have spent our time and energy educating our communities about the true costs of these projects -- and the complete lack of cost - benefit analysis conducted by the county on project impact on residents' current and future investments in Howard County. I moved here because of the trees, because of the streams, because of the community feel and the quiet you can live in while surrounded by amazing amenities. Maybe it's because I'm trained as an historian, but I know if the trees are removed as described in the Ecotone Plumtree project plan -- I, and likely all of us, and our children, will be dead before trees like the ones being threatened would ever exist again.

The invasive process of stream engineering involves in-stream construction using heavy equipment, removal of soil to be replaced by foreign riprap and soils, pose direct threats to threatened and endangered species (flora and fauna), open these spaces to increased threats from invasive species, and threaten those trees left behind. The removal of tree cover actually increases warming of the stream and the community, completely counter to any efforts for environmental improvement. It should really be called stream or ecosystem replacement, there is no restoration involved at all. In-

stream construction projects do nothing to improve the stream and will likely damage the best tool Howard County has for combatting storm water issues. What should be clear now: an in-stream project will do NOTHING to improve or affect the issues affecting Howard County's lakes and streams. A decade of these projects and Chesapeake Bay has a rating of D+. The Chesapeake Bay Foundation opposes these projects, so does the Patuxent Riverkeeper. Who supports them? What, then, is the rationale behind a massive destructive process that will make no difference to the stream's health and will likely exacerbate and intensify the effects of high-quantity rain events?

Will this project cause a change in the floodplain? The proposal clearly states that Ecotone expects to raise the water table (p. 14). What does the local floodplain administrator have to say and has their opinion about the project's effect on the area's floodplain identification been received and shared with adjacent homeowners or the school? Will the project vendor -- or Howard County -- be paying and providing backflow preventers or paying for flood insurance for all affected homeowners if the floodplain is affected? What about funds for a potential blowout event? Maryland stream restorations have experienced numerous incredibly expensive flooding and blowout events in the first 1-7 years after construction. The suggested stream leveling, stream raising, and stream shifts that would be required for this project will increase the likelihood that the project will suffer from a failure. Ecotone's project in Longfellow has already cost Columbia residents thousands over the initial expected amount because of problems after large rainfalls and the Lower Booze Creek blowout in Montgomery County cost $3.6 million to repair.

Howard County should be focused on working to increase storm water management projects, decrease mowing and increase rain absorbing planting, shift to permeable surfaces, and support existing impossible to replace environments. We need to invest in permeable pavement and ensure that all development and new construction (or renovations) take into consideration stormwater needs.

As we have seen and heard for the Sewell's Orchard and Centennial Lake projects, the Howard County community strongly speaks for the trees, and for more limited impacts that don't require residents to stay home and take their lives in their hands interrupting construction to ensure that crews follow agreed to plans. It is also clear that Howard County has the capacity to rethink these projects, to follow more up to date best practices, to limit the limit of disturbance. And, Howard County has an obligation to find the best vendors who have the best outcomes, that understand environmental planning, analysis and research. That is not Ecotone.

The community voice is making itself heard: this project should be stopped. A new, less invasive, less destructive solution should be developed, proposed, and openly provided to the community in a way the community can understand -- without the marketing and sales pitches -- and with a clear eyed view to the chance of success and the possible downsides so we all know what to expect and when. Any project should be as contained as possible, should focus on protecting existing ecosystems and mature trees, and should ensure targeted, surgical repairs that minimize negative impacts. It should not be the job of regular residents to educate one another alone -- the county should take the honest responsibility to talk to, communicate with, and provide expertise -- not rosy glasses, empty assurances, and sales pitches from vendors. No one should ever wake up to a surprise bulldozer in their yard (part of WSSI's own advertising included residents stating their horror to find heavy equipment they didn't expect right outside their doors).

And we should be able to trust the long-term stewardship of our community assets -- especially the investment we have all made in our trees, green spaces, shared spaces, and our streams -- with each of you. Over 2000 people have signed petitions against these projects as designed -- Lake Elkhorn, Centennial Lake, Dunloggin/Plumtree, and Sewell's Orchard. As they say: the people have spoken.

Sincerely,

Dara A. Baker
Resident, Long Reach, Howard County
Protect Our Streams

Respass, Charity

From: S VanWey <svanwey444@gmail.com>
Sent: Wednesday, November 1, 2023 2:46 PM
To: CouncilMail
Subject: Support for CB40-2023

Follow Up Flag: Follow up
Flag Status: Flagged

I support CB40-2023 because I am against removal of trees and mature habitats around stream restorative projects. Attempting to restore one environment to destroy or harm two others is not a good, sound policy decision.

Sincerely,

Suzanne VanWey

Respass, Charity

From: Gina Palladino <ginasilvertree@gmail.com>
Sent: Friday, November 3, 2023 8:09 PM
To: CouncilMail
Subject: Support for Bill CB 40-2023

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Councilwoman Walsh,

I support Bill CB 40-2023.

Thank you for your continued efforts to protect nature in Howard County.

Warmly,
Gina Palladino
3626 Ligon Rd
Ellicott City, MD 21042

240-888-7451

Respass, Charity

From: Dara Baker <dabaker.research@gmail.com>
Sent: Monday, November 6, 2023 3:22 PM
To: CouncilMail; Ball, Calvin; Jones, Opel
Subject: Vote in favor of Council Bill 40 (2023)

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Councilman Jones and fellow Councilmembers,

I am writing to encourage you to vote FOR Howard County Council Bill 40 that would close a terrifying loophole that has allowed contractors to treat Howard County's resources -- our people, our trees, and our open spaces -- with disregard.

I am a pretty new Howard County resident, having purchased my first home in Long Reach in 2021. Since then, I have found myself having to fight, often with just a few neighbors and our voices, against nearly wanton destruction of the trees and streams and the communities' way of life, which is why I chose Long Reach in the first place. While many Council members have shown their growing interest in ensuring a balance between keeping what makes Long Reach and Howard County special -- our mature canopy cover, green spaces, and shared interests in protecting homes against climate damage including heat and floods, I have yet to see the same goals from your office or campaign. It matters to me, to the nearly 300 people who have signed the petition in favor of CB-40, the 550 people who signed to rethink the Dunloggin and Plumtree projects, the 1000s of people who signed to stop Lake Elkhorn and Centennial Lake projects that our representatives respect the residents.

We want careful, well thought out, minimally invasive, best practices projects. We want to ensure that any contractors hired by Howard County for any approved project be held to the highest standards -- that unlike a recent incident at Sewell's Orchard Pond -- that residents don't have to risk their life against construction equipment to make sure that companies don't just cut down trees because it's easier. Oops a 75 year old tree came down, because it's in the Limit of Disturbance is NOT a sufficient reason and should be punishable.

Howard County needs to require all projects that use heavy equipment, including so called "restorations," to follow forest conservation. These companies should be asking you what they can do to protect these areas. Since they are not, it is up to us, the voters, to remind you to support us.

Vote yes on CB-40.

Thank you.

Dara Baker
9005 Queen Maria Court
King Charles Commons, Long Reach

Respass, Charity

From: Susan Bannister <suebirch@earthlink.net>
Sent: Monday, November 6, 2023 2:11 PM
To: Jones, Opel; CouncilMail
Cc: Ball, Calvin
Subject: Vote FOR Council Bill 40 tonight!

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Councilmember Jones,

As your neighbor and constituent in Long Reach, I am one of the reasons you hold your office, as I voted for you. This is only the second time I have contacted you regarding an issue of great importance to your community and constituents. I hope you are more responsive this time, and that you will vote FOR CB-40 tonight.

The issue of tree removal in our community is a grave one, and becoming increasingly serious each year. CB-40 will remove an exemption to the Forest Conservation Act. Voting FOR this bill will provide more protection of currently forested stream buffers that are at high risk of destruction from the processes involved in stream restorations (which themselves are of questionable value to our suburban and urbanized environments). Please vote FOR CB-40.

My previous contact with you was regarding major concerns about the Lake Elkhorn Project, a stream engineering project, also known as stream restoration. I was very disappointed in your pro forma response, which left me thinking that you had little interest in being involved or informed regarding this issue, despite its potentially huge impact on our community. Fortunately, many others in the community were interested and the project was stopped. The Facebook page for Protect Our Streams Columbia has a wealth of information on the science and societal reasons why this project, and others like it, are harmful to our communities.

I, and many others in the community, will be watching how our council representatives vote tonight. This is an issue of such great importance to our community and its future, that my support in future elections will depend on this vote. I hope you will support this bill and inform yourself about the critical issues at play for our immediate and future environment, throughout our County. Support the community that has supported you - Vote FOR CB-40.

Thanks, and Best Regards,

Susan Birch Bannister
5418 High Tor Hill
Columbia, MD 21045
410-997-0982

Respass, Charity

From: Robert Dover <bobatwaterbury@aol.com>
Sent: Tuesday, November 7, 2023 12:20 PM
To: CouncilMail
Cc: sbmuzicmts@gmail.com
Subject: CB-40 - offer to provide more information on impacts of stream restorations

Follow Up Flag: Follow up
Flag Status: Flagged

Councilwoman Rigby:

Thanks for taking a few moments last night to tell me how you are approaching CB-40. I appreciate that you have read my own comments on the matter, and have gone back to DPW to get an understanding of the effect of the bill. You mentioned that one of the things you are planning is a stream walk, I assume with DPW and/or one of the restoration companies.

I have already participated in a similar situation with respect to the Elkhorn Branch project. The contractor there had planned to take the CA Board on a stream walk to show off their "model" project in Reston. Stream restorations can be done in lots of different sizes and intensities and it was clear, from maps and photos they showed me, that the contractor was only going to show off one of the smaller, less intense projects, which would present a view favorable to their position. So, I did my own stream walks in Reston in advance, and was able to demonstrate that the contractor was not being forthcoming about many things - the extent of tree removals they had done, the extent of storm damage that needed to be repaired, active erosion showing failure is about to happen again, that the need for dredging had substantially increased, the extent of invasive plants, and that water quality in the lakes had decreased. Shortly after I reported these observations to the CA Board, the contractor withdrew from the Elkhorn project.

As part of your investigations, I hope that you, and any other interested members of the Council or staff, would be willing to join Sharon Boies and myself for some stream walks to see the negative impacts of these massive construction projects, and how DPW fails to consider environmental and residential impacts when designing their environmental projects. I am thinking Longfellow and Sewell's Orchard Park can be done in a couple hours, but we could also go to Reston if you'd like, which is one of the best examples of the negative effects of these projects.

Please let me know if you are interested in seeing some of these projects from the perspective of the residents who are being directly impacted. I am sure both Sharon and I will go out of our way to accommodate your schedule.

I understand your questions about whether the bill would actually have any effect on the conduct of these projects. I don't know. What I do know, from personal experience, is that both CA and DPW currently undertake these projects with no regulatory guardrails whatsoever, and it is obvious that they need some. Neither agency is required to engage potentially affected homeowners and residents in the planning process, and they only do so when pressured by the public. Neither agency is required to re-design a project to reduce its footprint and impacts to adjacent properties. Neither agency is required to consider ways to reduce the removal of trees and displacement of wildlife. And neither agency makes an effort to independently confirm claims of benefits made by their contractors.

This has all resulted in both agencies running amok, wreaking havoc in Columbia's forests with no regulatory oversight (except for some limited stormwater management regulation during construction). In the past 15 months, I have had both agencies propose to cut down forests along my property boundaries, which would have (and still may) dramatically reduced my ability to sell my house. Neither of them provided me an accurate description of what they were proposing to do, and both of them resisted considering the observations of a surface water hydrology expert who has substantially greater qualifications in environmental planning and permitting than their own staff. It is my hope that the elimination of the

exemption to the Forest Conservation Act may, in some small way, be the beginning of an effort to establish standardized, County-wide environmental planning policies that more closely align with how the federal government does these projects under the National Environmental Policy Act (NEPA).

Thanks again for taking some time with me last night.

Bob Dover

Respass, Charity

From: Sandra SMITH <sandi.smith@verizon.net>
Sent: Thursday, November 9, 2023 2:57 PM
To: CouncilMail
Cc: Ball, Calvin
Subject: Stream restoration plumtree

Follow Up Flag: Follow up
Flag Status: Flagged

To whom it may concern:
Please accept this email as a request to stop the plumtree stream restoration.
Sandra smith
Sent from my iPhone

Respass, Charity

From: samjahng@aol.com
Sent: Tuesday, November 14, 2023 10:51 AM
To: CouncilMail
Subject: support CB40

Follow Up Flag: Follow up
Flag Status: Flagged

County Council,

I support for CB 40 and stop all stream restorations. Sam Jahng

Respass, Charity

From: Lisa Schoenbrodt <lschoenbrodtslp@gmail.com>
Sent: Wednesday, November 15, 2023 9:27 PM
To: CouncilMail; Ball, Calvin
Subject: Support CB 40

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Hello,
We are writing to ask you to support CB 40 and stop all stream restoration. As a life long resident of the Dunloggin/MacAlpine developments, we walk our dogs frequently in the area behind Dunloggin Middle School. We are very aware of the wildlife that flourishes in this area including the stream. The devastation of this area would cause lack of critical habitats to the many creatures who live there.
Thank you for your consideration of this critical matter.
Sincerely,
Dr. Lisa Schoenbrodt and Scott Myers
Residents of Ligon Rd.
Ellicott City MD 21042

Respass, Charity

From: Becky Hadeed <beckyhadeed@gmail.com>
Sent: Friday, November 17, 2023 9:57 AM
To: CouncilMail
Subject: strong opposition to rent control bill

Hi -

I'd like to register my strong opposition to the rent control bill proposed in Howard County.

Although my vote means little, I will vote against anyone who supports this bill.

Thank you,
Becky

Respass, Charity

From: Jason Koepke <strago@gmail.com>
Sent: Tuesday, November 21, 2023 11:27 AM
To: CouncilMail; Ball, Calvin
Subject: Support for CB 40 and stopping Plum Tree Branch Stream Restoration

Good afternoon County Council and County Executive Ball,

My name is Dr. Jason Koepke and I live in the Dunloggin Neighborhood with my wife, 3 children (9, 8, and 3) and our dog. We have lived in this neighborhood since 2014 (minus a brief stint out the country for my job).

We have been walking our children to Northfield Elementary School (NES) for the past 4 years and most days, after school, our kids will play in the forest with all of the other neighborhood kids. They love playing and building forts in the woods that sit behind Dunloggin Middle School! We have seen first hand what stream restoration will do to the ecosystem as a smaller conservation project was done on a drainage area that joins into Plum Tree Branch and it has left the area barren. We have taken our dog on walks through the forest, shared in boy scout advancement ceremonies and enjoy plenty of time exploring the wildlife and wilderness surrounding Plum Tree Branch. If the county moves forward with stream restoration, these things will cease to exist.

There has been copious amounts of research that shows there is little to no benefit from stream restoration and its effects on the Chesapeake bay. We beseech you to reconsider and support CB 40.

Sincerely,
Dr. and Mrs. Jason Koepke
9221 Crownwood Road
Ellicott City, MD 21042

Respass, Charity

From: Sharon Boies <sbmuzicmts@gmail.com>
Sent: Monday, November 27, 2023 11:55 AM
To: Rigby, Christiana; Jung, Debra; Walsh, Elizabeth; Yungmann, David; Jones, Opel; CouncilMail
Subject: Regarding CB40-2023, will you please watch these 2 short videos ? Thank you!

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Council members, Thank you for your consideration in supporting CB40-2023.
Will you please watch this short video about deforestation, the importance of even a single species - in this case Oak trees, and also carbon sequestration?
https://www.youtube.com/watch?v=0D0zp7Q4YnE
Although this project was in California, it applies to Maryland and Howard County.
Our neighborhood stream corridor forest was full of old growth Oaks which produced acorns, an extremely vital food source for the native wildlife.
Oak trees are said to host over 2000 other species.

Then please watch this short video. I don't believe you really want this for your neighbors and constituents, it can't be - I don't live there so I don't care what happens to their neighborhood or park, we're better than that.

https://www.youtube.com/watch?v=NvTvPnG6Qs8
Please vote in favor of CB40-2023.

Thank you so much for your time and serious consideration.
With sincerity,
Sharon Boies
410-730-5898

Respass, Charity

From: Robert Dover <bobatwaterbury@aol.com>
Sent: Friday, December 1, 2023 4:58 AM
To: CouncilMail
Subject: Additional information in support of CB-40

Follow Up Flag: Follow up
Flag Status: Flagged

Howard County Council Members:

My name is Bob Dover, and I live at 6354 Tamar Drive in Columbia. I testified in support of CB-40 at the Council meeting on October 16, and sent written comments to you on October 17. I followed up with more detailed comments submitted to Councilman Jones on October 29, Dr. Ball also on October 29, and Councilwoman Rigby (copied to the entire Council) on November 7.

I understand that a vote on this bill is still pending, and that some of you have been seeking additional information to determine a position. I am both an affected resident and a 30+ year experienced surface water hydrologist and environmental permitting specialist, and I appreciate your consideration of my comments.

I am writing today to inform you of some recent developments in the stream restoration world in Howard County, that have happened since my previous testimony. I hope you will also consider this additional information.

1) Since my previous testimony and comments, DPW has substantially modified and reduced the scope of their proposed Plumtree Branch stream restoration project. That project was met with substantial public opposition. My own comments opposing the project, which I sent to you on October 17, pointed out that there was no evidence of a need for the project, or that the project would accomplish any erosion reduction, water quality improvement, or ecological goals. The project would have destroyed more than 900 trees in a residential neighborhood, with no evidence that it would have any beneficial effects, other than creating profits for the developer.

Upon consideration of my comments, and those of many others, the stream restoration component of that project has now been eliminated. Other recently-proposed stream restoration projects, such as Elkhorn Branch and Centennial Lake, have also been reduced or withdrawn following detailed technical critique by well-qualified environmental professionals who also happen to be affected residents. Taken together, these recent retreats are evidence of a growing acknowledgement, on the part of regulators, land managers, and the public, that the misinformation spread by the stream restoration industry is now being reversed.

2) Also occurring since my previous testimony and comments, the Columbia Association Watershed Advisory Committee (WAC) recently held a meeting (on November 13) in which the status of their Longfellow stream restoration project was discussed. The information conveyed during that meeting was that hundreds of the "re-forested" trees that had been planted in 2020 to replace the mature trees that were cut down had failed to take root. CA directed the contractor to replant again, with 700 more trees planted in October, 2023.

Given that the 700 trees planted in 2020 had failed, it is not clear what CA is doing differently to make sure this next attempt will be successful. However, this is clear evidence of what the opponents of stream restoration have known all along - the claim that the hydrology and ecological functions of the removed trees will be quickly replaced by replanting is a lie. The Longfellow project is under intense public scrutiny, which may have been why CA made this aggressive effort to try reforestation again. Other areas are not so lucky - for instance, at The Glade in Reston, which was done in 2009, thousands of plantings failed, but were never re-planted. Fourteen years later, there are still no mature trees there.

Every time more information about stream restoration projects is revealed, the entire concept looks worse and worse for the environment, and for the residents who live near and enjoy the forests. I ask that you please consider - why does this exemption exist in the first place? There may be specific places where a stream restoration project may be appropriate

and effective, but the growing documentary evidence suggests that the successes are few and far between. Meanwhile, the damage caused by the projects that fail is immediate, extensive, and permanent. The stream restoration exemption only exists as a governmental incentive to encourage this destructive practice by reducing the administrative and technical requirements on the agencies (DPW and CA) and on the stream restoration companies. Given these large numbers of failures, why do you believe the County should be providing incentives for even more of these projects? Passing CB-40 will not stop stream restoration projects, but it is a step forward in introducing the truth about these projects into the conversation.

Thank you for considering this additional information.

Bob Dover
6354 Tamar Drive
Columbia, MD 21045
bobatwaterbury@aol.com
410-740-6647

Respass, Charity

From: Brian England <beengland@comcast.net>
Sent: Saturday, December 2, 2023 12:39 PM
To: CouncilMail
Cc: HCCA Board
Subject: Testimony for CB40-2023 December 4th 2023

Testimony for CB40-2023 December 4th 2023

The Howard County Citizens Association, HCCA supports this act because the county needs to be actively protecting our trees in as many ways as possible.

Trees are our number one resource for soaking up the rain, slowing soil erosion, saving energy, lowering temperatures, reducing wind speed, reducing noise, creating and protecting wildlife and plant diversity, beautifying our environment, cleaning the air and providing oxygen.

Recently Columbia Association's Eric Walker (Conservation Landscape Specialist) shared data that showed there has been tree canopy loss over the last few years. This is not acceptable and it further emphasizes why the HCCA supports bills like this that protect the environment.

Brian England. Board Director. Howard County Citizens Association .

Sent from my iPad

Respass, Charity

From: Mary Cochran <mc.jhmi@gmail.com>
Sent: Wednesday, December 6, 2023 4:21 PM
To: howard-citizen@googlegroups.com
Cc: CouncilMail
Subject: Water v Trees

Follow Up Flag: Follow up
Flag Status: Flagged

I'm not an advocate for the current approach to stream restoration. The existing data doesn't support the improved water quality goals of these projects. This, however, does not mean that the projects don't improve water quality, only that the science is insufficient and conflicting.

The projects are undertaken at a local level to meet federal mandates. At no point- federal, state or local- do these mandates require data to measure efficacy.

In the meantime we are; losing large trees, spending big dollars on small replacement trees with a low survivability rate, disrupting critical areas with mass grading, introducing invasive plants that displace our native plant species, degrading critical biohabitat and more.

If the science was there to support the current stream restoration processes as critical to water quality improvement, the question would be - at what cost? At that point we might decide that the environmental cost of better water quality is worth the loss of trees and degraded habitat. We might not.

Because you can't implement current stream restoration practices without mass grading and loss of trees, the bill at the local level that seeks to save trees is based on an assumption that the current projects are not environmentally sound or sustainable. That might be true, or it might not.

Assumptive legislation based on assumptive practices.

Tabling it seems like a fair response.

Perhaps we should table all stream restorations until we have good data? Perhaps the Federal government - who mandates these practices- should be requiring this data? In the absence of that inaction, perhaps the local government should legislate data collection for these projects so that we understand whether or not the millions spent locally are effective at improving water quality and the health of the Chesapeake Bay?

With sound data we could start a better conversation with the Feds about their mandates.

One more wrinkle. The federal mandates are to improve water quality, NOT to improve stormwater retention and runoff. There is no data for this either, but observationally it would appear that these large projects likely have value in managing stormwater. That could count as an environmental win if true and thus has a place in the conversation.

It's complicated.

Mary Catherine

Sent from my iPhone

On Dec 6, 2023, at 10:54 AM, 'STUART KOHN' via Howard-Citizen <howard-citizen@googlegroups.com> wrote:

FYI,

We are disappointed that CB40-2023 was once again Tabled as voted this past Monday. If our Environment is to be a priority we don't understand why at this time it hasn't passed unanimously by Council-members.

Stu Kohn
HCCA President

Sent from my iPhone

On Dec 3, 2023, at 7:58 AM, STUART KOHN <stukohn@verizon.net> wrote:

FYI,

The Howard County Citizens Association, HCCA continues to be concerned about our Environment. The latest is we sent testimony to the County Council emphasizing the importance of passing CB40-2023 which is unfortunately currently Tabled. This Bill introduced by Council-member Liz Walsh is to remove certain exemptions for stream restoration projects in the Forest Conservation Act, removing the definition of a stream restoration project, and generally relating to the Forest Conservation Act.

The Bill should Pass unanimously by removing it from the Table and voting in the Affirmative. The detail of the Bill can be found by going to https://apps.howardcountymd.gov/olis/api/Documents/LegislationDocument?documentId=34989.

Our Testimony is as follows:

The Howard County Citizens Association, HCCA supports this act because the county needs to be actively protecting our trees in as many ways as possible.

Trees are our number one resource for soaking up the rain, slowing soil erosion, saving energy, lowering temperatures, reducing wind speed, reducing noise, creating and protecting

wildlife and plant diversity, beautifying our environment, cleaning the air and providing oxygen.

Recently Columbia Association's Eric Walker (Conservation Landscape Specialist) shared data that showed there has been tree canopy loss over the last few years. This is not acceptable and it further emphasizes why the HCCA supports bills like this that protect the environment.

Brian England
HCCA Board of Directors

****

Stu Kohn
HCCA President

Sent from my iPhone

Respass, Charity

From: STUART KOHN <stukohn@verizon.net>
Sent: Friday, December 15, 2023 10:11 AM
To: CouncilMail; howard-citizen@googlegroups.com
Subject: Re: HCCA Requests the Council Approve CB40-2023

Dear Council Members,

A Call for Action is Requested - Pass CB40-2023 at your next Legislative Hearing on 2 January 2024.

This would undoubtedly be hopefully the beginning of demonstrating to your Constituents your commitment of Protecting our Environment as one of your 2024 Resolutions. The passage of CB40-2023 would be a start. Ansel Adam's is quoted as stating, "*It is horrifying that we have to fight our own government to save the environment*." Any chance our County Council will unanimously pass CB40-2023 on 2 January 2024?

Thank you in advance.

Stu Kohn
HCCA President

Sent from my iPhone

> On Dec 3, 2023, at 7:58 AM, STUART KOHN <stukohn@verizon.net> wrote:
>
> FYI,
>
> The Howard County Citizens Association, HCCA continues to be concerned about our Environment. The latest is we sent testimony to the County Council emphasizing the importance of passing CB40-2023 which is unfortunately currently Tabled. This Bill introduced by Council-member Liz Walsh is to remove certain exemptions for stream restoration projects in the Forest Conservation Act, removing the definition of a stream restoration project, and generally relating to the Forest Conservation Act.
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Brian England
HCCA Board of Directors

****

Stu Kohn
HCCA President

Sent from my iPhone

Respass, Charity

From: Sharon Boies <sbmuzicmts@gmail.com>
Sent: Tuesday, January 2, 2024 12:07 PM
To: Jones, Opel; Yungmann, David; Rigby, Christiana; Jung, Debra; Walsh, Elizabeth; CouncilMail
Subject: Please vote in favor of CB40 tonight
Attachments: 2018 - MD Reporter 2018 Bay scientists say stream restoration not delivering as much as hoped.pdf

Hello, I would like to share 2 articles with you regarding stream restorations.
Please vote to support our community and our environment, please support CB40-2023.

Thank you in advance for your time and consideration.
Very Sincerely,
Sharon Boies

https://www.baltimorebrew.com/2023/12/23/restoration-of-baltimores-stony-run-is-failing-again-residents-and-scientists-say/

BAY SCIENTISTS SAY STREAM RESTORATION NOT DELIVERING AS MUCH AS HOPED

By Maryland Reporter | November 28, 2018 | News | 0

Erik Michelsen, head of Anne Arundel County's watershed restoration program, stands near the base of a restored stream that flows into the South River. Bay Journal photo by Jeremy Cox

Listen to this article

By Jeremy Cox

Bay Journal

Erik Michelsen stopped his county-issued white Jeep Cherokee on the side of the road in a leafy neighborhood south of Annapolis, then plodded down into a ravine. He followed a trail through a tunnel of oak trees and rare Atlantic white cedars. The air was heavy with the scent of dew. At the bottom, Michelsen emerged in a picturesque scene: a babbling stream slightly too wide to leap across that was strewn with rocks, ranging in size from golf balls to microwaves.

If it seemed too natural to be natural, it was. In 2005, the state of Maryland and Anne Arundel County collaborated on a nearly $1 million project that transformed two failing stormwater ponds into "Wilelinor Stream," named after the adjoining subdivision. Bulldozers reshaped the land, workers sowed underwater grass beds and dump trucks hauled in tons of sandstone boulders and river rock.

"It's essentially creating systems that slow the water down through the valley, stack the water up, provide an opportunity for it to be processed and slowly released down to tidewater at Church Creek and the South River," said Michelsen, administrator for Anne Arundel's watershed protection and restoration program.

Millions to restore 655 miles of streams

Facing a 2025 deadline to clean up the Chesapeake Bay, officials in urban and suburban areas are spending millions of dollars on stream restoration projects.

The six states in the estuary's watershed, along with the District of Columbia, have told the U.S. Environmental Protection Agency that they plan to restore a total of 655 miles of streams. The projects operate on a theory that converting upstream waters from stormwater superhighways to slow lanes would decrease erosion and encourage more water to soak into the ground, reducing the amount of nutrients and sediment heading into the Bay.

Now, there is a growing scientific consensus that stream restoration isn't improving water quality and aquatic habitats as much as was once hoped in a highly urbanized area.

"It's not a waste of money," said Solange Filoso, a biogeochemist with the University of Maryland Center for Environmental Science. "But the return on investment is not as high as we thought it would be."

Filoso has been monitoring the Wilelinor and several other reconstructed streams for about a decade. At first, she was confident she would see significant improvement in water quality. What she found was much more modest: an average reduction of 5–15% in nitrogen and 40% in sediment.

2022
on **Maryland Republican Party at critical juncture as election nears**

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Some restorations more effective than others

Some stream restoration projects curb more pollution and others less, given the variations in construction methods and local topography, Filoso said. But she and other researchers studying projects across the mid-Atlantic have collected enough evidence to suggest that stream restoration alone can't solve the region's runoff problem.

"We are trying to solve a big problem … with a solution that isn't sufficient," Filoso said. "The solution being implemented doesn't match the magnitude of the problem.

Since 2010, when the EPA and Bay states agreed to their most rigorous restoration plan to date, the amount of nitrogen running off urban areas into the Chesapeake has increased from 39.7 million pounds a year to 41.3 million pounds, according to the federal agency's latest computer models. This is despite an overall 11% reduction in nitrogen from all sources, fueled largely by cuts to pollution from farms and wastewater treatment plants.

Nitrogen triggers algae blooms that cloud Bay waters, causing underwater grass beds to die back and rob the water of oxygen as they die, creating "dead zones" nearly devoid of fish and crabs. Efforts to reduce nitrogen fell short of the Bay cleanup midpoint reduction goal, registering a 30% decrease instead of 60%.

Restoration more art than science

Proponents of stream restoration say that its benefits haven't fully come to light because the practice remains in its infancy.

"I would tell you ecological restoration is not yet a science," said Keith Underwood, an Annapolis-based contractor who was one of the region's pioneers in the field, starting his first projects in the mid-1990s. "It's still very much in the era of an art."

Joe Arrowsmith, water resources engineer with Straughan Environmental in Columbia, said it's time for the field to evolve. "We have reached our base goals, and now it's time to reach higher goals," Arrowsmith said.

Restored streams only get better with time, proponents say, as the scars of construction heal and nature reasserts itself. But one improvement is obvious almost immediately: Water travels through the channels more slowly. That leads to less streambank erosion and less sediment being transported downstream. Phosphorus, another problem nutrient, clings to sediment. So it ends up staying put rather than being flushed into the Chesapeake.

Downsides

But there can be downsides, scientists caution. For instance, portions of restored streams can turn into "dead zones" themselves, Filoso said.

One of the main methods that contractors use to slow floodwater is creating a chain of pools separated by rock weirs; they're embedded in a slope so that one trickles into the next. In warm weather, decaying plants trapped in the slow-moving water can use up its oxygen.

When water turns anoxic, or lacking in oxygen, it can flip that lingering phosphorus from a positive story to a negative one. A chemical reaction unglues the nutrient from the sediment, transforming it into a fertilizer for algae blooms, Filoso said.

"All the restorations have trade-offs," she added.

No improvement in aquatic life

There is disagreement over whether the re-engineered streams are providing better habitat for insects, frogs and other wildlife. Studying more than a dozen stream sites in Maryland, EPA researchers Rebecca Cope and Greg Pond found that restored streams weren't improving aquatic life and, in some cases, were leading to less diversity. All that could be found in some were worms and maggots, Pond said.

Again, the issue seems to be the low amount of oxygen in some restored streams, he said. "The thing with dissolved oxygen is it's a kill switch. You get below 2 milligrams [per liter], you get a lot of death with macroinvertebrates that may have colonized," Pond said during a recent conference call with the Chesapeake Bay Program stream health panel.

Underwood was listening, growing frustrated. In an interview later, he called it unfair for scientists to evaluate all restored streams with the same criteria when great variations exist among them. Truly "restored" streams, known in the industry as regenerative stormwater conveyances, or RSCs, re-establish hydrologic connections between channels, their floodplains and the groundwater, he said.

"You saw that our detractors were calling a lot of things RSC that were not RSC," Underwood said. In one case, he added, "they were studying bugs at the outfall pipe from the Annapolis Mall."

Most stream restoration sites in Maryland

Ground zero for the debate is Maryland's highly developed Western Shore. Three out of every five miles of streams recommended for restoration across the Chesapeake's six-state watershed are in Maryland cities and towns.

As he drove to another stream restoration site a couple of miles away from Wilelinor Stream, Michelsen explained why the technology has caught on there. Anne Arundel's landscape, he said, unites two disparate features: loose, sandy soils and a Piedmont-like terrain. During heavy rains, that combination often leads to torrents of erosion that have scoured small streams and detached them from natural floodplains.

He stepped over the curb at the edge of a half-empty park-and-ride lot and tromped a few dozen yards to

where a grassy margin fell away into a gently sloping wetland. In 2016, the State Highway Administration rehabilitated the channel, which flows into Broad Creek.

Just about everything about the original headwaters channel was unnatural, including its very existence; it was carved by gushing waters turned loose by a dam break in the 1980s, Michelsen said. By the 21st century, the uncontrolled water had scoured a channel as deep as 6 feet.

The entire restoration area measures a handful of acres and is responsible for the drainage of a watershed spread across 250 acres – roughly half of it consisting of impervious cover, such as parking lots, highways and buildings.

Still, the wetland seemed to teem with life. On Michelsen's approach, a snowy egret and green heron took flight. Pointing out the birds, he said that their presence suggests the wetland is probably full of insects as well.

Michelsen, another participant in the panel phone call, took the criticisms in stride. "I think the field is still so young, every project is sort of its own experiment."

Anne Arundel is home to dozens of stream restoration projects, dating back more than 15 years, and officials there and elsewhere in Maryland appear undeterred by their middling results. Gov. Larry Hogan's administration recently awarded $22 million to 18

projects designed to improve the health of waterways. At least 14 involve restoring urban streams or using similar techniques to capture and store stormwater.

Muddy Creek in Edgewater, Anne Arundel

One of the best hopes for answering questions about stream restoration lies with Muddy Creek, a tributary of the Rhode River in Edgewater, which is also in Anne Arundel County. It is one of the only sites where scientists studied a channel before the work crews arrived and after they left — a key to sorting out what impacts can be ascribed to restoration.

Workers used sand and wood chips to raise the streambed, which had fallen 12 feet below the surrounding land. They installed small berms across the width of the channel at certain points to check the flow of water. Where once there was a deep ditch, water can now overflow the banks into a surrounding marsh.

The $1 million project caused a “profound change” to the ecosystem, said Tom Jordan, a senior scientist with the Smithsonian Environmental Research Center. He collected data on Muddy Creek’s water quality for one year before and two years after the restoration.

Almost immediately, he noticed an influx of wood ducks, salamanders and frogs. The water table rose, making the bank inhospitable to tulip poplars, and they soon died. But his water samples showed the stream performing as promised in some ways, particularly in its ability to sponge up phosphorus. Nitrogen levels

were down by only “marginal” levels.

The restoration had another unexpected effect — and not for the better. Portions of the stream have turned a rusty color, a symptom of iron leaching out of the rehydrated soil around it. The iron oxidizes when it comes in contact with the air at the water’s surface. The bacteria that feed on the iron deplete the oxygen in the water.

For Jordan, Maryland’s experiences with stream restoration present a larger question: Should streams suffer so that the Bay may live?

“It’s some kind of urban runoff treatment system, and it doesn’t seem right,” he said. “It seems like we should design urban development to protect the streams and not the other way around.”

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ABOUT THE AUTHOR

Maryland Reporter
news@marylandreporter.com
http://MarylandReporter.com

Fresh Water, Foul Sewage

Environmentby Peder Schaefer9:10 amDec 23, 2023*23*

Restoration of Baltimore's Stony Run is failing again, residents and scientists say

After millions of dollars spent on re-channeling the stream to slow runoff, critics say a new approach is needed

Above: James Wolf, president of Friends of Stony Run, surveys the creek in Wyman Park with his young son. (Peder Schaefer)

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On a recent chilly morning in North Baltimore, James Wolf clambered along the banks of Stony Run, pointing to what he and other stream watchers say has gone wrong:

Where a stand of trees once towered, an open field overgrown with invasive species.

Beside a man-made retention pond, a muddy sinkhole.

Boulders trucked in to make a series of pools, pushed into jumbled piles.

That's the current state of many parts of the stream, including in the Wyman Park Dell close to where Wolf, president of Friends of Stony Run, lives with his family.

After years of "stream restoration" projects conceived with great fanfare, the creek has become ground zero for the debate over reconstructing streams with rocks and new plantings to slow their flow and to filter out sediment and nutrients prior to emptying into the Chesapeake Bay.

"These restorations are disturbing natural areas" without having measurable success preventing pollution-laden water from gushing downstream, said Wolf.

Similar projects are being used by Baltimore and other jurisdictions to comply with state stormwater runoff regulations, but some environmental advocates are questioning their effectiveness and decrying their destruction of stream-side forests.

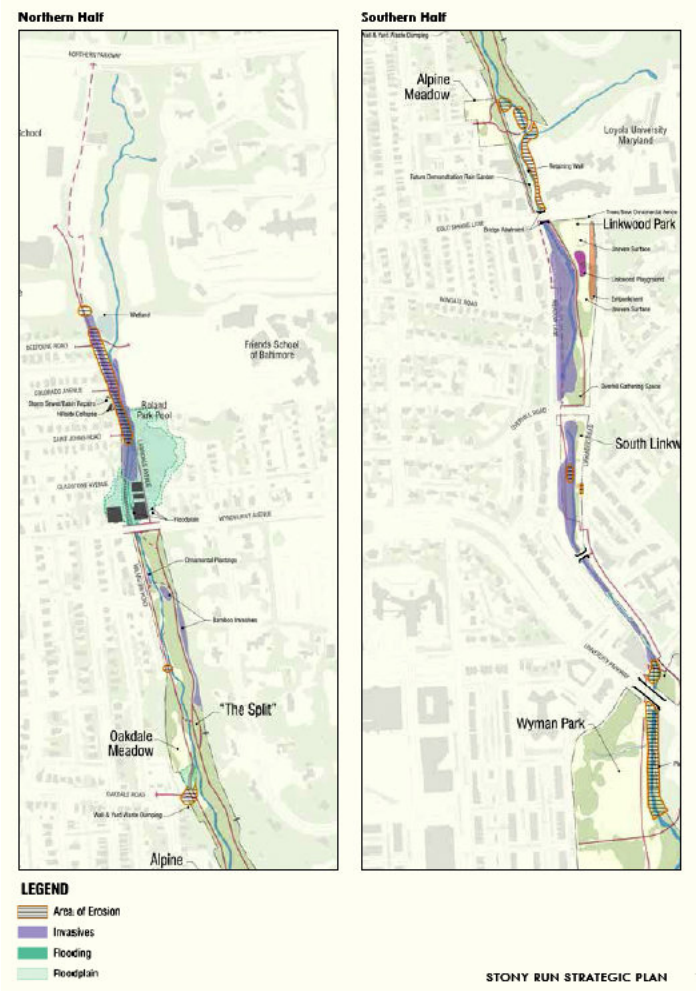
Walking the stream, he pointed out the eroded banks, fallen boulders and other concerns to *The Brew*.

He said the presence of the Johns Hopkins Homewood Campus directly next to the park, is likely leading to increased runoff during bad storms, which he worries could worsen from planned Hopkins expansion in the area.

“There are ways to interrupt stormwater before it inundates streams,” Wolf said, referring to efforts such as reducing the amount of impervious surfaces like roads, parking lots and rooftops.

Making that same argument, the Chesapeake Bay Foundation in October protested another restoration project – a $5.5 million plan to shore up Herring Run’s Western Branch in northeast Baltimore.

Scientists with the group said re-engineering the waterway would have questionable value at the cost of as many as 700 mature trees.



From Northern Parkway to University Parkway, Stony Run passes through Roland Park, Wyndhurst, Keswick and Tuscany Canterbury. Not shown: the lower portion that continues through Remington to Jones Falls. **BELOW:** The creek’s eroded banks are noticeable near JHU’s Homewood Campus bordering Wyman Park Dell. (Mahan Rykiel, Peder Schaefer)

Costly Do-Overs

The Baltimore Department of Public Works has defended its stream restoration work, saying it meets state agencies' requirements and says similar stream projects are in the planning stage.

Is Stony Run destined again to be among them? How much has been spent so far on restoration projects on the three-mile-long waterway?

DPW did not respond to multiple requests for comment on these and other questions.

But publicly available documents indicate that millions of dollars have been expended for work that's failed time and again.

In 2006, the city launched a Stony Run erosion control project using $10 million in city, state and federal funds. Residents complained as some 150 trees were cut down, bulldozers cleared land and rock walls were built in an effort to slow the water's flow.

A few years later, powerful rain storms overwhelmed the system and crews had to return and put the streamside boulders back in place. A few years after that, another set of rainstorms bashed the boulders out of line, this time costing $500,000 to repair.

Some local residents, such as Sandy Sparks, say the big washouts are precisely the reason why she supports storm restoration projects.

“They are more needed than ever because of the impacts of these catastrophic rainfalls,” said Sparks, a founder of Friends of Stony Run.

Stony Run overwhelmed its banks recently during one such storm.

The pounding rains on September 12 flooded basements, ruined cars and damaged a dry cleaner and other businesses in the Wyndhurst neighborhood.

“These are 100-year floods, and we’ve had three of them in the last three years,” said Odette Ramos, the area’s City Council representative, pointing to the effects of climate change on storm intensity.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Dirty water pours out of the Majestic Cleaners, off Wyndhurst Avenue, in the aftermath of Stony Run flooding in September. (Kee Kim)

Low-Hanging Fruit

City officials and the developers of stream restoration projects say the approach is the most cost-effective and straightforward way to mitigate the stormwater runoff and pollution that harms the Bay.

Chris Streb is an environmental engineer with Biohabitats, a local environmental firm that was a consultant on Stony Run stream restoration between 2008 and 2018.

Streb said he agrees that “a holistic perspective” on managing stormwater is ideal.

But he argued that the upstream approaches espoused by critics – removing impervious surfaces such as parking lots or planting vegetation and placing stormwater retention ponds on private property – are impractical.

“Stream restoration is definitely the lowest-hanging fruit in urban environments,” Streb said.

“The practical reality is that it’s hard to get the treatment up there. Stream restoration is just the most cost-effective way to abate the nutrient and sediment load.”

Retaining wall and tunnel at Wyndhurst Avenue that repeatedly floods during periods of heavy rainfall. **BELOW:** Boulders, some sunken, others pushed together, from a pri

Overwhelmed by Volume

Environmental advocates like Alice Volpitta, of Blue Water Baltimore, say that the over-reliance on stream restoration projects stems from the way the Maryland Department of Environment structures municipal storm sewer system permits or MS4's.

"One reason we and the Chesapeake Bay Foundation are appealing the MS4 permits is because the systems they put in seem to be overwhelmed by the volumes of water coming down," said Volpitta, the Baltimore Harbor Waterkeeper.

"We are not totally anti-stream restoration, but there still remains to be seen some better understanding of them, of what works and what doesn't," Volpitta said.

• **Low-income city residents disproportionately impacted by weak stormwater permit, environmentalists say** (9/14/22)

• **Tired of stormwater lapping at their front door, Baltimore residents join an environmental lawsuit** (10/23/23)

Solange Filoso, an associate research professor at the University of Maryland Center for Environmental Science, agrees.

“The system is promoting the rush to stream restoration,” she said, noting that the spending for such projects has increased dramatically in recent years. “People go where the money is.”

> “The system is promoting the rush to stream restoration. People go where the money is” – Solange Filoso at UMD’s Center for Environmental Science.

By one recent estimate, the number of Maryland stream restorations seeking state approval grew 50% over four years and the average project size has more than tripled.

Chesapeake Bay Foundation’s senior scientist, Doug Meyer, says Stony Run is a case study of the limits of restoration.

“They do in-stream work, but they really don’t address the effects of impervious surfaces on that stream. More specifically, they do not address the volume of water.”

Meyers disputes the assertion that stream restoration is the most cost-effective way of coping with increasing amounts of stormwater runoff.

“What they aren’t taking into account is all the extra projects the city has to pay for to fix all of the fixes.”

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James Wolf

3 days ago edited

This is important issue and I'm glad that it is getting coverage. I agree with the general thrust of the article, but I'd like to add couple things from my interview that didn't make it into the article.

First to clarify, I did not single out Johns Hopkins in the way portrayed. The reporter and I spoke about the proposed developments at JHU, but I did not (and do not) hold them responsible for an out-sized share of the problems we are facing regarding runoff. I have every expectation that JHU will use state of the art stormwater control measures as they build.

Second, this is a truly terrible picture of me. At least my son is cute as always. Haha. These things are minor however and are not what is compelling me to add to the record here.

Absent from this article are the many positive things I emphasized about DPW and their personnel. DPW officials have been very receptive to Friends of Stony Run. FSR has an open and continuing dialogue with DPW, BCRP, and Councilwoman Ramos regarding work in the Stony Run streambed and watershed. I think it's important to keep in mind that the DPW is tasked with rapidly addressing problems which have developed over centuries and are now subject to intensifying factors. From my experience with DPW, they are wanting to do better and they are as motivated as anyone to find ways to repair this broken system.

The DPW can only do so much. Land in the city is mostly privately owned. In order to solve many of the stormwater related issues we'll need to educate, to inspire and to persuade private property owners to remedy the problems presented by their land use. Deforestation and placement of impervious structures continues apace as we struggle mightily to deal with the consequences. We need to prioritize removing impervious surfaces, building retention structures,

see more

0 0 Reply • Share ›

F **Frank Francisco** ➚ James Wolf

2 days ago edited

I've been waiting for years to hear CBF or anybody tell us even an approximate acreage, volume, and possible location of stormwater treatment required to negate the need of stream projects in the City. Those repeated 100 year storms, whose houses or parks will be bulldozed and fenced out to make room for these massive facilities? We all know we're talking about 100x the scale of the 37th street pools. If we are going to have an adult conversation about this, you need the full equation. And if we're going to discuss stream maintenance costs, let's absolutely have an adult conversation about how well local governments are doing in their maintenance and inspection of of rain gardens, pervious pavers, and private home rain barrels, for which they're also taking credit.....and what it would cost to make those facilities perform as designed. But nobody who criticizes projects here, actually wants to have those difficult conversations.

0 0 Reply • Share ›

D **Debbie Jones**

10 days ago

Thank you for this article. I walk the Stony Run trail often and have been concerned about the recent deterioration. So much attention and money are being funnelled into plans that are band-aids, not long term solutions.

1 0 Reply • Share ›

F **Frank Francisco** ➚ Debbie Jones

2 days ago

The concern is fair, the "band aid" accusation is not. We're talking about millions of gallons per water per storm. Which park or community center in your neighborhood should be bulldozed, or which part of the Wyman Dell fields should be excavated and fenced off to public access, to realistically deal with this volume of water? Which streets - specifically - should have houses demolished to make room for more stormwater storage tanks? Who lives in those houses? Let's have the conversation, instead of complaints about band aids.

0 0 Reply • Share ›

ecogordo
12 days ago

Seems like there might be a conflict of interest here. Nothing about best practices. No system is perfect, but there must be someplace, somewhere that has figured this out. Holland? There will be more rain in the future.

0 0 Reply • Share ›

Frank Francisco → ecogordo
2 days ago edited

For better and for worse, Maryland's approach to this is considered the national standard, and nobody hates that more than CBF. In developed (in similar time frame) nations who have done "better" (very few and very localized work), the idea of "public benefit" does not include the cost a community bears, similar to how the NYC subway system was developed in the early 1900s. For example, Oh, that train is shaking loose a school's foundation? We don't care. The proposed train station will displace 500 ethnic refugees? We don't care. A proposed subway stop will bring riders "from the wrong neighborhood"? We don't care. You don't want to sell your property to the transit authority? LOL we'll have the sheriff bring the check, and evict you on the spot. The result, in NYC transit's case, is a superior (sometimes) infrastructure and the community impacts were mostly forgotten over time. However, mostly for the better, that is not how public infrastructure projects are conducted in the USA anymore. There are substantial federal and state laws prohibiting the NYC Transit / European approach, because OF COURSE, the "just do it away from the streams!" approach has historically ended up with (for example) giant water storage tanks, stormwater facilities, and sewage treatment plants being placed in the community space (whether school yards, ball fields, golf courses, gardens, homes, etc) of communities of color. And for that reason it's always important to challenge people who say, "Eww, this is the wrong way, we don't like it," with questions of "Point to which houses, schools, and park land should be bulldozed to make space for the alternative infrastructure. Have you asked the community if they want to give it up?" I've yet to see any stream restoration critics be bold enough to take on this challenge, which is a real shame. They should let us know who they think should bear the impact of their bold suggestions. In a tight space like much of Baltimore, our real debate here has to be, "is community access to Wyman Dell more or less important than saving 150 trees and doing this work in the stream?"

0 0 Reply • Share ›

Gerald Neily
13 days ago

Whatever the City does is considered the best thing to do,, and whatever is not done is considered impractical and infeasible.

2 0 Reply • Share ›

Frank Francisco → Gerald Neily
2 days ago edited

In Stony Run, the 100 year storm puts over 1,000 cfs (about 450,000 gallons per minute, for hours on end) into the stream. Please point out which parks, streets, and groups of homes should be eliminated to store these tens of millions of gallons water and eliminate the need for stream stabilization. As well as your approach to legally condemn (from multiple unwilling landowners) that land for water pollution remediation, which is not an eminent domain purpose supported by the federal courts. Once you've sketched that out, including the obvious delays due to litigation and EPA penalties for non-compliance, let me know if that's less expensive than stabilizing an already- artificially-located stream on City property. I feel like this obvious point has been commented on by a multitude of people on a multitude of platforms over the last several years.....yes there's always the chance that the City has done this all ham-fistedly and without due consideration. However, can we also, sometimes, consider the possibility that under strict supervision of the EPA, MDE, and scads of land attorneys and civil engineers, that they landed on this solution as the most workable? That these projects were scrutinized in master plans and then for years on end in the permitting processes, and maybe, as a whole, it was thought through? Not always, but perhaps sometimes?

0 0 Reply • Share ›

lanas → Frank Francisco
18 hours ago edited

I'd like to know where you got those flow numbers....bc the last time I checked dpw stream restoration and pedestrian bridge removed the USGS gauge at Ridgemead back in 2013.

0 0 Reply • Share ›

bmorepanic
13 days ago

This topic is heckin' complicated.
1 The flooding maps are just plain wrong.
2 Any maps indicating "normal" stream flows is outdated in about 3 years. They are attempting to restore water movements about an order of magnitude less than what the stream actually does.
3 The weather patterns are changing rapidly. None of the information projects rely on do include modelling of immediate future flooding by extending recent flood data with recent climate change data.
4 Streams move. Streams flood - expanding outwards at times to increase water retention in surround flat land. The more a stream is "channeled" by a restoration project, the faster the water will move and the faster channel will erode and flooding will begin in unexpected places.
5 We allowed building in places where we never should. As a city we need to decide what we will protect and what should be abandoned and used for storm water retention. Whatever we try to protect will required large underground retention tanks capable of storing hundreds of thousands of gallons of water followed by a slow release of that water after the storms are over.
6 The more land we develop, the more we approve building additions, taller buildings, wider roads and paving over open land, the worse we make our flooding. The city rubberstamps approvals without due consideration of effects, the city routines allows organizations like Johns Hopkins to skip storm

water remediation in their building projects.

4 0 Reply • Share ›

Frank Francisco → bmorepanic
2 days ago

The fact is that this ill-advised development, in most of our City watersheds, that has the most negative impact on water pollution and stormwater management, happened between 1860 and 1960. Including the physical relocation of most of the streams to wherever they currently are. Including laying sewer lines across and throughout the streams. Letting *anybody* skip or skimp on SWM requirements in Baltimore City is like punching somebody in hospice care. But there's no going back, and fancy Annapolitans declaring "just keep the stormwater out of the stream!" need to be asked, "Where - exactly?"

1 0 Reply • Share ›

JFCanton → bmorepanic
13 days ago

Had these projects been done in 1971 or 1983, they would still have gotten whacked... because floods that are still the local measuring sticks (after the 19th century, anyway) occurred in 1972 and 1984. The main problem IMO is, deliberate human work will never be as stable as an incrementally evolved condition. There will be a soft spot at some point that, when the stress is near the limits of the engineering assumptions, will at that point invalidate the empirical equations used to create the design... and that will be the weak point where entropy can enter.

Small things can be overengineered to the point where failure is very improbable. The upper end of the Minebank Run work, so far as I know, is just fine. But it's only a quarter square mile. At the scale of Stony Run, it's going to be much harder to overengineer it.

2 0 Reply • Share ›

bmorepanic → JFCanton
10 days ago

Yes and that would be nice if they were actually trying. The ground around the picture of the relatively small rocks in the trickle of water shows anyone that the water gets 2-3 feet deep on a regular basis. It's likely higher in the "100 year" annual storms.

It's like they picked out the cheapest possible thing they could do without concern as to whether it works.

0 0 Reply • Share ›

JFCanton → bmorepanic
10 days ago

That line of boulders? Yes, something didn't work there. It could be older and somewhat experimental. Or undermined by the people wielding the budget. They don't look like they were held in anything.

I have usually seen those boulder sections designed with boulders also on the side, stacked pretty close to the top of the channel (which is about the annual maximum flow). That's high enough that overflow will be spread out, shallow, and slow-moving and very unlikely to erode anything.

1 0 Reply • Share ›

Frank Francisco → JFCanton 2 days ago edited

You're 100% correct. There has been a (slow) sea change in project design from keeping storm flows (every storm, except major storms) in the channel (late 1980s to early 2000s), to letting them (in every storm) spread these big stresses/energies into a vegetated floodplain (late 2000s to now). A lot of this design change happened after hurricane flows in 2006-2011, and then after 500 year storm events in 2014 and 2019. The conservation community has learned a lot in a relatively short amount of time, and if the designers of Stony Run "I" could be accused of anything, it would be of using 1970s-1980s techniques in the early 2000s....which absolutely everybody was doing.

0 0 Reply • Share ›

bmorepanic → JFCanton
8 days ago

Those "boulders" are so small that I could pick one up. They are small stepping stones ~ 8" tall at most.

0 0 Reply • Share ›

lanas → bmorepanic
18 hours ago

Some of the boulders moved in recent storms were 8 ft boulders

0 0 Reply • Share ›

JFCanton → bmorepanic
8 days ago

It looks like a small stream, so the rock size might be sufficient. But just one line won't do it.

1 0 Reply • Share ›

bmorepanic → JFCanton
7 days ago

It is a small tributary until it rains. The ground says it gets around 3 feet deep more often than every 100 years. There is a drain also, but it's both smaller than needed and not at the low point. I'm not sure where it's draining to.

0 0 Reply • Share ›

Frank Francisco → bmorepanic
2 days ago

Yeah it's nowhere (vertically) near any viable floodplain to reduce volumes and velocities. It was an eroding trench (with exposed sewer) before the project, now it's a "susceptible to erosion" stabilized channel that's hanging in there, but could be doing better.

0 0 Reply • Share ›

bmorepanic → Frank Francisco
2 days ago

It's only a tiny bit of Stony Run, tho. And this little bit is more decorative - hence the photos - but the schools and housing projects have sucked off around 30-40% of the unpaved land that used to border the stream. It's now imperious surface, fake grass "playing surface" or buildings. It's time to stop doing decorative to be able to give away storm water permits that turn more open land into impervious surfaces.

0 0 Reply • Share ›

Gerald Neily → JFCanton
12 days ago

Peter Hammill
https://www.youtube.com/wat...

STRANGER STILL in another town,
how normal to sit out the dance,
eating the good meal by myself,
toasting the empty glass;

and they're already setting out the next place,
already forgetting about the last.
No, nothing could be less strange in entropy
no change, no change, no change.

No danger in a normal life,
better steady down the adrenalin pump.
Excess refraction in the mirror
only leads to the quantum jump...

Oh, but it leaves me in limbo;

see more

0 0 Reply • Share ›

Frank Francisco → Gerald Neily 2 days ago edited

I'd argue the entropy happened when the Harbor's wetlands were filled, the City's streams were straightened or piped, and 200 years of unprocessed livestock, industrial, and human waste (to say nothing of eroded 10,000 year old organic topsoil) all were ritualistically drained into the Harbor and off the land. We've literally got people opposing public health projects (like leaky sewer line repairs in open streams in public parks) because the invasive trees growing over the hepatitis-leaking sewer line are pretty to look at. "But the water is clear, you see!" That sounds like an entropic circling of the drain to me.

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