

Written Testimony SB 969 Public Health Law Clinic.

Uploaded by: Alex Sadzewicz

Position: FAV

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Testimony in Support of SB 969

Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bay Restoration and Funding (Whole Watershed Act)
Before the Environment and Transportation Committee, March 1, 2024

We support Senate Bill 969. The proposed legislation funds five watershed restoration projects over five years. The projects will be chosen from a varied group of geographies and land uses, with a stated emphasis on overburdened and underserved communities where environmental hazards are severe and economic challenges abound. The bill also develops a new certification process for stream restorers to ensure that restoration projects progress consistent with protective standards. By targeting and fixing five watersheds at a time, the state would improve local environmental health. In turn, this improved environmental health would lead to healthier water and healthier people. We support this bill because the legislation would jointly benefit the state’s environmental health and the state’s public health.

I. Water Health is Important for Environmental Protection

Protecting waterways is important for environmental health. Every organism living within an ecosystem will be harmed if the water is poisoned. Pollution in the water can kill plants in the surrounding area as well as animals that reside in and drink the water.

Acutely toxic chemicals dumped by industrial polluters can damage the organ systems of various aquatic and amphibious animals. Trash dumped into waterways can harm animals that eat it and can clog and divert streams past their natural borders. Nutrient pollution can also devastate ecosystems by causing algae blooms and dead zones.¹

In Maryland, the Chesapeake Bay is an incredibly important and vital resource. It is a source of food, recreation, and employment that provides various ecosystem services, such as filtering water and preventing shoreline erosion. However, the estuary that flows from waterways in six states—Delaware, Maryland, Pennsylvania, New York, Virginia, and West Virginia—so every water upstream that is impacted by pollution or degradation, will also have an impact on the Chesapeake Bay. While many Maryland streams seem disconnected from the Chesapeake Bay, the health of the whole watershed is connected, so protecting individual ecosystems will also protect the whole estuary.²

¹ Melissa Denchak, *Water Pollution: Everything You Need to Know*, NATURAL RESOURCES DEFENSE COUNCIL, <https://www.nrdc.org/stories/water-pollution-everything-you-need-know#whatis>.

² Maryland Department of the Environment, *Our Treasured Ecosystem*, MDE (Accessed February 20, 2024), <https://mde.maryland.gov/programs/water/TMDL/TMDLImplementation/Pages/what-is-the-bay.aspx>.

Protecting waterways like wetlands and streams—which Maryland’s current law does—also provides more unseen ecosystem services that benefit everyone and everything living around them. Flooding is an increasing worry for Maryland as sea levels rise and more extreme storms increase in number. Strong and robust waterways, undamaged by pollution and degradation from construction are better able to mitigate flooding, thus decreasing the economic impact of these occurrences.³ Annapolis and Baltimore are examples of cities already experiencing the economic impact of coastal flooding. Protecting waterways will also protect our environmental, cultural, and historic landmarks in these cities and across the state.

Focusing on the watershed as a whole in restoring streams and other waters is important because it ensures that the impact of these projects multiply in effect rather than remain fragmented and ineffective.

II. Water is a Social Determinant of Health

Environmental conditions are a social determinant of health. A healthy ecosystem provides positive public health outcomes. Conversely, unhealthy air and water can lead to either temporary sickness, or permanent disease.

The United States Department of Health and Human Services notes that communities of color and low-income communities are more likely to face environmental conditions that correlate with negative health outcomes. This bill not only emphasizes helping to restore the state’s waterways, but the bill also prioritizes environmental justice projects in overburdened and underserved communities. This emphasis will help to alleviate the unequal burden shouldered by communities of color and low-income communities throughout the state.⁴

Polluted waterways can lead to unsafe drinking water. Water can be contaminated by harmful bacteria and chemicals. Bacteria, like *E. coli*, pollute well water throughout the state.⁵ Toxic chemicals, like PFAS, pollute the Chesapeake Bay watershed. Hazardous chemicals can cause serious illnesses, like cancer. People rely on safe water consumption for a healthy and fulfilling life.⁶

Water is not only necessary for hydration, but also for sanitation. Access to clean water for sanitation is necessary for people to bathe and safely dispose of waste. If waste is not properly disposed of, then the natural environment will be polluted. Importantly, people can also

³ U.S. Environmental Protection Agency, *Why are Wetlands Important?*, U.S. EPA (March 22, 2023), <https://www.epa.gov/wetlands/why-are-wetlands-important>.

⁴ U.S. Dep’t of Health and Hum. Servs., Health People 2030: Environmental Conditions (last visited Feb. 25, 2024), at <https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/environmental-conditions>.

⁵ Laura Wormuth, New UMD Well Water Data Suggests Contamination Frequent on Farms, *Maryland Today* (Mar. 13, 2023), at <https://today.umd.edu/new-umd-well-water-data-suggests-contamination-frequent-on-farms>.

⁶ Josh Kurtz, Report Details Alarming Levels of Toxins Being Dumped in Md. Waterways, *Maryland Matters* (Sept. 28, 2022), <https://www.marylandmatters.org/2022/09/28/report-details-alarming-levels-of-toxins-being-dumped-in-md-waterways/>.

get seriously sick. Access to clean and safe water for sanitation keeps people in Maryland healthy.

Tainted water can infect the world-renowned Maryland seafood that people eat. Humans can get sick if the food we eat is contaminated. In Maryland, there is evidence that fish in our waterways contain per- and poly-fluoroalkyl substances (PFAS), so-called forever chemicals.⁷ The same chemicals that would be toxic to drink, are also toxic to eat. By cleaning our waterways and our environment, we are also cleaning our food supply.

Aquatic recreation boosts mental health and is a draw for tourists. Marylanders and our visitors use the Bay and its tributaries for fishing, crabbing, boating, swimming, and other aquatic activities. These activities are more than pastimes or hobbies. These activities boost mental health and make the residents and visitors happier and healthier. These activities become dangerous, however, when the water's animals, plants, and destinations become polluted.⁸ Polluted waterways cutoff people from the resources and activities that provide fulfillment which can harm public mental health. Polluted waterways will also stifle our vibrant Eastern Shore tourism.

III. Water Health is Important to Secure for Future Generations

As water is vital for both ecological and human health, this resource must be secured for the youth of today and future generations. In recent years, there has been a push by young people to hold polluters and the government accountable for environmental injustices that will impact their ability to enjoy and use natural resources within their lifetimes, as well as for future generations.⁹

Without efforts to restore and protect the watershed, there will be innumerable ecosystem services lost for the youth of today and future generations. These services include using the waters of Maryland for food, drinking water, recreation, flood-controls, and the economic benefit that each of these provide for individuals and communities in the state.

People in the state rely on the state's waters for drinking water and sanitation. If groundwater is not protected, and if the Bay and its tributaries are treated as dumping grounds, then people within the state will not have access to clean water. Clean water is an essential environmental condition that determines the public health of the people of the state.

Maryland is known for blue crabs and oysters; indeed, we have designated the blue crab as the state crustacean.¹⁰ They are a quintessential part of Maryland summers, but without a focus on restoring waterways, these fisheries could be lost. The Bay is still struggling with non-

⁷ Timothy B. Wheeler, 'Forever Chemicals' Found in Chesapeake Region's Freshwater Fish, Bay Journal (Aug. 25, 2020), at https://www.bayjournal.com/news/fisheries/forever-chemicals-found-in-chesapeake-regions-freshwater-fish/article_789c01cc-e6d6-11ea-b4a5-c7a15055b4a8.html.

⁸ Josh Kurtz, Enviro Group Warns of Beach Pollution as Heat Wave Lingers, Maryland Matters (July 14, 2023), at <https://www.marylandmatters.org/2023/07/14/enviro-group-warns-of-beach-pollution-as-heat-wave-lingers/>.

⁹ Jeffrey Kluger, *The 'Juliana' Case Shows Where Climate Change Litigation Goes Next*, TIME (January 4, 2024), <https://time.com/6552129/juliana-vs-us-climate-case/>

¹⁰ Maryland General Provisions Code §7-303.

point source nutrient pollution, which creates an uninhabitable environment for crabs, oysters, and other fish that live in the estuary.¹¹ Young people may not be able to fish with their families and have crab feasts to the same extent that Marylanders are able to now.

Waterways throughout Maryland provide many opportunities for recreation, like swimming, beaches, boating, and fishing. Protecting the ability of future generations to enjoy these activities throughout the watershed is important for the economic benefits for communities around these waterways and the ability to enjoy them themselves. Baltimore has spent the last decade working to restore the water quality of the harbor to make it possible to safely swim. While the work is still ongoing, it is likely that in the years to come this resource will once again be available to people that live in and visit Baltimore.¹²

One of authors of this testimony, Alex, spent much of her childhood in the summertime was spent in the creek by her house, which she was able to play in because it was clean and undegraded. We are part of the generation that has had access to these water resources, but without intervention, we will also watch them disappear—for the youth now and for future generations. This bill will ensure that children and future generations will be able to have these same experiences by restoring streams throughout the watershed, including in environmental justice communities.

IV. Conclusion

We support Senate Bill 969 because it would invest in the environmental health and the public health of the state. Children should be able to live in and explore the culture of our historic cities, like Annapolis and Baltimore, with access to clean water and without fear of flooding. Children should be able to fish, crab, and swim in the Bay and its tributaries without fear of being poisoned. By supporting this bill, we will be supporting the environment and health of our future. By supporting this bill, we will invest in the generations of Marylanders to come. For these reasons, we request a favorable report on Senate Bill 969.

This testimony is submitted on behalf of the Public Health Law Clinic at the University of Maryland Carey School of Law and not by the School of Law, the University of Maryland, Baltimore, or the University of Maryland System.

¹¹ Maryland Department of the Environment, *Our Treasured Ecosystem*, MDE (Accessed February 20, 2024), <https://mde.maryland.gov/programs/water/TMDL/TMDLImplementation/Pages/what-is-the-bay.aspx>.

¹² Lillian Reed, *Is Baltimore's Harbor Swimmable? Advocates Take the Plunge to Prove It*, THE BALTIMORE BANNER (November 9, 2023), <https://www.thebaltimorebanner.com/community/climate-environment/baltimore-harbor-swim-environment-CV5YKBCDTRCHVKHUYJ6U3P5WGU/>.

SB969 Testimony_SR.FAVORABLE.pdf

Uploaded by: Annie Richards

Position: FAV



3/5/24

**Testimony in SUPPORT for SB969 -
Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and
Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)**

To Chair Feldman and Members of the Committee,

Thank you for this opportunity to submit testimony in **SUPPORT of SB969** on behalf of ShoreRivers. ShoreRivers is a river protection group on Maryland’s Eastern Shore with more than 2,500 members. Our mission is to protect and restore our Eastern Shore waterways through science-based advocacy, restoration, and education.

Our rivers are impaired by nitrogen, phosphorus, sediment, and bacteria. After 40 years of pollution reduction efforts in the Chesapeake Bay, our rivers and our communities are still falling short of the envisioned restoration goals. Scientists who advise on state clean-up efforts recently completed a study to understand why. The Chesapeake Bay Program’s [CESR Report—A Comprehensive Evaluation of System Response](#)—outlines the following key points:

- Runoff pollution in our rivers comes from only 5–20% of our land—and we need to effectively target our restoration work on that land.
- Nonpoint source pollution is our last and largest obstacle to meeting our restoration goals—and agriculture is the largest nonpoint source on the Eastern Shore.
- **We need to increase our monitoring efforts to improve the efficacy of future restoration beyond 2025—this will take funding and government support to implement effectively!**
- Restoration practices cannot keep pace with the imbalance of nutrients introduced to the watershed—we need large-scale behavior change that will reduce the amount of nutrients introduced to the watershed.
- Voluntary and incentive programs—as currently imagined—are not enough to achieve restoration goals.

Following the recommendations of the CESR report beyond 2025 will mean a shift in goals and perspectives when engaging in water quality restoration. One of the most interesting components of the CESR report is the inclusion of human interaction with this unique resource. For decades, restoration metrics have been largely unrelated to the ways we interact with and enjoy our local waterways. By making changes like shifting our focus from deep channel oxygen levels to shallow water habitat responses, we can prioritize increasing biodiverse ecosystems with grasses, oyster beds, and native marsh lands that sustain fisheries, increase opportunities for recreation, and increase water quality in the parts of the Bay humans interact with most.

There will be many changes and innovations needed to address all that the CESR report recommends, and **the Whole Watershed Act is one of our first attempts to do so in five statewide pilot programs covering a diversity of communities and land uses. This bill will also encourage and strengthen interdepartmental collaboration at the state level to support restoration work.** ShoreRivers’ own Restoration Department has implemented more than 260 projects, most of which have been funded by state and federal grants. These projects assist farmers

with addressing nutrient runoff, local governments with managing urban runoff, and underserved communities with addressing flooding and critical infrastructure challenges. Increased coordination between state agencies will bolster our work and increase efficiency with state investments.

ShoreRivers supports SB969 for its commitment to fund monitoring efforts. Despite decades of restoration Bay wide, there is a response gap between best management practices (BMPs) installed and water quality improvement. By conducting more frequent and comprehensive monitoring, we can bridge this gap, identifying areas where BMPs are effective and where they may need adjustment or additional support. Ultimately, increased water quality monitoring data can feed into improved pollution reduction models. These models can help policymakers make more informed decisions by predicting the outcomes of different restoration strategies, by calculating nutrient and sediment reductions, and by identifying areas of highest priority. In this way, enhanced monitoring contributes to a better understanding of water quality trends and the development of more effective policies for Chesapeake Bay cleanup and restoration.

While ShoreRivers supports **SB969** as introduced, we feel it is important to provide context for our support on this bill in relation to others this session that seek to regulate stream restoration. As previously mentioned, much of our restoration work—including but not limited to stream restoration—is funded through state and federal grants, which have meticulous technical review and public notice protocols to ensure quality projects are implemented. **We support the Whole Watershed Act's work to establish a licensing board to make sure that stream restoration projects—grant funded or not—are implemented by quality contractors.** This is a reasonable correction to offer in response to several detrimental stream restoration projects that have been implemented as mitigation measures on the Western Shore. However, if amendments are later added to this bill that unnecessarily restrict stream restoration unrelated to mitigation requirements or that are duplicative of grant funder regulations, ShoreRivers reserves the right to change our position and offer counter amendments. **In particular, we are concerned about:**

- **Ambiguous monitoring requirements**— While we are very supportive of increased monitoring efforts, requirements and parameters should be tied to specific project designs and permits associated with those designs, as every project is different, just like every watershed is unique.
- **Public meetings for projects on private farmland**— much of the stream restoration work on the Eastern Shore takes place on large private properties that are many (if not hundreds) of acres in size. Requiring a public meeting to discuss projects that have no impact to adjoining properties would place land owners under an unreasonable amount of scrutiny and may deter landowners—often farmers— from engaging in practices we know to be beneficial for water quality.

As written, this bill does not currently contain such amendments of concern, and ShoreRivers encourages the committee to give **SB969 a favorable report, as written.**

Sincerely,
Annie Richards, Chester Riverkeeper, on behalf of:

ShoreRivers

Isabel Hardesty, Executive Director

Annie Richards, Chester Riverkeeper | Matt Pluta, Choptank Riverkeeper

Ben Ford, Miles Wye Riverkeeper | Zack Kelleher, Sassafras Riverkeeper

Whole Watershed Act Testimony 030424.pdf

Uploaded by: Bill Berry

Position: FAV

Testimony for a favorable report on SB0969 – Stream and Watershed Restoration ...
“The Whole Watershed Act”

This important legislation is exactly what is needed to begin to improve the water quality of impaired streams in Maryland. According to MDE analysis there are impaired streams in most counties in Maryland including in Charles County where I live.

The current approach to watershed restoration has not achieved the results most expected. It is time to try a new model for stream restoration that prioritizes our restoration efforts on truly impaired small streams with a focus on removing those streams from MDE’s impaired list. This approach was endorsed in the University of Maryland’s 2023 report “Comprehensive Evaluation of System Response” and is based on innovative new approaches to stream restoration by other states in the Chesapeake watershed.

SB0969/HB1165 will prioritize \$20M in State funds toward 5 whole watershed restoration projects for 5 years. Selected watersheds will represent different geographies and land use types with a priority for Environmental Justice communities and that will have the ability to demonstrate progress in a relatively short time frame. The legislation will establish a State Management Team to select projects, monitor progress and expedite the permitting process. An added benefit of the legislation is the development of a certification for stream restoration practitioners to assure projects are done correctly using Best Management Practices and ensuring quality.

I am asking you to provide a favorable report for SB0969. This important legislation will provide a valuable model for how watershed improvement done right can increase water quality for all Marylanders.

Respectfully,

Bill

W. O. (Bill) Berry, Ph.D
Biologist/Environmental Scientist
3525 Elsa Avenue
Waldorf, MD 20603

301-509-7144

sb969.pdf

Uploaded by: Bonnie Weissberg

Position: FAV

Testimony Supporting SENATE BILL 969 Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding **Whole Watershed Act**

Assigned to: Education, Energy, and the Environment March 5, 2024

Dear Senators Elfreth and Guzzone:

I am a resident of Baltimore, MD, I support this bill and I am asking for support from all State Senators. This bill will take several important steps to better align public resources with environmental outcomes and promote innovative partnerships.

In 2023, the Science and Technical Advisory Committee to the Chesapeake Bay Program released a report titled Comprehensive Evaluation of System Response, better known as CESR. CESR recommends a focus of investments on smaller geographies more likely to be responsive to restoration efforts in a shorter amount of time as well as providing multiple ecosystem benefits beyond water quality that are supported by the communities in which projects are located. Doing so will require a new approach and a focus of existing funding sources to bring about this result.

This is exactly what the Whole Watershed Act does. Under the guidance of a State Management Team that brings together relevant stakeholders and permitting entities, projects in five selected watersheds will be coordinated to produce maximum ecological impact, measurable co-benefits, and demonstrate an alternative to Maryland's current approach to "random acts of restoration". The bill also seeks to adapt this approach to different types of watersheds in rural, suburban, and urban areas with their own unique challenges and opportunities.

Finally, the bill will help ensure quality and high standards of design and construction in restoration projects by creating a new licensing board for the people and entities that provide stream restoration services. This is a proven model to ensure practitioners have the requisite knowledge to construct projects in ways that minimize environmental impacts.

Accelerating the cleanup of the Chesapeake Bay and its tributaries requires innovative ideas and coordinated efforts. The Whole Watershed Act takes many of the key recommendations of the CESR report and applies them toward a new and exciting model for waterway improvement.

It is for these reasons that I am encouraging you to vote **in support of passing SB969 the Whole Watershed Act**. Thank you for your time, consideration, and service.

Sincerely,

Bonnie Weissberg, 1704 Mt. Washington Ct., Apt. H, Baltimore, MD 21209

SB 969_LWVMD_FAV_2024.pdf

Uploaded by: Casey Hunter

Position: FAV



Testimony to The SENATE EDUCATION, ENERGY, AND THE ENVIRONMENT COMMITTEE

SB 969 - Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

POSITION: Support

By: Linda T. Kohn, President

Date: March 5, 2024

Since the emergence of the environmental movement in the 1970's, the League of Women Voters has advocated for policies that protect our planet and promote public health. The League believes that water quality is essential for both public and environmental health, and advocates for protecting and improving our water resources.

The League of Women Voters of Maryland **supports SB 969, the Whole Watershed Act**, which would establish a pilot program to take a comprehensive, cooperative, and coordinated approach to identify and repair five impaired watersheds in Maryland. This program would bring all relevant stakeholders to the table in order to accelerate the restoration of impaired watersheds.

Watersheds are interconnected ecosystems, with each component impacting the health and functioning of the whole. Importantly, **SB 969** focuses on maximizing the co-benefits of watershed restoration, like improvements in public health. Low-income communities and communities of color are disproportionately impacted by the public health effects of impaired water quality. **SB 969** would prioritize watershed restoration in communities that experience Environmental Injustice.

The Whole Watershed Act would also establish the Stream Restoration Contractors Licensing Board. This would bolster accountability by ensuring that all contractors working on stream restoration are qualified to do so.

The League of Women Voters of Maryland **strongly urges a favorable report on SB 969.**

ACECMD - Testimony - SB969 - Stream and Watershed

Uploaded by: Chad Faison

Position: FAV



ACEC/MD

AMERICAN COUNCIL OF ENGINEERING COMPANIES/MARYLAND

Hon. Brian J. Feldman, Chairman
Education, Energy, & the Environment
Committee
2 West Miller Senate Office Building
Annapolis, Maryland 21401

Hon. Cheryl C. Kagan, Vice Chair
Education, Energy, and the Environment
Committee
2 West Miller Senate Office Building
Annapolis, Maryland 21401

Organization: The American Council of Engineering Companies/MD (ACEC/MD)

Bill: SB 969 - Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

Position: Support

Chairperson Feldman and Vice-Chair Kagan,

The American Council of Engineering Companies/MD (ACEC/MD) is the representative organization for approximately 90 consulting engineering firms of various sizes across the state. These firms play a crucial role in serving both the public and private sectors by actively participating in the design and development of essential infrastructure such as public water and wastewater systems, bridges, highways, building structures, and environmental projects.

Our organization's member firms collectively employ approximately 7,000 individuals statewide, and approximately forty percent of ACEC/MD's membership is comprised of certified small, minority-owned, or women-owned businesses, reflecting our commitment to diversity and inclusion within the engineering industry. We respectfully **support** this bill.

We support the proposed legislation as it aims to enhance environmental regulations and streamline bureaucratic processes. The legislation strikes a balance by addressing the practicalities of engineering projects while upholding stringent environmental standards and promoting responsible development.

For any comments, inquiries, or further information, please do not hesitate to contact me at cfaison@acecmd.org.

Respectfully,



Chad Faison
Executive Director
ACEC/MD

Arundel Rivers FAV SB969 Whole Watershed Act.pdf

Uploaded by: Elle Bassett

Position: FAV



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**Testimony in SUPPORT of Senate Bill 969 – Stream and Watershed Restoration – Stream
Restoration Contractor Licensing and
Chesapeake and Atlantic Coastal Bays Restoration and Funding
(The Whole Watershed Act)**

Education, Energy, and the Environment
March 5, 2024

Dear Chair Feldman and Members of the Committee,

Thank you for the opportunity to submit testimony in **SUPPORT OF SB969**, on behalf of Arundel Rivers Federation. Arundel Rivers is a non-profit organization dedicated to the protection, preservation, and restoration of the South, West and Rhode Rivers with over 3,500 supporters. Our mission is to work with local communities to achieve clean, fishable, and swimmable waterways for present and future generations.

Senate Bill 969 will take an innovative and targeted approach towards achieving our water quality goals in our Maryland watersheds. The Comprehensive Evaluation of System Response (CESR) report, released in 2023 identified that more attention and work is needed in addressing restoration implementation gaps. This bill will result in five selected watersheds that will prioritize partnerships and co-benefits across multiple geographies and land uses across the state to be chosen for targeted restoration funding and implementation.

Additionally, Senate Bill 969 will create a new licensing board for contractors installing stream restoration services. Stream restoration is one of the best tools in the “restoration toolbox” that we have to both reconnect our eroded stream banks and reduce sediment and nutrient loading downstream. Creating a licensing program will ensure that contractors are implementing quality projects in our watersheds.

Arundel Rivers is favorable to the bill as currently written but we have been made aware of potential amendments and we look forward to reviewing them.

Arundel Rivers Federation strongly supports restoring our local waterways to meet Chesapeake Bay clean up goals and to provide a more fishable and swimmable environment for our communities and we respectfully request a **FAVORABLE REPORT on SB969**.

Sincerely,

A handwritten signature in cursive script that reads "Elle Bassett".

Elle Bassett
South, West and Rhode Riverkeeper
Arundel Rivers Federation

SB 969 Testimony_Michelsen.pdf

Uploaded by: Erik Michelsen

Position: FAV



March 4, 2024

The Honorable Brian J. Feldman
Chair, Education, Energy, and the Environment Committee
2 West, Miller Senate Office Building
Annapolis, MD 21401

Dear Chairman Feldman and members of the committee, on behalf of Anne Arundel County and in concert with the Maryland Association of Counties, I am testifying in support of SB 969, the Whole Watershed Act. Over the last year or so, the sponsors of this bill have thoughtfully engaged stakeholders from across the environmental advocacy, research, and implementation spectrum to devise legislation that created some reasonable, additional guardrails for the industry, but perhaps more importantly, seeks to accelerate the restoration of the Chesapeake and its tributaries.

As you probably already know, despite its Herculean efforts, and dramatic improvements in wastewater sector discharges, Maryland and several other Bay states are still behind on achieving their 2025 Chesapeake Bay Total Maximum Daily Load (TMDL) goals. That said, over the last decade, Maryland has made incredible progress reducing pollution to its local waterways, and has nurtured a restoration industry that has become a national leader in the space. Now is not the time to throw any hurdles in the way of that momentum.

This legislation creates additional financial incentives for local governments, non-profits, and other implementation entities to execute thoughtful, multi-benefit projects that are consistent with the Bay Program's recent CESR (Comprehensive Evaluation of System Response) report which recommends:

“A greater emphasis could be focused on shallow areas of the Bay — places where improvements would likely be seen more quickly and that serve as more important habitats for fish and other aquatic life. Those nutrient reduction efforts should be paired with other projects to improve habitats in those areas”

The reality is, this already is, and has been, where counties throughout Maryland have been operating for over a decade now, focused on local efforts that ultimately aim to improve the health of the Potomac, the Patuxent, the Severn, the Choptank, and other tributaries to the Chesapeake. And it's where we'll continue to focus as long as the State allows us to continue that work in a cost-effective and timely fashion.

Counties are currently working with MDE and other stakeholders to refine an amendment that improves public engagement in these projects and which codifies some of the administrative protections the agency already has in place. We look forward to continuing to work with the State and the bill sponsors to advance a bill that retains Maryland's leadership role in river and Bay recovery. Thanks for your consideration.

Sincerely,

A handwritten signature in black ink, reading "Erik A. Michelsen". The signature is written in a cursive style with a long horizontal flourish at the end.

Erik Michelsen
Deputy Director
Bureau of Watershed Protection & Restoration

Whole Watersheds Sign-on v2 Senate.pdf

Uploaded by: Harry Huntley

Position: FAV

March 5, 2023

The Honorable Brian Feldman, Chair, and
The Honorable Cheryl Kagan, Vice Chair
Maryland Senate Education, Energy, and the Environment Committee
2 West, Miller Senate Office Building
Annapolis, Maryland 21401

RE: SB969 Favorable

Dear Chair Feldman, Vice Chair Kagan, and members of the Committee,

The undersigned organizations are writing to express our support for SB969, the Whole Watersheds Act, as written.

We appreciate the diligent work of the bill's lead sponsor, Senator Elfreth, in establishing a work group many of us participated in to develop this legislation. As environmental advocates, scientists, practitioners, and restoration experts, we believe that this bill will support efforts to restore the health of the Chesapeake Bay and generally advance environmental progress.

In particular, we appreciate how the bill will identify targeted watersheds then empower state agencies and various funding sources to coordinate in rapidly removing those waterways from the impaired streams list. The bill also creates strong licensing requirements to prevent inexperienced actors from engaging in what deserve to be professional efforts to improve sensitive riparian ecosystems.

Our organizations have firsthand experience with stream restoration as one of the most effective techniques to reduce nitrogen, phosphorus, and sediment pollution while creating wildlife habitat and recreational opportunities for all Marylanders. We would oppose the bill if amended by the addition of unscientific restrictions on and duplicative requirements for restoring streams. Legislators should aim to make it easier to improve the environment, not harder.

We encourage you to support SB969 as written, without anti-stream amendments.

Sincerely,

GreenVest



Ecosystem Investment Partners



**Ecosystem
Investment
Partners**

Environmental Policy Innovation Center



ENVIRONMENTAL POLICY
INNOVATION
CENTER

Environmental Quality Resources



ENVIRONMENTAL
QUALITY RESOURCES

Resource Environmental Solutions



SB 969 Whole Watershed Testimony (Favorable_The Na

Uploaded by: Humna Sharif

Position: FAV

Tuesday, March 5 2024

TO: Brian Feldman, Chair of the Senate Education, Energy, and the Environment Committee, and Committee Members

FROM: Humna Sharif, The Nature Conservancy, Climate Adaptation Manager; Cait Kerr, The Nature Conservancy, State Policy Manager

POSITION: Support SB 969 Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

The Nature Conservancy (TNC) supports SB 969 Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act) sponsored by Senators Elfreth and Guzzone. TNC is a global conservation organization working to conserve the lands and waters on which all life depends. In Maryland, our work focuses on delivering science-based, on-the-ground solutions that secure clean water and healthy living environments for our communities, reducing greenhouse gas emissions and increasing resilience in the face of a changing climate.

SB 969 puts forward important provisions and \$20 million in state funding to accelerate the restoration of the Chesapeake Bay, Atlantic Coastal Bays and their watersheds. This legislation would establish the Whole Watershed Fund for the purpose of coordinating multiple Best Management Practices (BMPs), in five whole-watershed restoration projects for five years. SB 969 would establish a state management team comprised of multiple state agencies, scientists, and practitioners to administer the fund. The state management team will select restoration watersheds in a variety of geographies and land-use types, including urban, suburban, and agricultural uses, with priority given to environmental justice communities.

Projects selected for funding through the Whole Watershed Act will demonstrate community involvement and have clear goals that can deliver shallow water habitat improvement results on an expedited timeline. To deliver on these ambitious goals, the Whole Watershed Act requires projects to implement practices that deliver multiple co-benefits for both the ecosystems and communities within the Chesapeake Bay watershed.

Maryland needs this legislation to deliver results for the Chesapeake Bay restoration goals that were set after the signing of the multi-state Chesapeake Bay Agreement in 1983. Over the last four decades, the multi-state partnership has expanded and water quality goals for the Chesapeake Bay have been further refined to meet the needs of a bay in flux. Nevertheless, progress on the water quality goals of the Chesapeake Bay has been slow to materialize, even as the number of projects implemented in the watershed has steadily increased. We are not on track to meet the 2025 timeline that was agreed to by the Bay states in 2010 through the Chesapeake Bay Clean Water Blueprint.

The 2023 Comprehensive Evaluation of System Response (CESR) Report written by over 100 scientists is a deep dive into the challenges and opportunities for change. The report found that the Chesapeake Bay Program's current portfolio of adaptive management processes is inadequate to address the uncertainties and response gaps that need to be filled to achieve water quality goals. The CESR Report cited several opportunities for change including improvements to incentive programs and policies to focus on target areas that generate most pollution, shifting metrics from simply installing practices to achieving pollution reduction results, and expanding the focus of monitoring projects to understand water quality responses to pollution reduction among others. A major recommendation coming from the CESR report was to refine the Bay's adaptive management tools to address its limited capacity and evaluate uncertainties and response gaps. There are opportunities to further reduce nutrients entering the Bay from nonpoint sources, but changes to programs and policies need to be considered – SB 969 is a bill that keeps these core recommendations front and center within its design of a whole watershed approach that will harmonize the needs of communities and natural resources within the Bay.

Our team of conservation practitioners at TNC also endorse the changes to the Waterway Improvement Fund that are incorporated within this legislation, which reinforce the bill's systems-based approach to natural resource management. SB 969's proposed authorization of the Waterway Improvement Fund for beneficial use of dredged material projects compliments the Fund's existing authorized expenses, which include dredging – bringing natural resource impacts and restoration into alignment. In Maryland, the beneficial use of dredged materials is already identified as the priority management practice in the Dredged Material Management Act and has led to large scale restoration projects including Hart-Miller Island, Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island, and the planned Mid-Chesapeake Bay Island Ecosystem Restoration Project. Deploying additional funds to systematically catalyze the beneficial use of dredged material in the state will make it easier for practitioners to implement restoration efforts along Maryland's coastline and further reinforce the whole system strategy of SB 969.

Our increasing knowledge of climate change, its worsening impacts on ecosystems and communities, and a deeper understanding of the intricate relationships held by communities for the land and water resources they live next to are all components that need to be incorporated within Chesapeake Bay Restoration efforts. It is widely understood that conservation outcomes are longer lasting and more effective if projects are designed and implemented collaboratively with communities. However, community members are infrequently included in – or even completely absent from – priority setting for coastal restoration, habitat resilience and climate adaptation programs. The Chesapeake Bay watershed is home to more than 18 million people, and while not all 18 million live in Maryland, our state has opportunity to lead by example and create holistic, inter-connected restoration practices that prioritize collaboration over piece-meal and siloed conservation approaches.

To truly succeed in restoring and protecting the resources of the Bay, we need to widen the lens of conservation and visualize restoration efforts within the broader context of climate change, how it impacts communities, and how decision-making processes need to prioritize benefits for both people and nature. We commend Senators Elfreth and Guzzone for putting forth legislation that is forward looking and inclusive of multiple goals in its vision for the future of the Chesapeake Bay.

For these reasons we strongly urge a favorable report on SB 969.

Testimony in favor of SB969.pdf

Uploaded by: Jerry Kickenson

Position: FAV

Testimony in favor of SB969

Stream and Watershed Restoration - Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

To: Hon. Brian Feldman, Chair, Hon. Cheryl Kagan, Vice-chair and members of the Senate Education, Energy and the Environment Committee

From: Jerry Kickenson

Date: March 4, 2024

I am writing in **favor of Senate Bill 969**, Stream and Watershed Restoration - Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

This legislation will provide the direction, authority – and funding - needed to ensure Maryland establishes a coordinated approach to watershed restoration that is informed by science and data. The bill will establish a pilot program to identify up to 5 impaired watersheds across Maryland. Watersheds selected for the program will be subject to a comprehensive planning and permitting process bringing together all relevant stakeholders to improve water quality on an expedited timeline using a variety of practices. The goal of the program is to make real, measurable progress in water quality on an expedited timeline.

With the very mixed results of the Chesapeake Bay Program, many of us Maryland residents are tiring and frustrated by decades of halting progress on the Bay and watershed cleanup. It is long past time for new approaches. Maryland waters are a priceless resource and a large reason why I live, work and play in the state. Let's get serious about protecting those waters!

I respectfully urge you to reach a **favorable** report for SB969.

Respectfully yours,

Jerry Kickenson

1701 Ladd Street

Silver Spring, MD 20902

SB969_Severn River Association_EEE_FAV.pdf

Uploaded by: jesse iliff

Position: FAV

Committee: Senate Education, Energy, and the Environment

Legislation: SB 969

Position: SUPPORT

Date: March 5, 2024

Dear Chairman Feldman and Members of the Committee:

The Severn River Association (SRA) requests a favorable report for SB 969, which will enhance the practice of Chesapeake Bay restoration in two transformative ways:

- 1) The bill will require licensure for stream restoration contractors to ensure that restoration projects are carried out by qualified professionals who adhere to best practices and ecological principles; and
- 2) The bill creates a new approach to watershed restoration in the State, guided by the best science and leveraging support from local governments, private landowners, and the non-profit sector to generate accelerated, cost-effective, ecologically and socially enhanced outcomes.

The Problem

The Comprehensive Evaluation of System Response (CESR) Report, released May 2023, finds that existing actions to reduce nonpoint sources of nutrients are insufficient to achieve the Total Maximum Daily Load (TMDL) goals for the Bay, and that there are significant gaps between the expected and observed pollutant reductions and water quality responses. The report notes that nutrient load reductions have not produced the expected level of improvement in estuary water quality, especially in the deep channel habitat, and that climate change and other factors may offset or complicate the water quality response. The report suggests that a tiered approach to TMDL implementation should prioritize the habitats and regions that have the greatest potential for living resource benefits—the “shallow water habitat” defined in SB969.

Restoration projects can deliver considerable benefits to aquatic resources in the State, but current funding, permitting, and outreach constraints often result in local governments, restoration contractors, private landowners and non-profit partners taking a more opportunistic approach to project identification and construction. In other words, there is a need for more strategic, coordinated, and reliably funded planning and execution of restoration work. That is what SB969 delivers.

The Bill's Solution

As noted above, SB969 has two main components, ensuring that restoration professionals adhere to defined standards of practice and care for the living resources they work within, and launching a pilot program to enhance and accelerate positive restoration outcomes within specific tributaries of the Bay.

Restoration Professional Licensing

The licensure provisions of this bill ensure that restoration work in sensitive areas like streams and wetlands be done with the utmost care for the natural resource in question. Every two years, practitioners will be required to demonstrate adequate insurance, resolution of any regulatory violations, completion of 12 hours of continuing professional education, and technical knowledge via written exam. Currently, no special licensure is required for restoration professionals, notwithstanding the ecologically sensitive areas within which these firms do their work, and the development of continuing professional education requirements to maintain licensure assures that the firms competing in this space have the benefit of current science and ecological best practices as part of their ability to do business. In other words, the licensure provisions in this bill will advance the stated goals of watershed restoration work by ensuring the companies doing this restoration work are scientifically and technically proficient with it.

Targeted Restoration Funding

The Whole Watershed Fund established in SB969 will deliver targeted and strategic funding to specific watersheds in the State to accelerate and enhance restoration efforts by ensuring broad stakeholder involvement, cost-effective project identification, and that funding is directed to watersheds with the best potential to show rapid systemic improvement.

The nature of restoration funding is often tied to disparate grant programs which come from different sources with different priorities (e.g. stream restoration vs. planting trees vs. small-scale rain gardens vs. riparian buffer plantings, etc.) Each of the various types of restoration best management practices (BMP) fill important roles in a watershed's health, but far too often there are geographic or temporal gaps between them which prevent the diverse BMPs from complementing one another or reaching their full potential. For example, if a watershed organization like the Severn River Association seeks to improve water quality in a specific creek on the river, we may identify a need to restore a section of stream, and also identify areas that flow into that stream where trees could be planted and small-scale stormwater management projects can help reduce flow to the stream in the first place. However, existing disparate funding sources may not all apply to the various projects in that watershed, and so considerable time and expense can be lost in the sequencing of the various BMP grant applications throughout a given fiscal year to perform all the potential work. The Whole Watershed Fund and the projects it can coordinate will help alleviate this problem and accelerate the implementation of restoration projects in a holistic way, all while ensuring the contractors performing the work are appropriately trained and licensed.

Conclusion

Senate Bill 969 will demand higher standards of performance by practitioners of environmental restoration and demonstrate the efficacy of a holistic approach to watershed restoration in a targeted and strategic manner. The Severn River Association urges a favorable report.

Respectfully submitted,



Jesse L. Iliff
Executive Director
Severn River Association
jesse@severnriver.org

Audubon.SB969.pdf

Uploaded by: Jim Brown

Position: FAV



Maryland Office
2901 E. Baltimore St
Baltimore, MD 21214

March 4, 2024

To: Chairman Feldman and members of the Maryland Senate Committee on Education, Energy and the Environment

From: Jim Brown, Policy Director, Audubon Mid-Atlantic

Subject: Favorable Testimony for Maryland Senate Bill 969 – The Whole Watershed Act

Audubon Mid-Atlantic submits this testimony in support of Senate Bill 969. Audubon Mid-Atlantic is the regional office of National Audubon Society, representing over 35,000 Marylanders who advocate for the protection of birds, bird habitat, and policies aiming to protect both birds and human communities in the face of increasing environmental challenges, habitat loss, pollution, and climate change. We use science and community building to work with partner organizations, government agencies, and local communities to protect birds and the places they need to survive now, and into the future. SB 969 will bring increased resources and new innovative approaches to how Maryland protects and enhances the watersheds which both our bird and human communities rely on.

From our Atlantic shoreline and Chesapeake Bay marshes to our urban parks and western Maryland mountains, birds in Maryland are under threat. Maryland is made up of interconnected watersheds which provide critical habitat to migrating and resident bird species. Audubon works in watersheds across the state in collaboration with local communities, state and federal agencies, and partner organizations. Our watershed conservation work ranges from protecting upland forests to planning and implementing saltmarsh and island restoration projects on the lower Chesapeake Bay and in our Atlantic Coastal Bays. Birds tell us there is a need for innovative and new strategies to focus resources on entire watersheds, rather than piecemeal approaches. The methods outlined in SB 969 will give the state, local communities, and conservation practitioners the ability to look at the big picture of watershed health and target appropriate solutions with better outcomes for the Chesapeake Bay and other watersheds throughout the state.

One of SB 969's new strategies, refocusing on shallow water and shallow water habitats will bring significant attention and collaboration to restoring Maryland's iconic tidal marshes in the Chesapeake and sand islands in the coastal bays. Audubon is on the ground helping to plan large scale restoration efforts in these places. The barriers to funding and permitting, along with the traditional small scale of restoration efforts is not allowing conservation work to keep pace with the urgency of the threats our tidal areas face with climate change, pollution, and water quality degradation. We can attest to the need for innovation and increased collaboration as outlined in SB 969 to support this work.

These special places not only provide vital habitat for iconic Maryland birds, but they also filter water, provide marsh grasses which remove carbon from the atmosphere, and buffer vulnerable towns from storm surges and rising sea levels. Investing in our shared watersheds, especially tidal and coastal zones has co-benefits that will protect Maryland's special ecosystems, economies, and watersheds. SB 969 will

help us think big and improve access to restoration resources, increase agency collaboration, and focus on our important watersheds to improve the health of our shared ecosystems.

Science tells us birds are in decline due to habitat loss and climate change. 1/3 of all Maryland bird species experienced significant population declines in the past 50 years. Through improved monitoring and a new suite of conservation tools SB 969 will enable Maryland to stay ahead of this trend and bend the bird curve back by tailoring restoration and conservation practices in our watersheds to improve the health of whole ecosystems, rather than small sections of a stream or river. It will continue to hold Maryland up as a leader in ecosystem preservation, climate action, water quality, and the protection of birds now and in the future.

Audubon Mid-Atlantic respectfully urges a favorable review of this legislation.

Thank You,

Jim Brown
Policy Director
Audubon Mid-Atlantic
Jim.brown@audubon.org

SB 969 Testimony.pdf

Uploaded by: Jodi Rose

Position: FAV



*Forming Faithful Stewards,
Caring for Sacred Waters*

PO Box 6791
Annapolis, MD 21401

March 5, 2024

Chairman Brian Feldman and Members of the Education, Energy, and the Environment Committee
2 West
Miller Senate Office Building
Annapolis, Maryland 21401

Senate Bill 969 – Whole Watersheds Act

Position: **FAVORABLE**

Dear Chairman Feldman and Committee Members:

On behalf of Interfaith Partners for the Chesapeake (IPC), I write to urge your **support of Senate Bill 969**, the Impact of Environmental Permits and State Agency Actions bill.

Water is life. In all religions, water is central to sacred rituals and symbolic of renewal and interconnectedness. Waters of the Chesapeake, including the rivers and streams in our communities, are sacred, too. They are central to our communities, provide recreation, are relied upon for sustenance by some of our poorest neighbors, and are habitat for countless species and aquatic plants. We have a moral responsibility to care for these waters and ensure future generations can likewise reflect on the beauty and sacredness of these waters.

Maryland has invested billions of dollars over many decades to restore healing to these sacred waters. However, recent studies have concluded that these efforts will still fall short of water quality goals. **We need to work smarter, not harder.** Congregations over the last 10 years have installed hundreds of projects on their properties to help restore the watershed. But these “random acts of restoration” might not be having the impact they could, given grant funding limitations and uncoordinated restoration efforts at the watershed scale.

Senate Bill 969 will direct state funding toward geographically-focused coordinated efforts among a wide variety of landowners to accelerate watershed restoration efforts. Imagine a congregation installs a rain garden to reduce stormwater pollution from their property...and, also, the next door school does the same, and the neighborhood abutting the congregation does the same, and the businesses across the street as well. Suddenly, a strategic effort to address pollution at scale yields quicker improvements than that one congregation alone. **Senate Bill 969 will also prioritize efforts in environmental justice communities**, which is cornerstone in faith-based environmental advocacy.

IPC urges your FAVORABLE support of Senate Bill 969 to create a process and funding for concentrated watershed restoration efforts at the whole-watershed scale. IPC and our partners will continue to do our part to inspire the 5,000 congregations in Maryland to be good stewards of the watershed, and we ask Maryland to support this legislation that will test more strategic ways for accelerating restoration of these sacred waters. Hopefully in our lifetime, it will be **safe** to conduct sacred water rituals in actual rivers. Let’s work smarter together to achieve this dream.

Sincerely,

A handwritten signature in cursive script that reads "Jodi Rose". The signature is written in black ink and is positioned above the printed name.

Jodi Rose

Executive Director

Interfaith Partners for the Chesapeake

PO Box 6791

7 Willow Street, 2nd Floor

Annapolis, MD 21401

SB969_Whole Watershed Act_EEE_CJW FAV.pdf

Uploaded by: Laurie McGilvray

Position: FAV



Committee: Education, Energy and the Environment
Testimony on: SB0969- Stream and Watershed Restoration - Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)
Organization: Maryland Legislative Coalition Climate Justice Wing
Submitting: Laurie McGilvray, Co-Chair
Position: Favorable
Hearing Date: March 5, 2024

Dear Chair and Committee Members:

Thank you for allowing our testimony today in support of SB0969. The Maryland Legislative Coalition (MLC) Climate Justice Wing, a statewide coalition of nearly 30 grassroots and professional organizations, urges you to vote favorably on SB0969.

In the 2023 report titled [*Comprehensive Evaluation of System Response*](#), the Science and Technical Advisory Committee to the Chesapeake Bay Program recommended restoration investments in smaller geographies as more likely to be responsive in a shorter amount of time and provide multiple ecosystem benefits beyond just water quality. The Whole Watershed Act is an answer to the current “random acts of restoration” approach. It will better focus existing funding on fewer areas by bringing together relevant stakeholders and permitting entities to select projects in five watersheds. The projects selected will be coordinated to produce maximum ecological impact and measurable co-benefits. In addition, the bill will help ensure high standards of design and construction for restoration projects by creating a new licensing board for the people and entities providing stream restoration services.

The Whole Watershed Act is an exciting step forward to improving restoration effectiveness in Maryland and we request a FAVORABLE report on SB0969.

350MoCo
Adat Shalom Climate Action
Cedar Lane Unitarian Universalist Church Environmental Justice Ministry
Chesapeake Earth Holders
Chesapeake Physicians for Social Responsibility
Climate Parents of Prince George's
Climate Reality Project
ClimateXChange – Rebuild Maryland Coalition
Coming Clean Network, Union of Concerned Scientists

DoTheMostGood Montgomery County
Echotopia
Elders Climate Action
Fix Maryland Rail
Glen Echo Heights Mobilization
Greenbelt Climate Action Network
HoCoClimateAction
IndivisibleHoCoMD
Maryland Legislative Coalition
Mobilize Frederick
Montgomery County Faith Alliance for Climate Solutions
Montgomery Countryside Alliance
Mountain Maryland Movement
Nuclear Information & Resource Service
Progressive Maryland
Safe & Healthy Playing Fields
Takoma Park Mobilization Environment Committee
The Climate Mobilization MoCo Chapter
Unitarian Universalist Legislative Ministry of Maryland
WISE

SB 0969 CWRP Testimony.pdf

Uploaded by: Liam O'Meara

Position: FAV



Hon. Brian Feldman
Chairman, Education, Energy, and the Environment
2 West
Miller Senate Office Building
Annapolis, Maryland 21401

Chairman Feldman, Vice-Chair Kagan and members of the Committee,

The Chesapeake Watershed Restoration Professionals (CWRP) is a coalition of the primary businesses that implement watershed practices to improve the health of the Chesapeake Bay. Altogether, we comprise thousands of Marylanders employed in careers that invest in the environment here on the ground in the Bay region; Engineering, ecology, project development, and construction are all critical elements to a thriving Chesapeake Bay, and we do it all.

As such, CWRP supports SB 0989, and we are grateful for the renewed focus on comprehensive watershed restoration. CWRP believes that the pilot programs launched by this bill would steer resources toward specific goals in specific watersheds that will demonstrate the effectiveness of BMPs from stream restoration to riparian buffer management.

Additionally, CWRP believes that whoever has the privilege of working in resources as sensitive of our streams should be qualified to do so and should be held to high standards. Licensing these professionals would help the restoration community by keeping standards up to a level appropriate to the needs of this environment. We support this effort, even though the licensing of stream restoration contractors would put a burden on our members that doesn't currently exist.

That said, we are concerned about some contents of the proposed amendments we've seen and would oppose adding any duplicative or burdensome public notice, engineering, or administrative requirements that would add cost to taxpayers and delay an already lengthy permitting process. We believe that more transparency in permitting is a good thing and support a more transparent and accessible permitting platform to inform the public. We also support MDE's Stream Restoration Checklist as a useful process in guiding stream restoration as a practice.

We thank you and encourage you to support SB 0989 as written.

Sincerely,

Liam O'Meara,
President

SB 969 - National Aquarium - Favorable.pdf

Uploaded by: Maggie Ostdahl

Position: FAV



Date: March 5, 2024

Bill: SB 969 – Stream and Watershed Restoration - Whole Watershed Act

Position: Support

Dear Chair Feldman and Members of the Education, Energy and the Environment Committee:

The National Aquarium respectfully requests a favorable report for **Senate Bill 969 - Stream and Watershed Restoration - Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)**, which will identify priority watersheds and focus restoration investments in those areas to improve effectiveness and ecological impact.

One of the National Aquarium's three overarching conservation goals is to save wildlife and habitats. We work with communities and partners on restoration efforts in several areas around the state and throughout our Chesapeake Bay watershed. Although there has been important progress in Maryland and around the watershed, collectively we are not on track to meet our water quality goals.

The Whole Watershed Act is a timely policy response to key findings and recommendations from the multi-year Comprehensive Evaluation of System Response (CESR) report from the Chesapeake Bay Program Scientific and Technical Advisory Committee¹, which points to the need for new strategies and resource allocations to effectively improve the health of the Bay in the face of ongoing challenges, including population growth, changes in land use, and climate change. CESR also makes clear that restoration efforts to improve water quality can achieve more co-benefits for wildlife and people.

This bill will coordinate work and investment in restoration efforts under the guidance of a State Management Team that brings together stakeholders and permitting entities with prioritization of environmental justice communities. The approach can be adapted for the unique needs of rural, suburban, and urban watersheds, and we encourage its implementation to account for and build upon existing community restoration efforts in the selected watersheds.

We believe that the legislation will enhance watershed restoration, increase stakeholder involvement and lead to healthier and more resilient watersheds for people and wildlife.

We urge the Committee to issue a favorable report on SB 969.

Contact:

Ryan Fredriksson
Vice President, Government Affairs
410-385-8276
rfredriksson@aquarium.org

Maggie Ostdahl
Sr. Conservation Policy Manager
410-385-8275
mostdahl@aquarium.org

¹ Scientific and Technical Advisory Committee (STAC) 2023. Achieving water quality goals in the Chesapeake Bay: A comprehensive evaluation of system response (K. Stephenson & D. Wardrop, Eds.). STAC Publication Number 23-006. Available: <https://www.chesapeake.org/stac/cesr/>

Support - SB969- Whole Watershed.pdf

Uploaded by: Marisa Olszewski

Position: FAV



Kim Coble
Executive Director

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Thomas

March 5, 2024

SUPPORT: SB969 - Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

Chair Feldman and Members of the Committee:

Maryland LCV supports SB969 - Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act) - and we thank Senator Elfreth and Chairman Guzzone for their continued leadership for Chesapeake Bay restoration.

As we come to 2025 knowing we will not achieve the goals set by the Chesapeake Bay Partnership more than a decade ago, it is imperative we take strides to reassess and alter our strategies for bay restoration and the health of the waters across the Chesapeake Bay watershed. In Maryland, we have successfully addressed major nutrient pollutants from point sources, especially large wastewater treatment plants, but our ability to effectively address nonpoint source pollution - especially from agricultural land use and urban stormwater - has been frustratingly less effective. Efforts to reduce nonpoint source pollutants have been scattered across large geographies, rather than targeted into single systems, contributing to missing targets for water quality. SB969 addresses the need to adjust our strategy for watershed restoration across the state. The legislation establishes a pilot program to serve as a proof of concept as we work in a more coordinated and targeted way to effectively achieve our goals for watershed-wide restoration.

The pilot program in SB969, the Whole Watershed Act, will identify and target five watersheds in Maryland on the HUC-8 scale, the scale used for designating waters as impaired under the Clean Water Act. This watershed scale is also large enough to need extra effort to coordinate across it; and within this size watershed, many smaller, feeder streams will provide the opportunity for demonstrating meaningful results. This program takes recommendations and lessons learned from two sources: (1) the Comprehensive Evaluation of System Response (CESR) report the Scientific and Technical Advisory Committee to the Chesapeake Bay Program released in May 2023, and (2) a successful program to rapidly moved streams from impairment to health in a watershed in Lancaster County, Pennsylvania.

From the CESR report, the Whole Watershed pilot program will target restoration efforts and shift the emphasized program goals from water chemistry in the deepest channels of the mainstem of the bay to shallow waters - building habitat and providing connections to clean water for people in the places where they live and recreate.

From the watershed restoration program, launched in 2018 with a group called the Lancaster Clean Water Partners, Whole Watershed takes the lesson to use fine-scale data and scientific analysis for a targeted approach while also incorporating community coordination to address community needs for things like reducing flooding risks and providing more fishing and hunting habitat while also improving water quality.

SB996 centers people and community needs into the work of watershed restoration. It ensures community voices are included in the design and coordination of restoration practices by requiring co-benefits are included in restoration plans, additional community concerns will be addressed and the upland treatments most important to achieving sustainable water quality improvements will be prioritized. Additionally, equity is built into the plan, which requires that at least two of the five watersheds chosen for the pilot program must benefit overburdened or underserved communities. These provisions make this the right program for right now.

In addition to the pilot program for watershed restoration, SB969 establishes an important licensure program for stream restoration professionals. The program uses a similar structure to that already in place for marine contractors in Maryland and will help to ensure those working in sensitive aquatic environments have both a basis of knowledge about the ecosystems in which they work and maintain an understanding of scientific developments relevant to their field.

SB969 is an important bill, responding to the most up to date science and current policy recommendations to advance Chesapeake Bay restoration and improve Maryland's efforts for achieving water quality and health within our watersheds. Maryland LCV urges a favorable report on this bill.

Conway Testimony_ SB0969_ Whole Watershed Act_3.5.

Uploaded by: Mark Conway

Position: FAV



**House Environment and Transportation Committee
Testimony by Mark Conway
Executive Vice President of External Affairs
Chesapeake Conservancy
March 5, 2024**

Chair Korman, Vice-Chair Boyce, and Committee Members, thank you very much for the opportunity to provide testimony today.

For the record, I am Mark Conway, a Maryland resident, and Executive Vice President of External Affairs for Chesapeake Conservancy.

I am here to voice our strong support for the passage of SB 0969, the Whole Watershed Act, because we know that it will work. We've seen it work with our neighbors to the north, the Commonwealth of Pennsylvania.

Starting in 2019, partners including local, state, and federal governments, conservation districts, nonprofits, universities and others envisioned a rapid stream delisting program as a way to make the most of limited resources.

In these communities, there was already so much focus on the EPA mandate around the impaired waters list in the Integrated Water Quality Report--this strategy doubles down on those efforts while achieving the nutrient load reductions we need to clean up the Bay.

We use high-resolution data to focus in on headwaters where our collective work over 2-5 years to restore farmland could make a measurable difference by the year 2030.

The priorities and strategies are unique to each stream, driven by local values and capacity.

And we mean local--these streams are only 1-5 miles, narrowing in on about 5-15 priority farms.

The planning process is pretty straightforward and intuitive--come up with an outreach strategy and then a plan and budget for the most cost-effective BMPs to address the impairment.

We're building that queue and aggregating these projects into regional grant proposals like the two NRCS RCPP awards totaling over \$17M across central PA and Lancaster for stream delisting.

We're doing in-stream monitoring and in PA much like in Maryland, the goal is tangible--the stream is either on the impaired list or it's not, and that's based on the aquatic insect communities and physical habitats to our streams.

We're now working across 56 streams in seven Pennsylvania counties and the 2024 draft Integrated Water Quality Report is showing preliminary delistings across four of our streams.

The interest from the state of Maryland shows that just four years later, it's now possible to scale this across the Bay watershed, expanding our measures of success to reflect priorities beyond agricultural streams and including a variety of co-benefits relevant to our Maryland communities.

Thank you for listening.

Testimony of Dr Mark Southerland Vernal Pool Partn

Uploaded by: Mark Southerland

Position: FAV



HB1165 and SB969 The Whole Watershed Act

TESTIMONY OF DR. MARK SOUTHERLAND -- Favorable

I received a Ph.D. and Smithsonian Fellowship in freshwater ecology and have consulted for federal, state, and local agencies on water resource issues for 30 years. I am the founder of Vernal Pool Partners and have served with the Maryland Academy of Sciences' Science Council, Maryland Water Monitoring Council, Howard County Environmental Sustainability Board, Howard County Conservancy, Patapsco Heritage Greenway, and Safe Skies Maryland.

Maryland is not on track to meet its 2025 Chesapeake Bay Restoration Goals

The Comprehensive Evaluation of System Response (CESR) Report, released in May 2023 and written by 100 scientists from across the watershed, makes recommendations to improve results, that include:

- Refocusing on shallow water and shallow-water habitats.
- Connecting water quality with how people interact with the resource.
- Better targeting interventions as Maryland's restoration structure currently does not prioritize the best combination of Best Management Practices (BMPs).

The Whole Watershed Act will ground test a new holistic approach to restoration by

- Prioritizing \$20M in state funding toward five whole watershed restoration projects for five years.
- Selecting watersheds that represent different geographies and land use types with a priority for Environmental Justice communities. Selected watersheds will demonstrate community involvement and the ability to demonstrate progress on a relatively expedited timeline.
- Requiring practices that provide multiple co-benefits to support the health of the whole watershed and community.
- Establishing a State Management Team consisting of multiple state agencies, local experts, and more to select projects, monitor and support progress, and expedite the permitting process.
- Creating a new certification for practitioners who complete restoration projects to uphold standards and ensure quality.

The Time is Now. If we wait, we will continue to implement less-effective restoration projects and fall further behind our goals of pollution reduction and biodiversity improvement.

A handwritten signature in black ink, appearing to read "Mark Southerland", is written over a light blue horizontal line.

Vernal Pool Partners

SB 969_Maryland Catholics for Our Common Home_FAV.

Uploaded by: Robert Simon

Position: FAV



Maryland Catholics for Our Common Home

Responding to the cry of the Earth
and the cry of the poor.

Hearing before the Senate Education, Energy, and the Environment Committee
Maryland General Assembly
March 5, 2024

Statement of Support (FAVORABLE) of Maryland Catholics for Our Common Home on SB 969, Whole Watershed Act

Maryland Catholics for Our Common Home (MCCH) is a lay-led organization of Catholics from parishes in the three Catholic dioceses in Maryland: the Archdiocese of Baltimore, the Archdiocese of Washington, and the Diocese of Wilmington. It engages in education about, and advocacy based upon, the teachings of the Catholic Church relating to care for creation and respect for all life. MCCH is a grassroots voice for the understanding of Catholic social teaching held by a wide array of Maryland Catholics—over 450 Maryland Catholics have already signed our statement of support for key environmental bills in this session of the General Assembly—but it should be distinguished as an organization from the Maryland Catholic Conference, which represents the public policy interests of the bishops who lead these three dioceses.

MCCH would like to express its strong support for passage of Senate Bill 969, the Whole Watershed Act. The bill provides funding to restore five watershed watersheds around the state. Diverse communities will benefit, and the health of the Chesapeake Bay will also be protected. As Catholics, we view care for God’s creations, including the waterways. Care for vulnerable groups in society is an integral part of our faith, as taught by Pope Francis in his encyclical, *Laudato Si’: On Care for Our Common Home*¹ (2015), and in his more recent apostolic exhortation, *Laudate Deum*² (2023).

In *Laudato Si’*, Pope Francis also draws attention to how the scarcity of clean water will lead to increases in the cost of food and products which depend on its use (*Laudato Si’*, no. 31)—all of which will impact the poor and most vulnerable more adversely.

Senate Bill 969, the Whole Watershed Act, is responsive to Pope Francis’s teaching that social problems “must be addressed by community networks and not simply by the sum of individual deeds.” (*Laudato Si’*, no. 219) The Whole Watershed Act does so through a more expansive and comprehensive planning and permitting approach. In addition, and again in keeping with a central theme in *Laudato Si’*, the Whole Watershed Act prioritizes Environmental Justice communities. We believe that the Whole Watershed Act will move the State of Maryland forward in positive ways. From our Catholic faith perspective, this bill contributes to the restoration of our common home, promotes the common good, and helps meet the demands for social justice.

We strongly urge your support of Senate Bill 969, the Whole Watershed Act. Thank you for your consideration of our views and our respectful request for a **favorable** report on Senate Bill 969.

¹ The English text of the encyclical, to which the paragraph numbers in the parentheses refer, can be found at: https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html.

² The English text of the apostolic exhortation, to which the paragraph numbers in the parentheses refer, can be found at: https://www.vatican.va/content/francesco/en/apost_exhortations/documents/20231004-laudate-deum.html

SB 969 - Elfreth Testimony.docx.pdf

Uploaded by: Sarah Elfreth

Position: FAV

SENATOR SARAH ELFRETH
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Budget and Taxation Committee

Subcommittees

Capital Budget

Pensions

Chair, Public Safety,
Transportation, and Environment

Joint Committee on the Chesapeake and
Atlantic Coastal Bays Critical Area

Chair, Joint Subcommittee on
Program Open Space/Agricultural
Land Preservation

THE SENATE OF MARYLAND
ANNAPOLIS, MARYLAND 21401

March 5, 2024

Testimony in Favor of SB 969
Whole Watershed Act

Chairman Feldman, Vice-Chair Kagan, and members of the Education, Energy, and the Environment Committee,

I respectfully request a favorable report of Senate Bill 969, the Whole Watershed Act, to shift Maryland's focus to whole watershed restoration, incentivize innovative practices, improve project quality, and responsibly fast track environmental restoration work across Maryland. This legislation ensures that we can be bolder, go bigger, and build smarter projects where they will have the greatest impact.

In May 2023, the Scientific and Technical Advisory Committee of the Chesapeake Bay Program published the Comprehensive Evaluation of System Response (CESR) report¹. Authored by Dr. Denise Wardrop, Dr. Kurt Stephenson, and over 80 scientists from across the watershed, the CESR report investigated the progress, successes, and issues related to the health of the Chesapeake Bay. The report noted that while there has been progress made in the decades since the first Bay agreement, our efforts are falling short in meeting our goals; it estimates that 27% of the Chesapeake Bay area met water quality standards in 1985 - that number has only reached 30% by 2020. This lack of progress - while complicated by climate change and increased population - is reflected in regular C and D grades from the EPA's Chesapeake Bay Program.

While the findings of the CESR report are alarming, Maryland's environmental community responded with great urgency to the opportunities ahead. The report includes recommendations to ensure policy matches with these scientific findings. The authors recommend a greater focus on shallow waters, their habitats, and how people interact with the resource as well as better targeting of and incentivizing interventions. Neighboring states are already implementing practices that match these policy recommendations, including central Pennsylvania's rapid delisting program which has shown success².

Maryland's current processes and policies can be best described as "random acts of restoration", lacking coordination of multiple Best Management Practices (BMPs), co-benefits, and holistic whole watershed interventions. Groups involved in current restoration practices expressed frustration with the uncoordinated, overly onerous, and unreasonably lengthy permitting processes which negatively impact progress on more ambitious projects. Under the current structure, Maryland is putting forth big investments with little results. The Whole

¹ <https://www.chesapeake.org/stac/wp-content/uploads/2023/05/CESR-Executive-Summary.pdf>

² <https://www.chesapeakeconservancy.org/precisonconservationinpa/conserves/delisting-ag-impaired-streams-in-central-pa>

Watershed Act is the result of intense, months-long collaboration amongst legislators, State agencies, environmental advocates, restoration contractors, and more. It demonstrates what is possible when holistic, large-scale, targeted interventions are properly prioritized and incentivized, allowing for stronger State-wide coordination and innovation in practices.

The Whole Watershed Act targets watersheds which present opportunities for the most significant impact on an expedited timeline.

The current “random acts of restoration” approach to restoration in Maryland has resulted in major State funding allocated with minor results. The Whole Watershed Act empowers the State to move with intention and fund projects in watersheds with the greatest opportunity for impact. Projects under this program are selected with the consideration of current environmental factors, potential for achieving delisting status, proximity to Environmental Justice communities³, and more. The Whole Watershed Act allocates existing funding for environmental restoration to priority watersheds, ensuring that our State funds are being utilized and leveraged for the greatest possible impact and across diverse communities in Maryland.

The Whole Watershed Act establishes a State Management Team to select projects, monitor and support progress, and expedite permitting.

Coordination among the various actors in watershed restoration is critical to the success of projects. Maryland currently has a siloed structure for permitting, approval, and technical support between and amongst State, local, and federal agencies. This leads to years-long permitting timelines, unnecessarily delaying intervention and exacerbating the issues projects seek to address. The Whole Watershed Act cuts the red tape and brings together actors critical to the success of holistic watershed restoration projects. SB 969 establishes a State Management Team (SMT) consisting of State agencies, local governments, and nonprofit organizations. The SMT reviews applications, approves projects, designates money from the appropriate funding sources, monitors progress, provides technical support, and ensures that permits are expedited for projects under the program.

The Whole Watershed Act incentivizes multiple co-benefits to support the health of the whole watershed and community.

The CESR report explained the long-term impact of policies which center Total Maximum Daily Loads (TMDL)⁴ as the primary metric for success in waterway restoration. The authors of the report recommended a shift in policy to expand interventions to a variety of co-benefits which directly and indirectly impact the health of the watershed and surrounding communities. The Whole Watershed Act indicates co-benefits that are high priority for Maryland’s watersheds, including but not limited to the creation or restoration of wildlife habitat, restoring aquatic resources such as freshwater mussels and oysters, carbon sequestration, climate change resilience and adaptation, local employment opportunities, improving and protecting public health, and increasing public access to waterways. Additionally, the Whole Watershed Act indicates as a high priority the protection of trees and native plants. Projects must demonstrate a commitment to implementing multiple co-benefits related to the watershed and surrounding communities, ensuring that State funding is leveraged for the greatest possible impact.

The Whole Watershed Act creates a new certification for developers and contractors who complete restoration projects to uphold standards and ensure quality.

³ https://mde.maryland.gov/Environmental_Justice/Pages/Landing%20Page.aspx

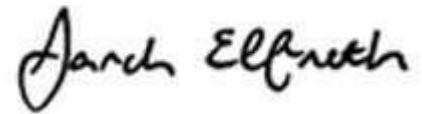
⁴ <https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls#:~:text=A%20TMDL%20is%20the%20calculation,standards%20for%20that%20particular%20pollutant.>

In 2010, legislation passed by the Maryland General Assembly and signed into law by the Governor established the Marine Contractors Licensing Board under Chapter 286⁵. Managed by Maryland Department of the Environment (MDE), this Board establishes, oversees, and issues licensure for marine contractors and requires that marine contracting work be conducted by licensed professionals. The Whole Watershed Act builds on the success of this program by establishing a Stream Restoration Contractors Licensing Board under which contractors conducting watershed restoration practices must be licensed in order to conduct restoration work in Maryland. This will ensure the highest quality contractors are planning and implementing restoration work in our State and empower MDE to hold bad actors accountable for harmful or deceptive practices.

The Whole Watershed Act is a beacon of what is possible, bringing all levels of government to the table to fund innovative, holistic projects on an expedited timeline. I am proud to have the support of the Governor, Department of Natural Resources, Maryland Department of the Environment, Maryland Department of Agriculture, the Chesapeake Bay Foundation, Chesapeake Conservancy, the Chesapeake Bay Commission, and countless other organizations for the Whole Watershed Act.

I urge a favorable report on Senate Bill 969.

Sincerely,

A handwritten signature in black ink that reads "Sarah Elfreth". The signature is written in a cursive, flowing style.

Senator Sarah Elfreth
District 30

⁵ <https://mde.maryland.gov/programs/water/wetlandsandwaterways/pages/marinecontractors.aspx>

SB0969 Favorable Written Testimony - MEPPN.pdf

Uploaded by: Walter Tucker

Position: FAV



TESTIMONY IN SUPPORT OF SB0969

Stream and Watershed Restoration - Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

FAVORABLE

DATE: March 5, 2024

TO: Senator Brian Feldman, Chair; Senator Cheryl Kagan, Vice Chair and members of the Education, Energy, and the Environment Committee

FROM: Walter Tucker, Member, Maryland Episcopal Public Policy Network

DATE: March 5, 2024

Thank you for the opportunity to testify in support of Senate Bill 0969. The Episcopal Church endorses responsible stewardship of God's creation. Our standard of living has led to a degradation of our sacred earth, and we have a moral responsibility to work for restoration of the environment, including working towards clean water.

Restoration efforts are needed for our watersheds that feed the Chesapeake Bay. Just looking at Anne Arundel County, according to the Anne Arundel County Watershed Stewards Academy, all 12 of Anne Arundel County's watersheds are considered "impaired". This bill concentrates funding and expertise on up to five watersheds across Maryland with a goal of restoring those watersheds and removing those watersheds from the Impaired list on an expedited timeline.

All creation is a gift from God that we need to nurture. This bill promotes environmental stewardship and care for our local waterways and the Chesapeake Bay.

The Diocese of Maryland requests a favorable report.

Cangelosi.SB798.FAV.pdf

Uploaded by: Allegra Cangelosi

Position: FWA

SB 798- Stream Restoration Contractors Licensing Board, Stream Restoration Contractors, and Stream Restoration Project Requirements

COMMITTEE – Education, Energy and the Environment

Testimony on SB 798, Hester

POSITION – FAV

Hearing Date - March 5, 2024

Good afternoon. My name is Allegra Cangelosi, a Maryland citizen of 35 years, and a retired environmental professional focused on the Great Lakes. Thank you for this opportunity to testify on SB798, introduced by Senator Hester.

The primary goal of SB 798 is to improve the integrity of Maryland stream restoration contract services by making contractors accountable to a Licensing Board. SB 798 creates a stream restoration licensing board, intended to reduce “fly-by-night” operators engaging in stream work. It also provides for significant public participation in stream restoration processes, a commendable improvement. However, as currently drafted, the bill would, perhaps unintentionally, will make the most dramatic “tear it up and rebuild it” approaches to stream work the default (and perhaps only) approaches in Maryland. Such approaches are definitively not beneficial for most (if any) Maryland streams, even for severe storm water management. The result will be continued unnecessary, profound, and tragic natural resource damage in Maryland. **Due to this problem, my testimony is in support only with amendment, and request that the bill sponsors carefully consider this concern.**

Background:

Maryland’s streams are complex ecosystems which deliver critical ecological and human health services to Maryland communities. These services include storm water management, water filtration, carbon sequestration, biodiversity habitat, venues for recreation and natural beauty. As we are all aware, over time Maryland streams have become severely degraded by heavy run-off from concentrated development, chemical pollution, and climate change.

Maryland’s “stream restoration” program was largely designed to address our state’s storm water and nutrient pollution problems degrading the state’s valuable stream systems. Unfortunately, though Maryland’s Accounting Guidance provides for a range of approaches which could be employed for this purpose, they assign the term “stream restoration” solely to the most destructive and least reliable methods available, focused on stream channel reinforcement or replacement with or without ecological considerations. These “tear it up and rebuild it” approaches entail wholesale destruction of the irreplaceable stream ecosystems. Further, Maryland’s mature trees in these stream valleys are cleared to give heavy construction machinery access. Yet the stream bed flora and fauna, and upland trees are what make Maryland’s stream systems function. There is growing scientific evidence that these disruptive interventions, even with “tree replantings”, harm streams as ecosystems in a manner they may never recover from. Recent studies also show these engineered restorations do not even reliably control storm water over time, such that they require frequent costly repair.

Fortunately, the MD Accounting Guidance also provides for far less disruptive, lower cost, and more effective approaches to storm water management damage to our streams, termed “Best Management Practices (BMPs)” in the document. These less disruptive approaches are effectively valid approaches to stream restoration though not defined as such in MD Accounting Guidance. They address run-off at its sources, conserve existing trees, and preserve complex streambed ecosystems. **BMPs are often more than sufficient for addressing most “stream restoration” purposes, including storm water management, with fewer hidden costs over time. Notably, many of the most authoritative scientific papers that report on BMP effectiveness are based in the Mid-Atlantic region. BMPs are simply underutilized.**

Gaps and Ways to Improve SB 798:

As noted, the concern is that SB 798 as drafted will have the effect of cementing in place tragic overuse of destructive approaches to stream work in Maryland. Specifically, as currently drafted:

- Does not explicitly enough incorporate BMPs in the array of “stream restoration” alternatives available to counties and industry for storm water management.
- The newly created Licensing Board membership comprises predominantly industry members with an interest in heavy-equipment projects.
- Contractor competency and project incorporation of BMP implementation is not encouraged or incentivized *in lieu* of unnecessarily destructive approaches.
- Tree conservation is not among the measures that contractors are directed to undertake to enhance the environmental soundness of stream restoration.
- Contractors can solicit projects, and there is little accountability to the public on MS4 project plans and outcomes.
- State and county officials are not required to identify and require through permits all opportunities for BMP implementation *in lieu* of destructive approaches.

Fortunately, some of these problems inherent in the bill current formulation can be fixed, and in a manner consistent with the bill’s purpose to improve industry standards around stream restoration work. Specifically, the bill should be amended to:

- Subject stream restoration project proposals involving heavy equipment to intensive review and oversight by the MDE. Contractors and counties should not be allowed to market destructive approaches to host communities as a park amenity.
- Reverse the exemption of restoration project application fees on projects requiring heavy construction equipment to:
 - allow MDE to better oversee stream restoration work; and
 - incentivize use of BMPs that conserve natural stream beds and existing trees.
- Include BMPs the range of tools for which licensed firms conducting stream restoration work must show competency, either by including BMPs in the statutory definition of “stream restoration practices” or defining them separately.
- Require all project applications to assess baseline stream conditions and define goals for biological and ecological uplift, water quality, and mature tree conservation.
- Require mature tree preservation plans and pre- and post-project mature tree maps to create accountability that losses were in fact minimized.

In conclusion, Maryland streams are at a moment of truth. Current approaches to stream restoration are unnecessarily destroying trees and streambeds, possibly forever. Maryland law should not allow these destructive methods.

Allegra Cangelosi
Private Citizen
Takoma Park, MD 20912

RESOURCES

Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Guidance for National Pollutant Discharge Elimination System Stormwater Permits”

<https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/Final%20Determination%20Dox%20N5%202021/MS4%20Accounting%20Guidance%20FINAL%2011%2005%202021.pdf> 1

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.

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.

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

Cappiella, K., T. Schueler, and T. Wright. 2005. Urban Watershed Forestry Manual: Part 1. Center for Watershed Protection. 2017. Making Urban Trees Count. This web-based article included a review of 159 publications.

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.

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.

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.

Fejerskov, Morten & Kristensen, Klaus & Friberg, Nikolai. (2014). Re-Meandering of Lowland Streams: Will Disobeying the Laws of Geomorphology Have Ecological Consequences? *PloS one*. 9. e108558.

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.

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.

Hilderbrand, Robert H. 2020. Determining Realistic Ecological Expectations in Urban Stream Restorations. Study funded by Chesapeake Bay Trust Award #15823.

Hildebrandt et al. Quantifying the ecological uplift and effectiveness of differing stream restoration approaches in Maryland Final Report Submitted to the Chesapeake Bay Trust for Grant #13141. Robert

Hilderbrandt, Robert H. and Joseph Acord, Appalachian Laboratory University of Maryland Center for Environmental Science And Collaborators Timothy J. Nuttle and Ray Ewing Civil and Environmental Consultants, Inc. 333 Baldwin Road, Pittsburgh, PA 15205

<https://www.umces.edu/research-highlights/restoring-streams#:~:text=Bob%20Hilderbrand%2C%20an%20associate%20professor%20at%20the%20University,back%20to%20the%20thriving%20ecosystem%20they%20once%20were.>

<https://www.epa.gov/chesapeake-bay-tmdl>

https://www.fema.gov/pdf/about/regions/regionx/Engineering_With_Nature_Web.pdf

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.

Johnson, Matthew & Thorne, Colin & Castro, Janine & Kondolf, George Mathias & Mazzacano, C. Zee & Rood, Stewart & Westbrook, Cherie. (2019). Biomic river restoration: A new focus for river management. *River Research and Applications*. 36. 10.1002/rra.3529.

Laub, Brian & McDonough, Owen & Needelman, Brian & Palmer, Margaret. (2013). Comparison of Designed Channel Restoration and Riparian Buffer Restoration Effects on Riparian Soils. *Restoration Ecology*. 21. 10.1111/rec.12010.

Nelson, Kären & Palmer, Margaret & Pizzuto, James & Moglen, Glenn & Angermeier, Paul & Hilderbrand, Robert & Dettinger, Michael & Hayhoe, Katharine. (2008). Forecasting the Combined Effects of Urbanization and Climate Change on Stream Ecosystems: From Impacts to Management Options. *Journal of Applied Ecology*. 46. 154 - 163. 10.1111/j.1365-2664.2008.01599.x.

North Street Neighborhood Association. 2009. Watering-Up: Studies of Groundwater Rising After Trees Cut.

Palmer, Margaret & Hondula, Kelly & Koch, Benjamin. (2014). Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals. *Annual Review of Ecology, Evolution, and Systematics*. 45. 247-269. 10.1146/annurev-ecolsys-120213-091935.

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.

Pennino, Michael & McDonald, Rob & Jaffe, Peter. (2016). Watershed-scale impacts of stormwater green infrastructure on hydrology, nutrient fluxes, and combined sewer overflows in the mid-Atlantic region. *Science of The Total Environment*. 565. 10.1016/j.scitotenv.2016.05.101¹

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.

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.

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. 1117-1119.

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.

US Environmental Protection Agency. 2023. Soak up the Rain: Trees Help Reduce Runoff

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.

Wood, K.L., Kaushal, S.S., Vidon, P.G. et al. Tree trade-offs in stream restoration: impacts on riparian groundwater quality. *Urban Ecosyst* 25, 773–795 (2022). <https://doi.org/10.1007/s11252-021-01182-8>

Wortley, Liana & Hero, Jean-Marc & Howes, Michael. (2013). Evaluating Ecological Restoration Success: A Review of the Literature. *Restoration Ecology*. 21. 10.1111/rec.12028.

Cangelosi.SB969.FAV.pdf

Uploaded by: Allegra Cangelosi

Position: FWA

SB 969 - Whole Watershed Act

COMMITTEE – Education, Energy and the Environment

Testimony on SB 969 (Elfreth)

POSITION - FAV ONLY WITH AMENDMENTS

Hearing Date - March 5th, 2024

Good afternoon. My name is Allegra Cangelosi. I am a Maryland citizen of 35 years, and an environmental professional focused on the Great Lakes environmental protection and management (retired). Thank you for this opportunity to testify on SB 969, introduced by Senator Elfreth. One goal of SB 969 is to improve the integrity of “stream restoration” contract services by making contractors accountable to a Licensing Board. It also authorized pilot studies to demonstrate best practices to improve the health of 5 Maryland streams. However, as currently drafted, this bill perpetuates the status quo of extremely dramatic “tear it up and rebuild it” approaches to on-going and rapid MD stream work. This oversight will result in unnecessary and profound natural resource damage. Notably, many of the most authoritative scientific analyses on BMP effectiveness have been conducted, already, in the Mid-Atlantic region. It would be a tragic mistake to postpone maximizing use of BMPs while this bill’s pilot studies to play out—a period of 5-10 years. **Due to this problem with the proposed process as drafted, my testimony is in support only with amendment, and request that the bill sponsors carefully consider this concern.**

Background:

Maryland’s streams are complex ecosystems which deliver critical ecological and human health services to Maryland communities. These services include storm water management, water filtration, carbon sequestration, biodiversity habitat, recreation and natural beauty. As we are all aware, over time, Maryland streams have become severely degraded by heavy run-off, chemical pollution and climate change effects.

MD Accounting Guidance defines a range stormwater control approaches which could be employed for the purpose of reducing polluted run-off to and stream bank erosion within the Chesapeake Bay watershed. The approaches defined in the MD Accounting Guidance as “stream restoration” focus on stream channel reinforcement with or without ecological considerations. These “tear it up and rebuild it” approaches entail wholesale destruction of the existing stream ecosystem and removal of upland trees to give heavy construction machinery access. There is growing scientific evidence that these disruptive interventions, even with tree replantings, harm streams as functioning ecosystems in a manner they may never recover from. Recent studies are also showing these engineered restorations often require repair soon after completion, likely because they do nothing to abate run-off volumes.

Fortunately, the MD Accounting Guidance also allows for non-destructive, more stable, and more effective approaches to achieving storm water management and stream erosion prevention. These alternative, more effective approaches address stream bank erosion, and at the same time protect natural stream biological/physical/chemical features. They are termed Best Management Practices (BMPs). These non-destructive approaches are strangely not included in the term

“stream restoration” practices as defined by Maryland Accounting Guidance, but they restore streams.

BMP effectiveness depends upon the retention of stream valley mature trees, which are critical to stream ecosystem structure and function. This fact is in stark contrast to tear-it-up-and-replace-it approaches that destroy stream valley forests in the interest of giving access to heavy construction equipment. BMPs they reduce run-off at its sources, and preserve complex streambed ecosystems to reduce storm water impacts. Their effectiveness at storm water control and biological uplift is well-validated. Many of the most authoritative scientific papers on BMP effectiveness are rooted in Mid-Atlantic region case studies. Based on research to date, BMPs also have fewer hidden costs over time. Further, they do not destroy stream ecosystems as operations defined as “stream restoration” in Maryland Accounting Guidance often do.

In sum, BMPs are allowed in the MD Accounting Guidance. They are effective. They are simply underutilized in stream health management in Maryland.

Issues and Ways to Improve SB 969

SB 969 as drafted will have the effect of cementing tragic overuse of ineffective and destructive approaches to stream restorations in place in Maryland. Specifically, as currently drafted:

- BMPs are not included or promoted among the array of “stream restoration” alternatives available to counties and industry for storm water management.
- The newly created Licensing Board membership comprises predominantly industry members with an interest in heavy-equipment projects.
- Contractor competency and project incorporation of BMP implementation is not encouraged or incentivized *in lieu* of unnecessarily destructive approaches.
- Tree conservation is not among the measures that contractors are directed to undertake to enhance the environmental soundness of stream restoration (only replanting).
- Contractors can solicit projects, and there is little accountability to the public on MS4 project plans and outcomes.
- State and county officials are not required to identify and require through permits all opportunities for BMP implementation *in lieu* of destructive approaches.

Fortunately, some of these problems inherent in the current formulation of SB 969 can be fixed, and in a manner consistent with the bill’s purpose to improve industry standards around stream restoration work. **Specifically, SB 969 should be amended to:**

- Discourage stream restoration projects involving heavy equipment and incentivize use of BMPs that conserve natural stream beds and existing trees.
- Include BMPs the range of tools for which licensed firms conducting stream restoration work must show competency, either by including BMPs in the statutory definition of “stream restoration practices” or defining them separately.
- Require all project applications to specify goals for biological and ecological uplift, water quality, and mature tree conservation and measure outcomes against them. Require timely public access to this information.
- Require mature tree preservation plans and pre- and post-project mature tree maps to create accountability that losses were in fact minimized.
- Require expanded public notice, transparency, and community engagement, generally.

Maryland streams are at a moment of truth. Current approaches to stream work are unnecessarily destroying trees and streambeds, possibly forever. The sponsors of SB 969 know this to be true or the pilot studies would not have been authorized. However, Maryland law should not be allowing these destructive approaches to storm water management in the first place. Contractors and counties also should not be allowed to market such stream restorations to host communities as a park amenity.

In sum, Maryland law should explicitly accommodate and incentivize well-validated BMP approaches to stream improvement, starting now. There is no need to wait. As noted, many of the most authoritative scientific analyses on BMP effectiveness were conducted on streams in the Mid-Atlantic region. It would be a tragic mistake to wait for this bill's pilot studies to play out—a period of 5-10 years—before formally incorporating BMPs into on-going, licensed stream restoration work in Maryland, and decisively incentivizing their use. I urge you to carefully amend this bill to ensure it truly results in stream resource protection and improvement in the State of Maryland.

Thank you for this opportunity to submit testimony. I provide below scientific and technical sources for this testimony. Thank you.

Sincerely:

Allegra Cangelosi
Private Citizen
Takoma Park, MD 20912

RESOURCES

RESOURCES

Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Guidance for National Pollutant Discharge Elimination System Stormwater Permits”

<https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/Final%20Determination%20Dox%20N5%202021/MS4%20Accounting%20Guidance%20FINAL%2011%2005%202021.pdf> 1

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.

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.

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

Cappiella, K., T. Schueler, and T. Wright. 2005. *Urban Watershed Forestry Manual: Part 1*.

Center for Watershed Protection. 2017. Making Urban Trees Count. This web-based article included a review of 159 publications.

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.

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.

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.

Fejerskov, Morten & Kristensen, Klaus & Friberg, Nikolai. (2014). Re-Meandering of Lowland Streams: Will Disobeying the Laws of Geomorphology Have Ecological Consequences? *PloS one*. 9. e108558.

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.

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.

Hilderbrand, Robert H. 2020. Determining Realistic Ecological Expectations in Urban Stream Restorations. Study funded by Chesapeake Bay Trust Award #15823.

Hildebrandt et al. Quantifying the ecological uplift and effectiveness of differing stream restoration approaches in Maryland Final Report Submitted to the Chesapeake Bay Trust for Grant #13141. Robert

Hilderbrandt, Robert H. and Joseph Acord, Appalachian Laboratory University of Maryland Center for Environmental Science And Collaborators Timothy J. Nuttle and Ray Ewing Civil and Environmental Consultants, Inc. 333 Baldwin Road, Pittsburgh, PA 15205

<https://www.umces.edu/research-highlights/restoring-streams#:~:text=Bob%20Hilderbrand%2C%20an%20associate%20professor%20at%20the%20University,b ack%20to%20the%20thriving%20ecosystem%20they%20once%20were.>

<https://www.epa.gov/chesapeake-bay-tmdl>

https://www.fema.gov/pdf/about/regions/regionx/Engineering_With_Nature_Web.pdf

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.

Johnson, Matthew & Thorne, Colin & Castro, Janine & Kondolf, George Mathias & Mazzacano, C. Zee & Rood, Stewart & Westbrook, Cherie. (2019). Biomic river restoration: A new focus for river management. *River Research and Applications*. 36. 10.1002/rra.3529.

Laub, Brian & McDonough, Owen & Needelman, Brian & Palmer, Margaret. (2013). Comparison of Designed Channel Restoration and Riparian Buffer Restoration Effects on Riparian Soils. *Restoration Ecology*. 21. 10.1111/rec.12010.

Nelson, Kären & Palmer, Margaret & Pizzuto, James & Moglen, Glenn & Angermeier, Paul & Hilderbrand, Robert & Dettinger, Michael & Hayhoe, Katharine. (2008). Forecasting the Combined Effects of Urbanization and Climate Change on Stream Ecosystems: From Impacts to Management Options. *Journal of Applied Ecology*. 46. 154 - 163. 10.1111/j.1365-2664.2008.01599.x.

North Street Neighborhood Association. 2009. Watering-Up: Studies of Groundwater Rising After Trees Cut.

Palmer, Margaret & Hondula, Kelly & Koch, Benjamin. (2014). Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals. *Annual Review of Ecology, Evolution, and Systematics*. 45. 247-269. 10.1146/annurev-ecolsys-120213-091935.

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.

Pennino, Michael & McDonald, Rob & Jaffe, Peter. (2016). Watershed-scale impacts of stormwater green infrastructure on hydrology, nutrient fluxes, and combined sewer overflows in the mid-Atlantic region. *Science of The Total Environment*. 565. 10.1016/j.scitotenv.2016.05.101¹

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.

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.

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. 1117-1119.

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.

US Environmental Protection Agency. 2023. Soak up the Rain: Trees Help Reduce Runoff

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.

Wood, K.L., Kaushal, S.S., Vidon, P.G. et al. Tree trade-offs in stream restoration: impacts on riparian groundwater quality. *Urban Ecosyst* 25, 773–795 (2022). <https://doi.org/10.1007/s11252-021-01182-8>

Wortley, Liana & Hero, Jean-Marc & Howes, Michael. (2013). Evaluating Ecological Restoration Success: A Review of the Literature. *Restoration Ecology*. 21. 10.1111/rec.12028.

SB 969_Favorable.pdf

Uploaded by: Anna Griffith

Position: FWA



SB 969 - Stream and Watershed Restoration - Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

Position: SUPPORT with Amendments

Date: March 5, 2024

Contact: Anna Mudd, Potomac Conservancy

Dear Chair Feldman and Committee Members:

Potomac Conservancy requests a **FAVORABLE report on SB 969**, the Whole Watershed Act. This bill will take several important steps to better align public resources with environmental outcomes and promote innovative partnerships.

In 2023, the Science and Technical Advisory Committee to the Chesapeake Bay Program released a report titled Comprehensive Evaluation of System Response, better known as CESR. CESR recommends a focus of investments on smaller geographies more likely to be responsive to restoration efforts in a shorter amount of time as well as providing multiple ecosystem benefits beyond water quality that are supported by the communities in which projects are located. Doing so will require a new approach and a focus of existing funding sources to bring about this result.

This is exactly what the Whole Watershed Act does. Under the guidance of a State Management Team that brings together relevant stakeholders and permitting entities, projects in five selected watersheds will be coordinated to produce maximum ecological impact, measurable co-benefits, and demonstrate an alternative to Maryland's current approach to "random acts of restoration". The bill also seeks to adapt this approach to different types of watersheds in rural, suburban, and urban areas with their own unique challenges and opportunities.

Finally, the bill will help ensure quality and high standards of design and construction in restoration projects by creating a new licensing board for the people and entities that provide stream restoration services. This is a proven model to ensure practitioners have the requisite knowledge to construct projects in ways that minimize environmental impacts.

Accelerating the cleanup of the Chesapeake Bay and its tributaries requires innovative ideas and coordinated efforts. The Whole Watershed Act takes many of the key recommendations of the CESR report and applies them toward a new and exciting model for waterway improvement.

For these reasons, we request a **FAVORABLE report on SB 969**.

Sincerely,

Anna Mudd
Senior Policy Director
Potomac Conservancy

SB0969-EEE_MACo_SWA.pdf

Uploaded by: Dominic Butchko

Position: FWA



Senate Bill 969

Stream and Watershed Restoration - Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

MACo Position: **SUPPORT**

To: Education, Energy, and Environment Committee

WITH AMENDMENTS

Date: March 5, 2024

From: Dominic J. Butchko

The Maryland Association of Counties (MACo) **SUPPORTS SB 969 WITH AMENDMENTS**. This bill, among other things, establishes the Whole Watershed Restoration Partnership, shifting state policy to place more focus on whole watershed restoration projects.

As the primary operators of public infrastructure in Maryland, counties have been major stakeholders in the state's push to clean up the Chesapeake Bay and in broader environmental sustainability efforts. Counties do not act alone though, and community group and nonprofits also play a significant role in this work. In an effort to better guide boots-on-the-ground leaders, state and federal policy makers have prioritized a menu of practices aimed at meeting certain environmental benchmarks. Currently, though, the structure of this menu and the execution of programs has led to singular one-off projects, instead of a larger coordinated effort. SB 969 is a first step changing that, incentivizing the breaking down of silos and encouraging all stakeholders to participate in a broader plan.

Counties support the underlying intent of SB 969 and applaud the bill sponsors for their coordination with county representatives. MACo requests the following amendments, which seek to clarify certain provisions:

- **Bay Restoration Fund Prioritization** – Under current law, MDE must prioritize funding from the Bay Restoration Fund for wastewater plant upgrades (both at large and small facilities) before the department initiates funding for the Clean Water Commerce Act or tree-related funding. Counties request language preserving this prioritization.

Amendment Language:

On page 8, strike lines 25-26 and substitute “**(XV) AFTER FUNDING ANY ELIGIBLE COSTS IDENTIFIED UNDER ITEM (IV) 1 AND 2 OF THIS PARAGRAPH, TO FUND THE WHOLE WATERSHED FUND ESTABLISHED UNDER §8-2B-03 OF THE NATURAL RESOURCES ARTICLE.**”

Additionally, MACo has been working with the bill sponsors and the Maryland Department of the Environment, as well as other members of the House and Senate, on additional amendments that will tie in other key considerations related to restoration efforts. The amendments should cover scope of project notification for certain projects, community input and meeting requirements, and certain responsibilities of the state related to approval processes. The Committee can expect to have amendment language very soon.

With these amendments, SB 969 will be a positive first step in ensuring a cleaner and healthier Chesapeake Bay and a better Maryland. For these reasons, MACo urges the Committee to give SB 969 a **FAVORABLE WITH AMENDMENTS** report.

SB969_MDSierraClub_FWA 5Mar2024.pdf

Uploaded by: Josh Tulkin

Position: FWA



P.O. Box 278
Riverdale, MD 20738

Committee: Education, Energy, and the Environment

Testimony on: SB969 “Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)”

Position: Favorable with Amendments

Hearing Date: March 5, 2024

The Maryland Chapter of the Sierra Club supports SB969, the Whole Watershed Act, with amendments. The bill seeks to improve water quality in the Chesapeake Bay while also enhancing oversight and management of projects impacting upstream watersheds. Our understanding is the sponsors have been exploring an amendment with related management guardrails, which we believe would be valuable.

Stream “restorations” often involve significant reengineering of watersheds. To help ensure that these upland watersheds are modified with care and the firms performing these projects have appropriate qualifications, SB969 establishes a Stream Contractors Licensing Board.

In addition, the bill establishes a Whole Watershed Fund by directing funding towards the implementation of five whole watershed restoration projects over five years. The projects would reflect a commitment to addressing diverse geographies across Maryland such as urban, agricultural, suburban, and multi-state watersheds and overburdened communities. A multi-agency State Management Team would oversee project selection, provide comprehensive support and monitoring, and oversee permitting.

Criteria for project selection include the watersheds “in which habitat restoration and pollution reduction will result in the greatest improvements to shallow water habitat and living resources, and that achieve rapid de-listing of impaired streams... or generate rapidly improving conditions in the local ecosystem.” Selection will also “emphasize actions that are expected to provide the greatest, most cost-effective, and measurable amount of pollution reduction.” It will also consider whether the project “minimizes the loss of trees and other natural habitats,” and “demonstrates opportunities to implement actions that reduce environmental disparities experienced by overburdened or underserved communities.”

The bill promotes public input for the pilot projects by requiring a public dashboard, public meetings, and an opportunity to comment on the preliminary design of each restoration action of the project. In addition, the bill would require monitoring for five years after approval of these projects to demonstrate measurable outcomes.

We also recommend an amendment that would require good management practices for activities beyond the pilot projects. These include limiting reengineering projects to streams that are in fact in a degraded state; requiring that community notification and engagement be conducted; ensuring that best management practices are used to promote ecological uplift and conserve wildlife habitat, including preserving trees to the maximum extent practicable; and requiring monitoring for a minimum of five years after project completion of stream water quality, biological integrity, and

related measures. In addition, the Maryland Department of the Environment (MDE) should update its checklist governing permits; publish on its website publicly available information on applications for new projects and post-project monitoring data; and update its document that governs accounting for expected impacts of stormwater mitigation projects. The goal of all these reforms is to ensure that the State's riparian watersheds are assessed, protected, and uplifted in a scientifically based process.

Maryland's natural stream ecosystems include aquatic and terrestrial plants and animals. They include the streambed of interest and the downstream bays, as well as the wooded areas around them, which absorb run-off and promote flow control and water purification. Maryland stream systems are currently severely stressed by factors both within and outside our immediate control. These stresses include 1) paving and other impermeable surfaces of upland areas that increase run-off volume and rates to streams, 2) tree removal that reduces water absorption capacity of the soil, and 3) climate change and the associated effects on temperatures and volumes and rates of rainfall.

The Maryland Chapter of the Sierra Club believes that the Whole Watershed Act, with its aim of demonstrating effective coordinated strategies across varied watersheds and its improved approach for guiding the oversight of stream restoration activities more generally, offers valuable promise. We also recommend the modifications discussed above to enhance the bill's conservation benefits for our state's ecosystems.

Randy Lyon
Legislative Chair
Randy.Lyon@MDSierra.org

Josh Tulkin
Director
Josh.Tulkin@MDSierra.org

Metchis Testimony-SB0969:HB1165.pdf

Uploaded by: Karen Metchis

Position: FWA

Whole Watershed Act (SB 969 / HB 1165) Sign-On Testimony

I am writing in support of **SB 0969 / HB 1165**, the Whole Watershed Act. This is an important bill will help to improve environmental outcomes and address some aspects of climate change while promoting innovative partnerships. However, I do request some amendments to ensure that ecosystem values are better protected and enhanced.

I recommend that the bill include a way to promote, incentivize, or otherwise require incorporation of non-structural, less channel-rehab oriented approaches to stream restoration, including minimizing removal of trees. The Hester and Teraso bills called this “vegetative stabilization, wetland creation, or other project....”

In 2023, the Science and Technical Advisory Committee to the Chesapeake Bay Program released a report titled Comprehensive Evaluation of System Response, better known as CESR. CESR recommends a focus of investments on smaller geographies more likely to be responsive to restoration efforts in a shorter amount of time as well as providing multiple ecosystem benefits beyond water quality that are supported by the communities in which projects are located. Doing so will require a new approach and a focus of existing funding sources to bring about this result.

This is exactly what the Whole Watershed Act does. Under the guidance of a State Management Team that brings together relevant stakeholders and permitting entities, projects in five selected watersheds will be coordinated to produce maximum ecological impact, measurable co-benefits, and demonstrate an alternative to Maryland's current approach to "random acts of restoration". The bill also seeks to adapt this approach to different types of watersheds in rural, suburban, and urban areas with their own unique challenges and opportunities.

Finally, the bill will help ensure quality and high standards of design and construction in restoration projects by creating a new licensing board for the people and entities that provide stream restoration services. This is a proven model to ensure practitioners have the requisite knowledge to construct projects in ways that minimize environmental impacts.

Accelerating the cleanup of the Chesapeake Bay and its tributaries requires innovative ideas and coordinated efforts. The Whole Watershed Act takes many of the key recommendations of the CESR report and applies them toward a new and exciting model for waterway improvement.

For these reasons, I request a **FAVORABLE report on SB 969 / HB 1165, with select amendments.**

Sincerely,

Karen Metchis
Bethesda, MD 20814
karen.metchis@gmail.com

SB 969 MDE SWA.pdf

Uploaded by: Les Knapp

Position: FWA



The Maryland Department of the Environment
Secretary Serena McIlwain

Senate Bill 969

Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

Position: Support with Amendments
Committee: Education, Energy, and Environment
Date: March 5, 2024
From: Jeremy D. Baker

The Maryland Department of the Environment (MDE) **SUPPORTS SB 969 WITH AMENDMENTS.**

Bill Summary

Senate Bill 969 would establish the “Stream Restoration Contractors Licensing Board” (SRCLB), a formal licensure program for all stream restoration contractors. The bill sets forth provisions for developing and carrying out the stream restoration contractors licensing program including: board procedures and representation; licensure and regulation of individuals and entities that perform stream restoration contractor services in the State; collection and accounting for all fees associated with the licensing program; and record-keeping for all licensed individuals and entities. The bill would also establish the Whole Watershed Fund to incentivize certain restoration goals, and create a framework for prioritizing projects to receive funding through the Department of Natural Resources (DNR). Lastly, the bill contains language terminating certain Subtitles after July 1, 2033 unless otherwise reestablished under the Maryland Program Evaluation Act.

Position Rationale

Establishing the SRCLB would help the Department ensure the stream restoration projects it authorizes are constructed according to approved plans and by qualified individuals. Stream restoration projects are intended to be a net benefit to Maryland’s wetland and waterway resources; to achieve this goal, stream restoration projects undergo careful consideration during planning, design, and permitting by individuals with specialized expertise in this area. Procurement practices for soliciting construction contractors may favor the lowest bidder and, in some cases, can result in these projects being constructed by entities without prior experience or qualifications. The SRCLB would help ensure that only qualified contractors who have an understanding of the sensitive resources involved are completing these projects. Further, the Board would be able to hold contractors accountable for complying with Department and other approvals, and ensure that contractors have knowledge of best practices specific to stream restoration which will be maintained through continuing education based on the latest science.

Additionally, the Whole Watershed Fund provision of SB 969 would establish a science-based framework for funding watershed restoration projects with the highest likelihood of success.

Contact: Les Knapp, Government Relations Director
Cell: 410-453-2611 (cell), Email: les.knapp@maryland.gov

MDE understands that the sponsors plan to submit amendments to incorporate feedback from a large stakeholder group that included State agencies, local governments, industry experts, and environmental organizations. MDE appreciates the sponsors considering its feedback, and looks forward to continuing to work on revising the bill.

The Whole Watershed Act would ensure that State funds are prioritized for the most beneficial restoration projects based on achievable outcomes, and ensure project integrity is maintained during construction for all stream restoration projects.

Accordingly, MDE asks for a **FAVORABLE WITH AMENDMENTS** report for SB 969.

2024-03-04 MAMSA Ltr SB 969.pdf

Uploaded by: Lisa Ochsenhirt

Position: FWA



March 4, 2024

The Honorable Brian J. Feldman
Chair, Education, Energy, and the Environment Committee
2 West, Miller State Office Building
Annapolis, MD 21401

Re: Support with Amendments -- SB 969 (Stream and Watershed Restoration- Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act))

Dear Chairman Feldman:

On behalf of the Maryland Municipal Stormwater Association (MAMSA), I am writing to support with amendments SB 969, which would do two primary things: (1) create a Stream Restoration Contractors Licensing Board and (2) create a Whole Watershed Fund Partnership which would allow a State Management Team to fund environmental restoration projects.

MAMSA is an association of the State's local governments and leading stormwater consultant firms who work for clean water and safe infrastructure based on sound science and good public policy.

MAMSA strongly supports stream restoration projects as a tool to help recover the hydrological and ecological functions of streams that have been damaged over time by land development. These projects have been thoroughly vetted in the Chesapeake Bay Watershed by multiple Chesapeake Bay Program Expert Panels that represent a broad scientific community. The most recent Expert Panel Memo, which was issued in October, 2020, was written by representatives from the U.S. Environmental Protection Agency, the Maryland Department of the Environment, Virginia Tech, the University of Maryland, and stream restoration practitioners, among others. MAMSA members rely on and stand by the implementation of these projects based on their positive impacts to the natural environment.

MAMSA generally supports SB 969 as filed, with one requested amendment. Please add local government representatives (appointed by MACO and MML) to the Stream Restoration Contractors Licensing Board (beginning on p. 11, l. 13).

We understand that there are ongoing discussions about possible amendments to the bill. MAMSA appreciates the opportunity to share member thoughts as stormwater professionals on any future changes to the text.

Please feel free to contact me with any questions at Lisa@AquaLaw.com or 804-716-9021.

Sincerely,

A handwritten signature in blue ink that reads "Lisa M. Ochsenhirt".

Lisa M. Ochsenhirt, MAMSA Deputy General Counsel

cc: Education, Energy, and the Environment Committee, SB 969 Sponsors

2024-03-04 MAMWA Ltr on SB 969.pdf

Uploaded by: Lisa Ochsenhirt

Position: FWA



Maryland Association of Municipal Wastewater Agencies, Inc.

Washington Suburban Sanitary Commission

14501 Sweitzer Lane, 7th Floor

Laurel, MD 20707

Tel: 301-206-7008

March 4, 2024

MEMBER AGENCIES

Allegany County
Anne Arundel County
City of Baltimore
Baltimore County
Town of Berlin
Cecil County
Charles County
City of Cumberland
D.C. Water
Frederick County
City of Hagerstown
Harford County
City of Havre de Grace
Howard County
Ocean City
Pocomoke City
Queen Anne's County
City of Salisbury
Somerset County Sanitary District
St. Mary's Metro. Comm.
Washington County
WSSC Water

The Honorable Brian J. Feldman
Chair, Education, Energy, and the Environment Committee
2 West, Miller State Office Building
Annapolis, MD 21401

Re: Support with Amendments -- SB 969 (Stream and Watershed Restoration-Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act))

Dear Chairman Feldman:

On behalf of the Maryland Association of Municipal Wastewater Agencies (MAMWA), I am writing to convey MAMWA's support with amendments for SB 969, which would do two primary things: (1) create a Stream Restoration Contractors Licensing Board and (2) create a Whole Watershed Fund Partnership which would allow a State Management Team to fund environmental restoration projects.

MAMWA is a statewide association of local governments and wastewater treatment agencies that serve approximately 95% of the State's sewer population. MAMWA members own and operate wastewater treatment plants that are capital-intensive and need regular maintenance and upgrades to comply with strict environmental requirements, to serve local customers, and to protect the environment. MAMWA members rely on the Bay Restoration Fund (BRF) for plant and conveyance system upgrades, combined sewer overflow abatement, and sewer system rehabilitation.

MAMWA requests an amendment that would clarify that payments from the BRF for wastewater upgrades would be prioritized over sending funds to the Whole Watershed Fund (p. 8, l. 25-26). This prioritization is already in the Environment Article, for example, with regard to the Clean Water Commerce Act ("After funding any eligible costs identified under item (iv)(1) and (2) of this paragraph, for transfers to the Clean Water Commerce Act in accordance with paragraph (3) of this subsection;"). (§9-1605.2(i)(2)(xiv)).

Please feel free to contact me with any questions at Lisa@AquaLaw.com or 804-716-9021.

Sincerely,

Lisa M. Ochsenhirt, MAMWA Deputy General Counsel

cc: Education, Energy, and the Environment Committee, SB 969 Sponsors

CONSULTANT MEMBERS

Black & Veatch
GHD Inc.
Greeley and Hansen Engineers
Hazen & Sawyer
HDR Engineering, Inc.
Jacobs
Ramboll Americas
Whitman, Requardt & Assoc.
Xylem, Inc.

GENERAL COUNSEL

AquaLaw PLC

my testimony on Senate Whole Watershed bill.pdf

Uploaded by: Marion Edey

Position: FWA

Committee: Senate Education, Energy and the Environment Committee

Testimony: HB 1165 Stream and Watershed Restoration (Whole Watershed Act)

Position: Support only with amendments

Hearing Date: March 5, 2024

My name is Marion Edey and I am testifying for Friends of the Earth, in support of amendments to this bill.

I agree with Doug Myers that a policy of random acts of stream restoration is not working. To the extent that this bill can provide a more systematic way to determine which streams are targeted for restoration, that is good, and could allow us to collect useful data.

But the bill does not mention what should be the most important criterion of all: We need to restore the most impaired streams first.

Because most stream restorations inevitably destroy the natural ecosystems in stream valleys. Thousands of trees are taken out to make room for heavy machinery used to dig up and reshape stream beds and banks, killing the native vegetation and micro-organisms in the soil. The stream is left to bake in the sun without the shade needed for aquatic life. What rushes in to fill the void are invasive species which do not support native insects, birds, and animals. The food chain collapses. Native populations are crashing, because of habitat loss, driven in part by stream restorations.

Impaired streams have less nature left to lose, and are often in heavily paved watersheds where alternative upland controls are more difficult to do. To reduce harm, target them first.

Other legislators have drafted language with stronger guard rails, public participation, and tree conservation requirements. I strongly urge you, please adopt that language in incorporate it into your bill.

You can't fix these problems by creating a licensing board or by urging contractors to do the impossible and re-create an ecosystem from scratch. The best way to protect a stream is to invest in upland storm water controls, to stop the fire-hosing the stream so it doesn't need to be restored.

They say an ounce of prevention is worth a pound of cure. But your bill goes the other way. It creates a huge new revenue stream which is devoted exclusively to stream restoration, with the goal of accelerating how many projects are done.

There is no money here for prevention – upland controls or green infrastructure. This despite the fact that, according to MDE’s own 2022 Assurance Plan, there are many upland controls which are more cost-effective than stream restorations. Stream restorations must often be done repeatedly when we fail to address the root of the problem, when too much land is paved. This bill locks us into a system which neglects prevention and relies way too much on destructive cures.

One other provision is troubling. The bill gives priority to projects which will “achieve the rapid de-listing of impaired streams”. This could become a perverse incentive to target the only mildly impaired streams rather than the most impaired, simply because it is easier to take them off the list. This will result in much greater tree and eco-system loss than would occur if we target the most impaired streams first.

Finally, the most important reform of all which I beg the Committee to take up another year: We need to change the way in which MDE awards MS4 credits, to give more priority to prevention. Until this is done, your work is not done, and bitter controversies over stream restorations will continue.

SB 969 CBC Bill Report.pdf

Uploaded by: Mark Hoffman

Position: FWA



CHESAPEAKE BAY COMMISSION

Policy for the Bay • www.chesbay.us

Bill Report

Bill Number/Title: SB 969 / Stream and Watershed Restoration - Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)
Committee: Education, Energy, and the Environment Committee
Hearing: March 5, 2024
Position: Support with Sponsor Amendments

Background

The Chesapeake Bay Commission is tri-state legislative commission created by law in Maryland, Pennsylvania and Virginia to advise the members of the three general assemblies on matters of watershed-wide concern. Its fundamental purpose is to develop legislation and policies that foster the collaborative and practical restoration of the Chesapeake Bay and its watershed.

In late-2022, Commission members first received a briefing from the Chesapeake Bay Program's Science and Technical Advisory Committee about the pending release of a major new scientific analysis of the restoration efforts over the past 40 years, called the "Comprehensive Evaluation of System Response" (or CESR). With its formal release last year, the report identified areas of needed improvement for the Bay Partnership to collectively make better progress in achieving restoration goals.

SB 969 is greatly informed by that analysis – in particular the need for the more focused or targeted implementation of best management practices, a greater emphasis on shallow-water habitats, and more engagement of citizens and local communities in restoration. The legislation creates the organizational, management and financial structure to pilot innovative strategies to improve both water quality and living resource response.

Position

The Maryland Legislative members of the Commission support SB 969. Our collective inability to achieve the water quality goals originally established for 2025 (the Total Maximum Daily Load, or TMDL) demonstrate the need to try new approaches to watershed restoration – informed by the sound science of the CESR report.

SB 969 - CBF - FWA.pdf

Uploaded by: Matt Stegman

Position: FWA



CHESAPEAKE BAY FOUNDATION

Environmental Protection and Restoration
Environmental Education

Senate Bill 969

Stream and Watershed Restoration – Stream Restoration Contractor Licensing
and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

Date: March 5, 2024
To: Education, Energy, and the Environment Committee

Position: **Favorable With Amendments**
From: Doug Myers
Maryland Senior Scientist

Chesapeake Bay Foundation (CBF) **SUPPORTS SB 969 with amendments to be offered by the sponsor.** The bill will establish a Whole Watershed demonstration program among five Maryland watersheds to achieve better environmental outcomes in a more cost-efficient way through coordinated funding, support, and guidance from a newly created State Management Team. Maryland's watershed restoration permitting and funding structure currently does not prioritize the coordination of multiple Best Management Practices (BMPs). As a result, effective, low-cost BMPs are often not pursued because of difficulties with permitting, coordination, and availability of funding. Additionally, the bill establishes a Stream Restoration Contractors Licensing Board to ensure that the on-the-ground practitioners providing stream restoration services have the knowledge and expertise necessary to ensure project quality.

Piecemeal Approach Does Not Maximize Investment in Restoration:

Local governments and non-profit watershed groups, following sound scientific guidance, often evaluate stream system impairment and restoration opportunities across large watershed scales. These assessments, aided by state agency monitoring and data sharing programs, may include high resolution mapping of impervious surfaces, tree cover and local hydrology as well as monitoring of water quality, fish and benthic biological health. From these assessments, suites of restoration opportunities are developed conceptually with restoration practitioners and are included in comprehensive watershed restoration plans. Unfortunately, due to the current incentive structure underlying many state and federal programs, funding for baseline and post-project monitoring, implementation of multiple projects sites and types, community outreach and adaptive management called for in those plans is not available. The result is a patchwork of uncoordinated projects on the landscape that are not capable of producing the cumulative benefits locally or for the bay watershed and may lack support of nearby residents who have felt excluded from the planning process.

The Scientific and Technical Advisory Committee (STAC) of the Chesapeake Bay Program identified this issue in their groundbreaking report known as the Comprehensive Evaluation of System Response (CESR). CESR recommends a focus of state and federal investments on smaller watersheds more likely to be responsive to restoration efforts in a shorter amount of time as well as providing multiple ecosystem benefits beyond water quality that are supported by the communities in which the projects lie. Doing so will require a new approach and a reframing of existing funding sources to bring about this result.

Maryland Office • Philip Merrill Environmental Center • 6 Herndon Avenue • Annapolis • Maryland • 21403

Whole Watershed Act Coordinates Funding and Practices For Bigger Results:

SB 969 aligns existing funding sources to allow multiple projects sites and types of projects to be focused into Maryland Hydrologic Unit Code 8 (HUC8¹) watershed geographies. These projects could include removal of impervious surfaces, tree planting, wetlands creation and floodplain projects designed to address scouring flows and loss of important stream habitats and processes. Only together and at a significantly larger scale over a smaller geography can watershed plans be implemented as they were intended. The funding sources will also support crucial baseline and post-project monitoring to verify if the proposed project goals were achieved.

The bill directs coordinated funding and guidance into five selected watersheds that represent different geographies and land use types with a priority for Environmental Justice communities. The bill describes the type of watersheds that may be right for the program but does not mandate specific watersheds be chosen. Instead, selected watersheds will exemplify community involvement, innovative approaches, and the ability to demonstrate progress within the next 5 years. Further, the bill requires practices that provide multiple co-benefits to support the health of the whole watershed and community.

The projects planned as part of the Whole Watershed approach will be overseen by a newly established State Management Team. The State Management team consists of multiple state agencies, local experts, and others that will select projects, monitor and support progress, and coordinate permitting processes across relevant agencies.

Crucially, the bill recognizes that streams in urban areas do not respond as they do in suburban or rural settings based on the level of watershed imperviousness and encroachment into the stream valley by infrastructure. Also, community sensibilities vary based on levels of privilege, opportunity to participate in watershed planning or the green jobs that projects create, and the history of environmental harm experienced. SB 969 addresses this by requiring investment across these geographic and social segments.

Whole Watershed Act Creates a New Certification for Stream Restoration Practitioners:

SB 969 creates a new Stream Restoration Contractors Licensing Board, modelled on other successful professional licensing entities such as the Marine Contractors Licensing Board. While many firms have design/build capacity and are the logical choice for constructing restoration best management practices in the streams where they themselves have developed the conceptual project ideas, local procurement rules may require least cost bids. There is also a significant time delay between any public process that may have authorized the funding for the project and its construction. This situation has resulted in some projects cutting corners, impacting the environment in a way not intended by the project designers and alienating neighbors who should have been consulted on project siting, scope and design, especially if the project area contains mature trees, cherished recreational value or cultural artifacts. The contractor licensing provision allows the state to convey and enforce minimum standards for projects, including public involvement and adherence to project designs.

¹ Maryland has 138 HUC8 watersheds. The 8-digit scale is the most common management scale for watersheds across the state and therefore is the scale at which most of Maryland's local TMDLs are developed. A map of Maryland's HUC8 watersheds is available at <https://mde.maryland.gov/programs/water/tmdl/datacenter/pages/8digitwatershed.aspx>

Sponsor Amendments Represent a Consensus Approach, Put Appropriate Guardrails on Restoration: Amendments to be offered by the bill's sponsor make important clarifying changes to the bill. They also include a new section that will put appropriate guardrails on permitted stream restoration projects. These guardrails provide for enhanced public notice of projects, meaningful opportunities for input from impacted communities, and enhanced protection for forested areas near a project site. The bill sponsors have brought together a broad coalition of stakeholders, including scientists, environmental advocates, local governments, state agencies, and restoration practitioners themselves. These are common-sense additions to the restoration permitting process that will further ensure that projects are vetted and understood by local communities.

CBF urges the Committee's FAVORABLE WITH AMENDMENT Report on SB 969.

For more information, please contact Matt Stegman, Maryland Staff Attorney, at mstegman@cbf.org.

SB 969 - community sign-on - FAV.pdf

Uploaded by: Matt Stegman

Position: FWA

Testimony before the
Senate Education, Energy, and the Environment Committee
March 5, 2024

Senate Bill 969
Position: **FAVORABLE**

Dear Chairman Feldman, Vice Chair Kagan, and Members of the Committee:

We, the undersigned individuals and organizations, request a **FAVORABLE report on SB 969**, the Whole Watershed Act. This bill will take several important steps to better align public resources with environmental outcomes and promote innovative partnerships.

In 2023, the Science and Technical Advisory Committee to the Chesapeake Bay Program released a report titled Comprehensive Evaluation of System Response, better known as CESR. CESR recommends a focus of investments on smaller geographies more likely to be responsive to restoration efforts in a shorter amount of time as well as providing multiple ecosystem benefits beyond water quality that are supported by the communities in which projects are located. Doing so will require a new approach and a focus of existing funding sources to bring about this result.

This is exactly what the Whole Watershed Act does. Under the guidance of a State Management Team that brings together relevant stakeholders and permitting entities, projects in five selected watersheds will be coordinated to produce maximum ecological impact, measurable co-benefits, and demonstrate an alternative to Maryland's current approach to "random acts of restoration". The bill also seeks to adapt this approach to different types of watersheds in rural, suburban, and urban areas with their own unique challenges and opportunities.

Finally, the bill will help ensure quality and high standards of design and construction in restoration projects by creating a new licensing board for the people and entities that provide stream restoration services. This is a proven model to ensure practitioners have the requisite knowledge to construct projects in ways that minimize environmental impacts.

Accelerating the cleanup of the Chesapeake Bay and its tributaries requires innovative ideas and coordinated efforts. The Whole Watershed Act takes many of the key recommendations of the CESR report and applies them toward a new and exciting model for waterway improvement.

For these reasons, we request a **FAVORABLE report on SB 969**.

Sincerely,

Anna Mudd
Potomac Conservancy

Robin Broder
Waterkeepers Chesapeake

Jim Brown
Audubon Mid-Atlantic

Dr. Mark Southerland
Vernal Pool Partners

Abby Snyder
Baltimore Jewish Council

Annie Richards, Chester Riverkeeper
ShoreRivers

Wandra Ashley-Williams
Rebuild Maryland Coalition

Humna Sharif
The Nature Conservancy

Antoinette Rucker
Interfaith Partners for the Chesapeake

Annalisa Dias
Groundwater Arts

Diana Conway
Safe Healthy Playing Fields Inc.

Lisa Garrett
Prince George's Audubon Society

Julie Dunlap
Audubon Society of Central Maryland

Jesse Iliff
Severn River Association

Paulette Hammond
Maryland Conservation Council

Robert Simon
Maryland Catholics for Our Common Home

Dave Arndt
Maryland Legislative Coalition Climate Justice
Wing

Maggie Ostdahl
National Aquarium

Nanci Wilkinson
Environmental Justice Ministry
Cedar Lane Unitarian Universalist Church

Greg Smith
Sustainable Hyattsville

Virginia Smith
Indivisible HoCoMD

Robert L. Goo
Friends of Sligo Creek

Deborah A. Cohn
Climate Coalition Montgomery County

Phillip Mariscal
Izaak Walton League of America
Rockville, MD Chapter

Elders Climate Action Maryland

Climate Reality Greater Maryland

Niamh McQuillan
350.org and Climate Reality Project

Taylor Swanson, Assateague Coastkeeper
Assateague Coastal Trust

Reba Carruth
Interfaith Partners of the Chesapeake

Phil Webster
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Green Sanctuary of Unitarian Universalist Church of
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Georgeanne Pinkard
Queenstown, MD

Dennis Harris
Pasadena, MD

SB969.pdf

Uploaded by: Shannon Moore

Position: FWA



FREDERICK COUNTY GOVERNMENT
DIVISION OF ENERGY & ENVIRONMENT

Jessica Fitzwater
County Executive

Shannon Moore, Director

SB 969 – Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

DATE: March 5, 2024
COMMITTEE: Senate Education, Energy, and the Environment
POSITION: Support with Amendments
FROM: Frederick County Executive Jessica Fitzwater

As the County Executive of Frederick County, I urge the committee to give SB 969 a favorable with amendments report.

This bill aims to create a Stream Restoration Contractors Licensing Board and create a Whole Watershed Fund Partnership which would allow a State Management Team to fund environmental restoration projects.

Stream restoration projects are a critical tool in recovering and preserving functions of streams that have been increasingly damaged over time by development. As we work to find creative solutions to environmental problems, it is important that we place an emphasis on correcting damage that has been caused by land development projects. These projects are vetted by multiple Chesapeake Bay Program Expert Panels to ensure that they will in fact have a meaningful and positive impact on stream health and the environment. By creating a fund to assist with these projects, the State has the opportunity to encourage stream restoration.

SB 969 not only establishes a fund for stream restoration, but creates a Stream Restoration Contractors Licensing Board. This board is set to be responsible for licensing and regulating individuals and entities that provide stream restoration contractor services in the State. Frederick County is requesting an amendment to this bill that would add local government representatives appointed by the Maryland Association of Counties and the Maryland Municipal League. This would help to ensure that local government voices are heard and taken into account when making important decisions that have the potential to impact stream restoration projects.

Thank you for your consideration of SB 969. On behalf of County Executive Fitzwater and the residents of Frederick County, I urge a favorable with amendments report.

Shannon Moore, Director
Division of Energy and Environment

SB 0969 WWA Davis FWA.pdf

Uploaded by: Wayne Davis

Position: FWA

Testimony on Senate Bill 0969 – Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

Hearing Date - March 5, 2024

Dear Members of the Education, Energy, and the Environment Committee,

I urge you to consider these amendment topics for SB 969. I would like to generally comment that the Whole Watershed Act is just restating how TMDLs are done in Maryland, on an 8-digit watershed. There is nothing new here – TMDLs must focus on the whole watershed, which this Bill does not. If you focus on the whole watershed, then make sure the sources of the impairment are dealt with, whether with non-point source controls, BMPs, stormwater retention practices, and the reduction of road salts and fertilizers.

Instead of the pilot projects, the funding should be spent on a careful review and documentation of the hundreds of projects already completed (or underway) that have been done in every type of land use affected by all of the sources and causes of impairments.

- 1) Replace the term “Stream restoration” with “**Stream Re-engineering**” to more accurately reflect the practice.

“Stream Restoration” is an industry intended to play on the words used in the primary objective of the Clean Water Act - “to **restore** and maintain the chemical, physical, and biological integrity of the nation's waters.” There are many types of activities that can be considered as stream restoration including stormwater BMP and small-scale stabilization projects. However, we have seen more large-scale stream restoration projects, including those proposed as part of “mitigation banks” that required the wholesale re-engineering of the streams including denuding the landscape of trees and other vegetation, recreating the stream banks and stream bottoms, and altering the riparian zone.

- 2) **Licensing Process.** Do not allow a company or organization with a single person with stream restoration contractor licensing to be able to share that certification status with other individuals within that company or organization.

Licensing gives a political validation and legitimacy of an industry that it doesn't currently have, which is increasingly under fire in the scientific community for questionable practices of the industry – not just a few bad actors doing bad work. A licensing process and board for stream restoration contractors is proposed, but all this will do is legitimize this industry and all they do while allowing a single licensed contractor in an organization to supervise low level technicians who will be classified as licensed based on the organization's license. This will hurt small

business operators who will not have the army of newly licensed stream restoration contractors (merely because one person in the organization is licensed). It is a deceptive practice to allow unqualified staff to have the same certification status as those that are certified themselves. Perhaps they are apprentices, but only if they have basic minimum qualifications and will be pursuing certification themselves. This needs to be worked out.

3) **Measure and report on progress and success.** In all stream restoration projects, clearly indicate the very specific goals and objectives, the specific measurable indicators, and how monitoring will be used to measure progress and success of the projects. Each project should clearly identify the true main achievable goals and whether it is biological/ecological uplift and/or sediment and nutrient reduction.

The presumed success of these wholesale stream restoration efforts has been debunked repeatedly when at closer scrutiny, monitoring data does not support the findings of success and/or the goals and objectives were so shrouded in bureaucratic terms success would be automatic even before the project was completed. Therefore, we need to create public confidence by clearly indicating goals and objectives, how monitoring and assessment of progress and success will be done, and the primary measurable indicators used to determine that progress or success. The difficulty stream restoration practices face was recently discussed by the Chesapeake Research Consortium's Scientific and Technical Advisory Committee (STAC).

4) **Enabling Legislation Should be Documented.** Each stream restoration project should clearly indicate the enabling legislation down to the specific line in the text, whether it is Maryland's COMAR or federal legislation like the CWA. This way the public will know exactly under what authority the proposed project is being conducted under.

5) **Monitoring and Assessment approaches should be clearly documents in each project proposed.** Each project should specify before and after, and control and impact (upstream/downstream) monitoring approach and explain how project success will be determined including all proposed timelines. All previous and relevant monitoring that was done should also be clearly documented.

6) **Specific and measurable Indicators along with the acceptable and unacceptable ranges for meeting or failing the goals and objectives should be documented for each project.**

Each project should indicate the measurable endpoints, also known as indicators, which will be used to assess progress and/or success of the project. If biological or ecological, they must use instream measurements of biological community health in those projects, at a minimum, including fish and benthic macroinvertebrates using the field methods adopted by the Maryland Biological

Stream Survey. Indicators for sediment and water quality (e.g., nutrients) must be collected per Maryland Department of Environment requirements.

7) Establish a Scientific and Technical Advisory Committee. Similar to the Chesapeake Research Consortium's Scientific and Technical Advisory Committee (STAC), some type of broader oversight is needed that will address the issues raised in these comments. The STAC had a 3-day workshop last year on "The State of the Science and Practice of Stream Restoration in the Chesapeake: Lessons Learned to Inform Better Implementation, Assessment and Outcomes". We need better implementation, assessment, and outcomes and to be able to do a much better job communicating these topics to the public.

8) Each project should include a public statement on how the proposed project will fulfil any and all credits for any regulatory agency requirements.

The regulatory agencies for which this work is being done must support a better job of explaining the purpose of these projects. Each project should clearly indicate whether it is being conducted for regulatory credits, and which ones, or for some other purpose. The subject regulatory agencies (State and Federal) could put together a short statement describing all the various types of credits available for conducting stream restoration projects. This will be a major help with transparency for the public, project accountability, and public understanding of the importance of various projects and ensure projects are being done for the right purpose.

Please make the process for written, and other, testimony more easily understandable, transparent, accessible and available to the general public. The instructions provided are cryptic and limiting, especially to those submitting testimony for the first time. Testimony should be easier, not more difficult.

Sincerely,

Wayne Davis

Jessup, Maryland

Comments on Maryland Bill SB0969.pdf

Uploaded by: Bill Gillespie

Position: UNF

Comments on Maryland Senate Bill SB0969

March 4, 2024

So called “stream restorations” are not restorations at all. They are stream re-engineering projects that cut down trees and destroy the plants and animals in our parks and increasingly scarce wild places. In spite of claims made by industry, these projects do not significantly reduce the nitrogen, phosphorous, and sediment pollution that pollutes the Chesapeake Bay. These projects may actually generate sediment that harms the Chesapeake Bay.

It is my understanding that this bill is being promoted by the stream “restoration” industry. The bill is a misguided attempt to license companies that engage in these destructive practices.

As noted above “stream restorations,” as currently performed, destroy the natural environment. They also open natural areas allowing for invasive plants infestations. They often fail catastrophically after they are built damaging a stream valley. The only work that should be done in natural areas and stream valleys is work to surgically protect critical manmade infrastructure like roads and other public property like sewer lines, etc. This work should be carefully planned and monitored by state staff in concert with interested citizens and citizen groups, and environmental groups who have an interest in preserving our natural areas.

Sincerely,

William G. Gillespie

OPPOSE HB0969 Seneca Creek Watershed Partners.pdf

Uploaded by: deborah sarabia

Position: UNF



March 4, 2024

Re: HOUSE BILL 0969

Position: OPPOSED

Seneca Creek Watershed Partners is an all-volunteer non-profit dedicated to the health of Seneca Creek watershed, the largest watershed in Montgomery County.

We OPPOSE HB0969 "WHOLE WATERSHED ACT" for the following reasons:

- The bill would create, and fund, an unnecessary bureaucracy stacked with stream restoration (engineering) industry representatives, political appointees and staff. One representative each of MDE and DNR would be included although their expertise is not specified. No biologists, ecologist, hydrologists or any other relevant science discipline would necessarily be included.
- It would divert funds that should be used for more effective stormwater management and nature-based restoration. State funds for restoration should be used efficiently and effectively to reach the Chesapeake Bay restoration goals under the Chesapeake Bay TMDL.
- This bill would exacerbate an already heavily weighted system that pushes for restorations. Local governments view stream restorations as an easier and cheaper path to MS4 permits, and thus have no incentive to seek what is ecologically preferable. We have experienced stream restorations in the Seneca Creek watershed that could only be described as devastating to the natural environment.
- A stated goal of the bill is to fast-track removal of water bodies from the State 303d impairment list. Without out-of-stream stormwater management, this will never be possible. The vast majority of streams in Maryland are impaired by nutrients, sediment and biological stressors. This bill would continue to prioritize stream restoration projects that only address the symptoms, not the cause, of stormwater pollution and stream degradation.

- Instream net biological uplift should always be a stated goal of any stream restoration. Studies of macroinvertebrate and fish population health have found that these are nearly always worse post-restoration. According to a research summary of 40 Maryland stream restoration projects:

“Despite the promise and allure of repairing damaged streams, there is little evidence for ecological uplift after a stream’s geomorphic attributes have been repaired....In fact, the unrestored sections upstream were often ecologically better than the restored sections or those downstream of restorations. Our results suggest that restoration activities do not mitigate the reasons causing the ecological declines. Higher levels of Impervious Surface Cover (ISC) in the watershed have an overarching influence on Piedmont streams (but not in the Coastal Plain). Restorations actually decreased in ecological health measures to a greater extent as ISC increased than their unrestored counterparts upstream. Ecological measures also responded negatively to the degree of disruption caused by the restoration. Longer restorations and those with more installed structures had lower ecological uplift measures in the Piedmont, while those in the Coastal Plain responded negatively to greater amounts of installed root wads and step pools. A key point here is that the amount or intensity of restoration did not improve outcomes in either region.” - https://cbtrust.org/wp-content/uploads/Hilderbrand-et-al_Quantifying-the-Ecological-Uplift.p

- The Board would approve continuing education requirements for licensees. The required curriculum is not described. Would contractors be required to meet aquatic and riparian ecological knowledge?
- Projects would require only cursory public notice, not much different from current practice. Public notice is not the same as public engagement.

While we appreciate our delegates’ efforts to address the impacts of stream restorations, HB 0969 does not adequately protect or restore our waterways and riparian habitat, nor does it serve the purpose of the Clean Water Act “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

Sincerely,

Deborah Sarabia, M.En.
Advisor, Seneca Creek Watershed Partners
www.senecacreekwp.org

cc: Kevin Misener, President

SB969_Bawer Testimony_23.pdf

Uploaded by: Kenneth Bawer

Position: UNF

Kenneth Bawer,
8 Cleveland Ct., Rockville, MD 20850

March 4, 2024

Committee: Education, Energy, and the Environment Committee

Testimony on: SENATE BILL 969 “Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

Position: UNFAVORABLE

Hearing Date: March 5, 2024

I **OPPOSE** SB 969 for the following reasons since this bill would undermine efforts to restore the health of the Chesapeake Bay, undermine efforts to protect communities from the effects of climate change, and undermine efforts to advance environmental progress.

First, in the spirit of full disclosure, I have no financial interest in the practice of stormwater control or stream “restorations.” This is important to state since some who may testify or who have lobbied may be industry employees with a financial interest in stream “restorations” or who are paid by nonprofits to promote stream “restorations.” As always, follow the money to determine the motivation.

This bill is a misguided attempt to license practitioners of the scientifically discredited practice of so-called stream “restoration.” The term stream “restoration” is a misnomer of epic proportions. It is the only destructive tool for stormwater management in the stormwater management toolkit and creates frankenstreams - nothing that would ever be found in nature - with artificial meanders, unnatural rock dams, and stone-armored banks (see photographs in Appendix 1). Empirical evidence of washed-out stream “restoration” projects (see photos in Appendix 2) and published scientific papers prove that stream “restorations” are *not* an effective practice to keep nitrogen, phosphorous, and sediment out of the Bay, nor to improve the ecology at the project location.

The establishment of a Stream Restoration Contractors Licensing Board and the licensing of stream “restoration” contractors would be an attempt to convey a false sense of legitimacy to an illegitimate industry and practice. The scientifically unfounded promise of stream “restorations” promoted by the industry and proponents is the “field of dreams” approach – build it and the ecological recovery will come. The problem is that neither empirical evidence (that is, direct observations) nor the published scientific evidence support this.

Maryland Department of the Environment knows that stream “restorations” are snake oil projects, as do local jurisdictions, the stream restoration industrial complex, and the various river keepers, and non-profit federations and conservancies. They know that the promise of stream “restorations” is like snake oil because observations on the ground show the clearcutting of stream-side forests which destroy miles of natural habitat. They know that stream “restorations” are like snake oil because these projects are supposed to stabilize streams but are washed-out by storms after construction and because photographic documentation shows muddy sediment laden water running through the sites of “restored” streams. They also know that claims of ecological recovery at stream “restoration” sites are false and directly contradicted by the published scientific literature. We should not license stream

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“restoration” practitioners who, like snake oil salesmen, hawk a fraudulent product: “Step right up for Doc Matin’s miracle stream “restoration” cure. Only one million dollars a project.”

Appendix 1 has photos showing the destruction caused by stream “restorations.” These photos show the massive loss of fish and wildlife habitat, the loss of habitat for disappearing pollinators like bees and butterflies, and the clearcutting of stream-side forests that accelerates global warming and will take 100 years or more to replace what was destroyed. Stream “restorations” result in the trashing of our natural habitats that are important to protecting our quality of life and for future generations to enjoy. Appendix 1 has photos of disastrous projects (and all stream “restorations” are disastrous) in:

- Anne Arundel County:
 - Beards Creek (in Annapolis Landing)
 - Broad Creek Valley West
 - Broad Creek MVA
 - Broad Creek Park
 - Camp Woodlands
 - Church Creek Headwaters
 - Bacon Ridge Branch at Elks Camp Barrett
- Baltimore County
 - Pearlstone Retreat Center in Reisterstown
 - Scotts Level Branch
- Cecil County
 - Bayview
- Fredrick County
 - Point of Rocks
- Harford County
 - Emmord Branch Unnamed Tributary
 - Heavenly Waters Park
 - Annie's Playground
 - Barrington Restoration Project
- Howard County:
 - Longfellow project - clearcut and then 700 replanted trees died
 - Font Hill
 - Nash Run
 - Dead Run
- Montgomery County:
 - Nature Forward (formerly Audubon Naturalist Society)
 - Falls Reach
 - Asbury Methodist Village
 - Upper Watts Branch
 - Whetstone Run
 - Solitaire Court
- Prince George’s County
 - Tinkers Creek
 - Bear Branch

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- Crain Stream
- Reston, VA
 - Upper Snakeden Branch

These projects are the gift that keeps on giving for the \$25 billion dollar stream “restoration” industry since their guarantee is typically only for one year and they know that these projects will get washed out by future storms. After that, we the taxpayers pay for the repairs.

It is a question of when, not if, a project will be washed-out by a post-construction storm event due to uncontrolled out-of-stream stormwater. Appendix 2 has photographs of washed-out stream “restoration” projects in:

- Anne Arundel County:
 - Annapolis Landing – washed out by storms
- Baltimore City
 - Stony Run – washed out by storms
- Montgomery County
 - Josephs Branch – washed out by storms
 - Cabin John Creek – washed out by storms
 - Long Branch – washed out by storms
 - Snakeden Branch – washed out by storms
 - Bedfordshire – washed out by storms
 - Old Farm Creek – washed out by storms and will be repaired for \$800K in 2024
 - Grosvenor - washed out by storms and will be repaired for \$4.8M in 2024
 - Lower Booze Creek - washed out by storms and was repaired for \$3.6M
- Reston, VA
 - The Glade

Rather than buying into the cycle of constructing and then repairing failed stream “restorations” that will simply get washed out again, this money should be spent on out-of-stream stormwater control projects, such as bioretentions and conservation landscaping, to capture stormwater before it enters streams which removes the root cause of stream erosion.

What does the science say? Surely, everyone promoting stream “restorations” is familiar with the published scientific literature showing that these projects do not work including:

- A meta-analysis of 644 projects by M. Palmer et al. who said, “We show that a major emphasis remains on the use of dramatic structural interventions, such as completely reshaping a channel, despite growing scientific evidence that such approaches do not enhance ecological recovery, and the data we assembled (Table 2) suggest they are often ineffective in stabilizing channels when stability is the primary goal.”¹ They also showed that water quality does not improve, that biology does not improve, and that ecology does not improve.

¹ Palmer, M. A., K. L. Hondula, and B. J. Koch, University of MD, 2014, “Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals,” *Annu. Rev. Ecol. Evol. Syst.* 2014. 45:247-269.
(<https://akottkam.github.io/publications/Palmerpublications/Palmer2014a.pdf>)

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- R. Hilderbrand's meta-analysis of 40 NCD- and RSC-type projects that concluded, "There simply were few ecological differences between restored and unrestored sites. In fact, the unrestored sections upstream [from the restoration sites] were often ecologically better than the restored sections or those downstream of restorations."²
- A meta-analysis of 30 projects by Carr et. al. concluding that the ecology did not improve.³
- An analysis of 11 streams In Anne Arundel County by Southerland et. al. showing that the biology did not improve.⁴

Someone might say, "I have seen a paper that says project X worked." It is not surprising that the odd project may be shown to be successful in terms of nitrogen, phosphorous, and sediment reduction, and maybe even biological uplift. But the meta-analyses referenced above show that any successful projects are outliers - the rare exception rather than the rule. It is the rule that establishes the science, not one-offs.

In fact, Montgomery County Department of Environmental protection recently admitted that *none* of their past projects improved stream ecology.⁵

Once residents and elected officials understand the true results of stream "restorations," projects have been stopped:

- In Howard County, the Lake Elkhorn and Plumtree Branch projects were recently cancelled due to resident and officials' outrage.
- In Montgomery County, a January 14, 2024 letter to the County Executive and the County Council from 13 organizations and 90 individuals called for a halt to stream "restoration" projects.

Any arm waving about the need to "restore" streams to pre-colonial conditions ignores the reality that this is impossible given the current level of watershed development and population size. The same is true of the Bay itself per the recent Chesapeake Bay Program's STAC report on achieving water quality goals.⁶

² Hilderbrand, Robert H., et. al., 2020, "Quantifying the ecological uplift and effectiveness of differing stream restoration approaches in Maryland," Final Report Submitted to the Chesapeake Bay Trust for Grant #13141, (https://cbtrust.org/wp-content/uploads/Hilderbrand-et-al_Quantifying-the-Ecological-Uplift.pdf)

³ Carr, J., Hart, D., McNair, J., 2006, "Compilation and Evaluation of Stream Restoration Projects: Learning from Past Projects to Improve Future Success," The Patrick Center for Environmental Research, The Academy of Natural Sciences of Drexel University, Report Submitted to the William Penn Foundation. <https://ansp.org/research/environmental-research/projects/restoration/>

⁴ Southerland, Mark, et. al., 2021, "Vertebrate Community Response to Regenerative Stream Conveyance (RSC) Restoration as a Resource Trade-Off," Award: 18002 CBT Restoration Research Grant to Tetra Tech and UMCES-Chesapeake Biological Laboratory; <https://cbtrust.org/wp-content/uploads/FINAL-Report-for-18002-Tetra-Tech-CBL-CBT-RR-Vertebrates-in-RSCs-30SEP2021-Submitted-to-CBT.pdf>

⁵ DEP presentation about Grosvenor stream "restoration" to Stormwater Partners Network on Jan. 16, 2024 in response to a question.

⁶ Chesapeake Bay Program report: Scientific and Technical Advisory Committee (STAC). (2023). Achieving water quality goals in the Chesapeake Bay: A comprehensive evaluation of system response [CESR] (K. Stephenson & D. Wardrop, Eds.). STAC Publication Number 23-006, Chesapeake Bay Program Scientific and Technical Advisory

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We should not license companies to destroy our natural areas when observations and the science show that stream “restorations” are failing in terms of not providing physical stability, not improving water quality, and not improving the ecology.

We should not license the industry to accelerate the use of stream “restorations” which have proven to be ineffective and destructive. We should listen to the science, not employees of the stream “restoration” industrial complex who have a financial interest in selling their snake oil projects to an unsuspecting public and elected officials.

In summary,

1. Stream “restorations” destroy natural areas. Direct evidence of washed-out projects and the science show that they do not work to either stabilize streams or improve the ecology.
2. Funds should instead be spent on out-of-stream stormwater control practices that, unlike stream “restorations,” address a whole list of residents’ concerns such as reducing urban flooding, reducing heat islands, increasing property values, providing urban green spaces, and protecting natural areas.
3. There are 20 out-of-stream stormwater control practices that are less expensive than stream “restorations” according to Maryland Department of the Environment’s “Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated.”⁷
4. The way to stop stream erosion is to address the problem at its source - to control stormwater *outside* of streams by non-destructive practices such as raingardens, bioswales, tree planting, etc. in already disturbed areas.

We can protect our streams and save money by meeting stormwater control and mitigation regulations with cheaper and more effective out-of-stream practices compared to so-called stream “restorations.” This bill would increase the costs of meeting the pollution reduction targets and delay meeting the deadlines agreed to by Chesapeake Bay states.

Unlike so-called stream “restorations,” out-of-stream practices address the root cause, not the symptom, of stream erosion. Out-of-stream practices capture stormwater from impervious surfaces such as roads, roofs, and parking lots and from farm runoff *before* it fire-hoses into our streams.

For these reasons, I **OPPOSE** SB 969 and I urge an **UNFAVORABLE** report.

Thank-you for consideration.

Committee (STAC), Edgewater, MD. 129 pp. <https://www.chesapeake.org/stac/wp-content/uploads/2023/05/CESR-Final-update.pdf>

⁷<https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/Final%20Determination%20Dox%20N5%202021/MS4%20Accounting%20Guidance%20FINAL%2011%2005%202021.pdf>

APPENDIX 1: Photos of damage done by stream “restorations”

- **Anne Arundel County:**
 - o Beards Creek in Annapolis Landing (below)



- o Broad Creek Valley West (below)

Broad Creek Valley West Stream “Restoration,” Annapolis



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- o Broad Creek MVA (below)

Broad Creek MVA Stream "Restoration," Annapolis



- o Broad Creek Park (below)

Broad Creek Park Stream "Restoration", Annapolis



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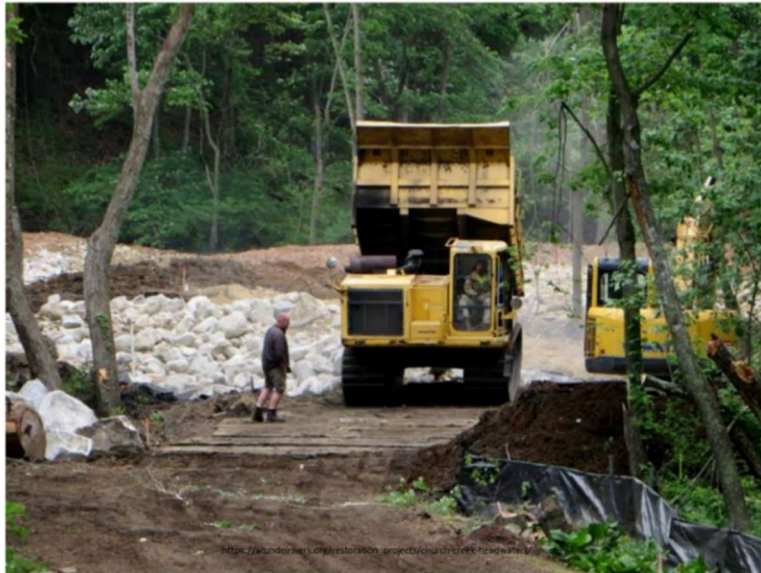
- o Camp Woodlands (below)

Camp Woodlands Stream Restoration (Broad Creek), Anne Arundel Co.



- o Church Creek Headwaters (below)

Church Creek Headwaters, Anne Arundel Co.– Construction



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- o Bacon Ridge Branch at Elks Camp Barrett – still flowing with muddy water (below)



- **Howard County:**

- o Longfellow project - clearcut and then 700 replanted trees died (below)

Longfellow stream "restoration," Columbia, MD



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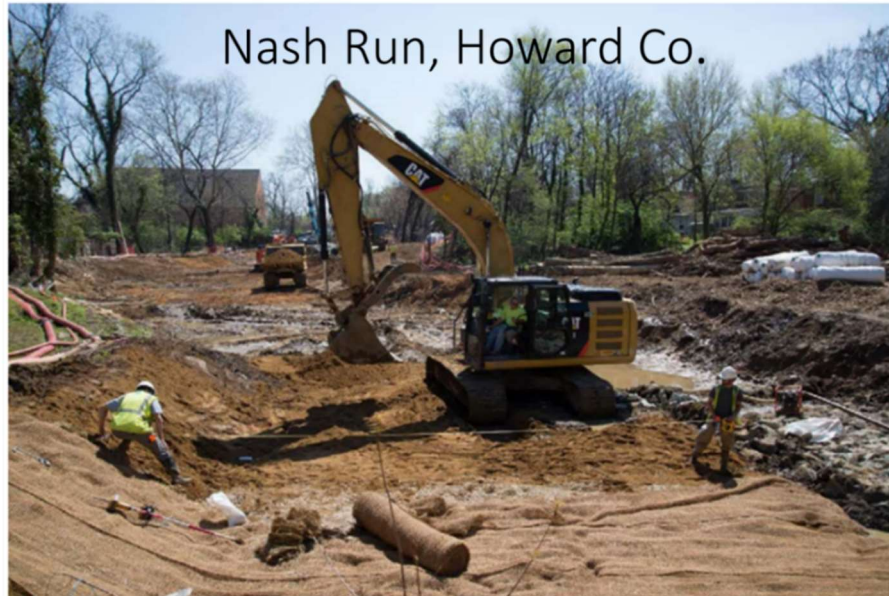


- o Font Hill (below)



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- o Nash Run (below)



• <https://www.howardcountymd.gov/sites/default/files/media/2017-12/Font%20Hill%20Presentation%2011.30.17.pdf>

- o Dead Run (below)

Dead Run, Howard Co.



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- **Montgomery County:**

- o Nature Forward (formerly Audubon Naturalist Society) (below)

Nature Forward (formerly ANS), Chevy Chase



(3/26/2021, downstream from Jones Mill Rd. Photos by K. Bawer)

- o Falls Reach (below)

Falls Reach, Potomac, MD



Before Montgomery County DEP "stream restoration" on Falls Reach. (Photo by DEP)



After "stream restoration" on Falls Reach completely destroyed the forest community in its footprint. (Photo by K. Bawer on 3/19/2019)

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- o Asbury Methodist Village (below)

Asbury Methodist Village, Montgomery County



- o Upper Watts Branch (below)

Upper Watts Branch, Rockville



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- o Whetstone Run (below)

Whetstone Run, Gaithersburg



(Stream "restoration" in Blohm Park, Gaithersburg at Watkins Mill Rd. over Whetstone Run at the same location. Note the stream bank armor-plating on the right. (Left on 9/3/2020; right on 5/03/2021); by K.Bawer)

- Solitaire Court (below)

Solitaire Court, Gaithersburg



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- **Prince George's County**
 - o Tinkers Creek (below)

Tinkers Creek, Prince George's County



• <https://www.youtube.com/watch?v=7WhINFkywDM>

- o Bear Branch (below)

Bear Branch, Prince Georges County - AFTER

Bear Branch Stream Restoration

Status: Under Construction
Stakeholders:
• Department of Natural Resources (DNR)
• City of Laurel
• Villages of Wellington HIOA
Estimated Completion: May 2022
Grant Funding: \$1.75M

Design Approach:
Floodplain Reconnection
Creation of Wetland Complexes
Grade Controls
Toe Wood Protection

<https://www.princegeorgescountymd.gov/DocumentCenter/View/37900/GS-2021-Day-4-Restoration-projects-12-PM>

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- o Crain Stream (below)

Crain Stream Restoration, Prince George's County



- **Baltimore County**

- o Pearlstone Retreat Center in Reisterstown (below)

Pearlstone Retreat Center in Reisterstown, MD



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- o Scotts Level Branch (below)



- **Fredrick County**
 - o Point of Rocks Stream Restoration (below)

Point of Rocks Stream Restoration Project, Fredrick County



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- **Harford County**
 - Emmord Branch Unnamed Tributary (below)

Emmord Branch Unnamed Tributary Stream Restoration, Harford Co.



- Heavenly Waters Park (below)

Heavenly Waters Park Stream Restoration, Harford Co.



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- Annie's Playground Stream Restoration Project (below)



- Barrington Restoration Project (below)



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- **Cecil County**
 - Bayview

Bayview Stream "Restoration," Cecil Co



- **Reston, VA**
 - Upper Snakeden Branch Reston, VA (note how water is chocolate brown after "restoration")

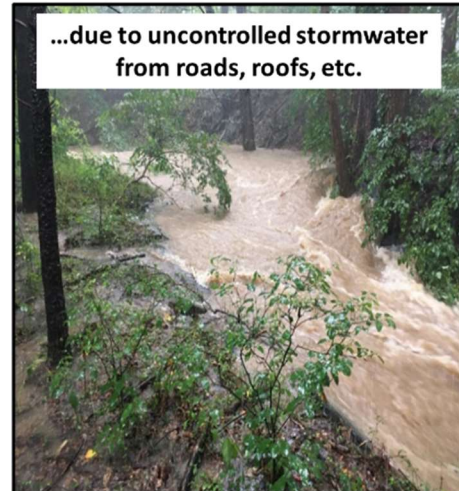
Upper Snakeden Branch Reston, VA - after



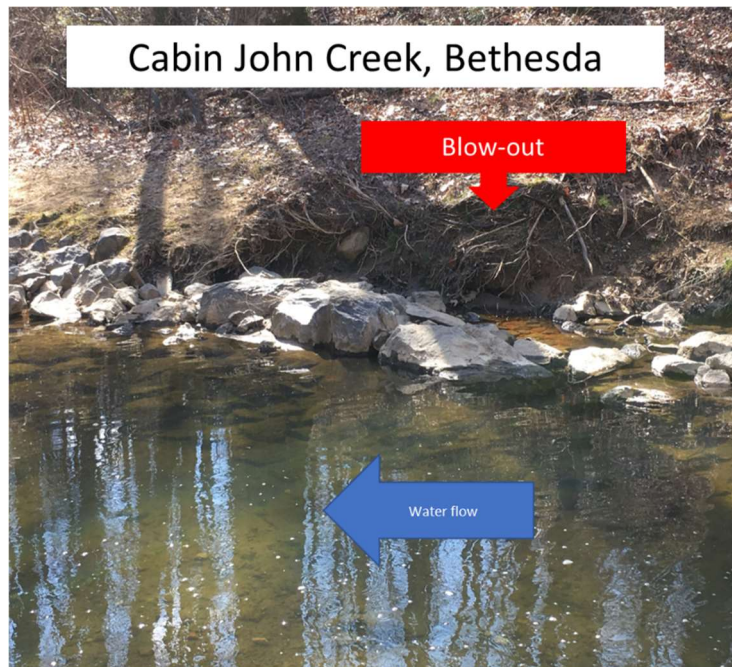
APPENDIX 2: Washed-out stream “restoration” projects

- **Montgomery County**
 - Josephs Branch (below) – washed out by storms

Josephs Branch, Kensington



- Cabin John Creek (below) – washed out by storms



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- Long Branch (below) – washed out by storms



- Snakeden Branch (below) – washed out by storms

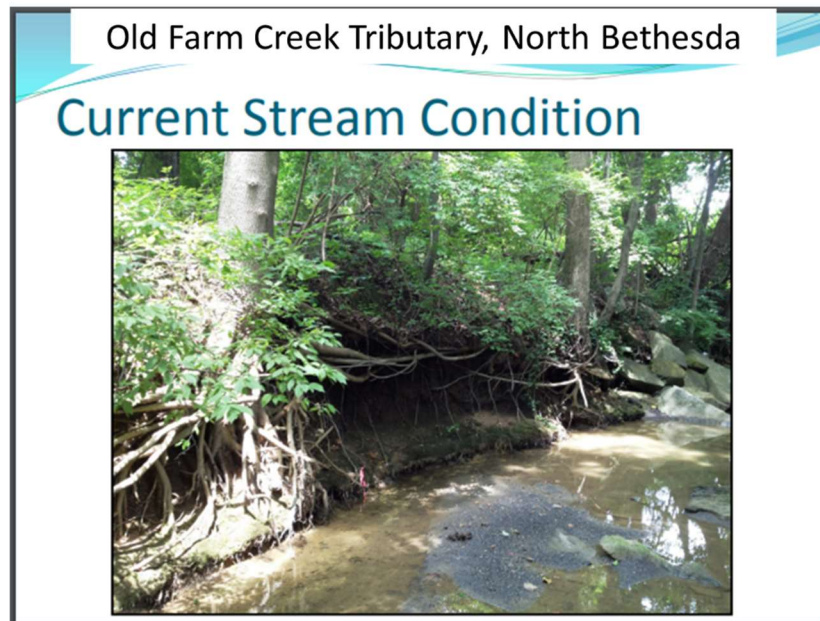


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- Bedfordshire (below) – washed out by storms



- Old Farm Creek (below) – washed out by storms and will be repaired for \$1.7M in 2024



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- Grosvenor (below) - washed out by storms and will be repaired for \$4.8M in 2024

Grosvenor Luxmanor Stream "Restoration," North Bethesda, Mo Co



Wildwood Manor, south of I-270

- Lower Booze Creek (below) - washed out by storms and was repaired for \$3.6M



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- **Anne Arundel County:**
 - Annapolis Landing – washed out by storms

Annapolis Landing in Riva, Anne Arundel Co.



- Baltimore City
 - Stony Run – washed out by storms

Stony Run, Baltimore City



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- **Reston, VA**
 - The Glade – washed out by storms

The Glade, Reach 4A, Reston VA



SB969_CSSD_written.pdf

Uploaded by: Kenneth Bawer

Position: UNF

COALITION TO STOP STEAM DESTRUCTION

March 1, 2024

Committee: Education, Energy, and the Environment Committee

Testimony on: SENATE BILL 969 “Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

Position: UNFAVORABLE

Hearing Date: March 5, 2024

We, the undersigned eight organizations and thirty-six individuals and, request an **UNFAVORABLE report on SB 969**, the Whole Watershed Act.

This bill would undermine efforts to restore the health of the Chesapeake Bay, undermine efforts to protect communities from the effects of climate change, and undermine efforts to advance environmental progress.

The Chesapeake Bay Program’s 2023 Science and Technical Advisory Committee (STAC) document known as the CESR report (“Comprehensive Evaluation of System Response) states that “the Bay of the future will be different from the Bay of the past because of permanent and ongoing changes in land use, climate change, population growth, and economic development.”

Yet the Whole Watershed Act would enable the continued futile attempt to “restore” streams to pre-colonial conditions. This ignores the reality spelled out in the CESR report that returning to pre-colonial conditions is impossible given the current level of watershed development and population size.

The establishment of a Stream Restoration Contractors Licensing Board and the licensing of stream “restoration” contractors would bestow undeserved credibility to the practice of so-called stream “restoration.” Observations on the ground show that stream “restoration” projects are being washed out by storms. Published scientific reports that analyzed over 700 stream “restoration” projects show that they resulted in no ecological benefits.

We should not license stream “restoration” companies when observations and the science show that their practices are failing to prevent stream erosion, failing to improve water quality, and failing to improve the environment.

This bill would only accelerate the use of stream “restorations” which are proven to be ineffective and destructive. This bill would only accelerate the conversion of Maryland streams into unnatural engineered stormwater conveyances.

In addition, this bill fails to address the root cause of steam degradation which is uncontrolled stormwater runoff from impervious surfaces such as roads and parking lots as well as from

COALITION TO STOP STEAM DESTRUCTION

agricultural fields. This can only be accomplished using out-of-stream practices such as bioretentions and permeable pavement.

This bill would increase the costs of meeting pollution reduction targets according to Maryland Department of the Environment's (MDE's) 2022 "Annual Report on Financial Assurance Plans and the Watershed Protection and Restoration Program" and delay meeting deadlines agreed to by Chesapeake Bay states.

For these reasons, we request an **UNFAVORABLE report on SB 969**.

Sincerely,

Organizations:

Cedar Lane Unitarian Universalist Congregation Environmental Justice Ministry, Molly Hauck
Cedar Lane Unitarian Universalist Environmental Justice Ministry, Lee McNair
Coalition to Stop Stream Destruction, Kenneth Bawer
Divergence, LLC, Peter Ensign
Gillis Environmental Education Inc., Julie Super
Howard County Citizens Association, Brian England
Patuxent Watershed Protective Association, Inc., James Putman
Protect Our Streams, Sharon Boies

Individuals:

Amy Bennett, Howard County
Antoinette Hudson, Gaithersburg, MD
Chris Walker, Columbia, MD
D. Travis Gallagher, Potomac, MD
David Anderson, Maryland Native Plant Society, Laurel, MD
Jane Hill, Bethesda, MD
Janette Rosenbaum, Gaithersburg MD
Jeff Schloss, Rockville, MD
Joan Maloof, Berlin, Md
John Parrish, Friends of Ten Mile Creek & Little Seneca Reservoir, Silver Spring, MD
K.L. Kyde, Dickerson, MD
Katherine Benjamin, Garrett Park, MD
Kira Lueders, Kensington, MD
Kopal Jha, PhD, Takoma Park, MD
Laura Welch, Third Act Maryland, Takoma Park, MD
Linda Davidson, Silver Spring, MD
Linda Nishioka, Kensington, MD
Linda Silversmith, Rockville, MD
Lynn Parsons, Kensington, MD

COALITION TO STOP STEAM DESTRUCTION

Margaret Connor, Howard County, Ellicott City, MD

Mary Zack, Rockville, MD

Milan Mehta

Pamela M Mattes, Poolesville, MD

Patty McGrath, Potomac, MD

Peter Wood, Green Coalition, Montgomery Village, MD

Roberta G Steinman, Friends of Ten Mile Creek and Little Seneca Reservoir, Silver Spring, MD

Samuel Stavis, Rockville, MD

Sarah P

Susan Dunnell, Kensington, MD

Susan Pourian

Susan Valett, Severna Park, MD

Suzanne Jackson, Silver Spring, MD

Suzanne Sundburg, Arlington, VA

Tim Goodfellow, Gaithersburg, Maryland

MBIA Letter of Opposition SB 969.pdf

Uploaded by: Lori Graf

Position: UNF

March 3, 2024

The Honorable Brian Feldman
Chairman, Senate Education, Energy, and the Environment Committee
2 West Miller Senate Office Building
Annapolis, Maryland 21401

RE: MBIA Letter of Opposition SB 969 Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

Dear Chairman Feldman,

The Maryland Building Industry Association, representing 100,000 employees statewide, appreciates the opportunity to participate in the discussion surrounding **SB 969 Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)**. MBIA **opposes** the Act in its current version.

This bill establishes the Stream Restoration Contractors Licensing Board and requires that individuals must be licensed or employed by a licensed entity before performing or soliciting stream restoration services in the State of Maryland. While these measures may enhance the quality of stream restoration work, they will introduce unnecessary costs and delays to building projects.

Our biggest concern with this bill is the potential decrease in competition and choice within our industry. Forcing builders and developers to hire licensed contractors will lead to a reduction in the pool of available professionals and will raise the cost to hire them. Additionally, the requirement to involve licensed contractors for minor stream restoration tasks could lead to project slowdowns and increased expenses. We believe that there should be a clear threshold that distinguishes stream restoration projects from other types of construction activities like installing a crossing.

While the bill aims to ensure higher standards in stream restoration services, MBIA believes that the associated regulatory burden will outweigh the benefits and ultimately reduce the efficiency and cost-effectiveness of construction projects across our State.

For these reasons, MBIA respectfully urges the Committee to give this measure **an unfavorable** report. Thank you for your consideration.

For more information about this position, please contact Lori Graf at 410-800-7327 or lgraf@marylandbuilders.org.

cc: Members of the Senate Education, Energy, and the Environment Committee

SB 0969 Lynn Parsons-Unfavorable.pdf

Uploaded by: Lynn Parsons

Position: UNF

Testimony to the **Education, Energy, and the Environment Committee**

SB 0969 Stream and Watershed Restoration – Stream Restoration Contractor Licensing 2 and Chesapeake and Atlantic Coastal Bays Restoration and Funding 3 (Whole Watershed Act)

Act Position: Unfavorable

March 4, 2024

Dear Honorable Senator Feldman and Committee Members,

I am pleased to see bills that, by title, imply protection for our Maryland Natural Resources. As a 64 year old, life-long Maryland resident with strong appreciation for our natural spaces, this topic really matters to me. I see healthy natural spaces declining rapidly. I am also a Montgomery County Weed Warrior trained in recognizing and removing invasive species from the parks, a volunteer salt watch monitor and a Frog Watch volunteer hoping to monitor and help improve a worsening situation.

I recognize that climate change has caused an increase in the incidence of intense storms increasing the rate of erosion and this is compounded by the increase in storm runoff from ever expanding impervious surfaces due to development. I understand that the construction projects within streams to reinforce infrastructure (roads and buildings) are inevitable given the damage caused by these events. Emphasis should be on mitigation strategies out of the parks and natural spaces. Much tighter restrictions and strict oversight need to be placed on projects deemed absolutely necessary in a natural habitat.

I believe the so called “stream restorations” currently occurring within the heart of parks and natural spaces where infrastructure protection is not the motivation are doing more harm than good. These efforts bulldoze the increasingly rare natural ecosystem which evolved over centuries and is now struggling to survive pressures caused by human activity. They clear the area to construct tidy but unnatural, bolder-reinforced, above ground stormwater drains with well-intended goal of restoring the habitat to some semblance of a natural ecosystem. I am not aware of any successful efforts to do such restoration where there is not a committed force do requisite ongoing maintenance.

Small Native trees are planted as well as native understory plants and I support that activity 100%. Though invasive plants may have been apparent prior to construction, the tremendous soil disturbance and removal of canopy trees accelerates the spread of these species such that any native plants introduced are quickly overtaken in a matter of a few years. I’m not sure what survival rate is expected for the young trees planted but the rate of loss appears significant.

Once these projects are completed, I believe there is an agreement to monitor and maintain the area for 5 years. As a volunteer who spends an inordinate amount of time

attempting to control invasive plants in the parks, I have yet to see signs of effective maintenance following the implementation of these projects. Without a dedicated regular effort by TRAINED individuals, in my opinion, the characterization of maintenance is misleading even for the initial five year period.

I expect this bill as written will further facilitate and accelerate the conversion of our streams to rocky storm drains and accelerate the replacement of suitable habitat for our native species with an overgrowth of invasive plants with a minimal inconvenience and expense to those who seek the accreditation. I do believe that any stream work requires qualified individuals to understand the impact of such activity and enforce strong adherence to protective practice. I don't see that this bill can possibly facilitate that end.

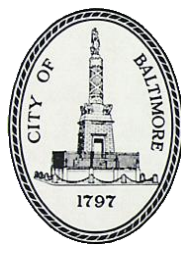
Respectfully,

Lynn Parsons
Kensington, MD

SB0969-EEE-SWA.pdf

Uploaded by: Nina Themelis

Position: UNF



BRANDON M. SCOTT
MAYOR

*Office of Government Relations
88 State Circle
Annapolis, Maryland 21401*

SB 969

March 5, 2024

TO: Members of the Education, Energy and the Environment Committee

FROM: Nina Themelis, Director of the Mayor's Office of Government Relations

RE: Senate Bill 969 – Stream and Watershed Restoration – Stream Restoration Contractor Licensing and Chesapeake and Atlantic Coastal Bays Restoration and Funding (Whole Watershed Act)

POSITION: OPPOSE

Chair Sen. Brian J. Feldman, Vice Chair Sen. Cheryl C. Kagan, and Members of the Committee, please be advised that the Baltimore City Administration (BCA) **opposes** Senate Bill 969.

SB 969 would establish the Stream Restoration Contractors Licensing Board and require those who are contractors or employed by an individual or entity that is licensed as a stream restoration contractor before the person performs or solicits to perform stream restoration contractor services in the State. This legislation would also require the Department of the Environment to provide notices of certain violations to a stream restoration contractor.

The Baltimore City Department of Public Works of Baltimore City opposes this bill for the following reasons:

1. The definition of “stream restoration contractor services” is too expansive by including any disturbance within the stream channel, not just the environmental restoration activities as defined by the Chesapeake Bay Program. Any work within a stream channel, regulated floodplain, or wetland already requires federal and state permits, which typically require a five-year monitoring period after construction. This legislation doesn't reflect how these permits would be related to the proposed license.
2. There isn't a clear timeline for the Licensing Board and associated regulations, exams, and training to be established. The State's prioritization for establishing a license for stream restoration contractors over other best management practices (BMPs) that are approved to improve water quality appears to be more of a challenge to this type of BMP than an endorsement.
3. The Bay Restoration Fund (and the associated fee) was created to fund projects to reduce pollutant loads associated with municipal sanitary sewer services. We have concerns with using these funds for projects other than its main purpose of sewer infrastructure. We also have concerns about transferring funds from the Clean Water Commerce Account for the Whole Watershed Fund if the funds are used for the same intent.
4. The criteria for Whole Watershed Restoration Partnership seems prohibitive to urban area applications using language such as “rapid delisting of streams” or “rapidly improving conditions”, regardless of the other language related to “benefitting overburdened and underserved communities”. The legislation does not recognize that most impaired watersheds are already regulated by MDE under an MS4 permit, which requires jurisdictions to submit TMDL implementation plans.

For these reasons, the Baltimore City Administration respectfully requests an unfavorable report on SB 969.

BOIES.SB798.FAV.pdf

Uploaded by: Sharon Boies

Position: UNF

SB798 – Stream Restoration Contractors Licensing Board

COMMITTEE - Education, Energy, and the Environment

Testimony on SB798

POSITION – Favorable with amendments

Hearing Date - March 5, 2024

Thank you for this opportunity to testify on behalf of the grassroots organization, Protect Our Streams. My name is Sharon Boies.

1. Maryland's native stream corridors and ecosystems are invaluable, irreplaceable...and finite. Many streams are the headwaters for sources of clean drinking water. Stream ecosystems encompass unique bio- diversity with climate resilient DNA. Mature established stream corridor forests absorb stormwater runoff, they capture and retain nutrients and silt and sediment and recharge the groundwater. Shady forests are the counter measure for heat islands, they sequester carbon, produce oxygen, and provide critical habitat for wildlife. Wooded natural stream corridors also provide us with a healthy connection with nature.

<https://www.nasa.gov/press-release/nasa-shares-first-images-from-us-pollution-monitoring-instrument/> - Please review the image of the air pollution over Howard County and Central Maryland, we need our mature trees.

2. Maryland's stream ecosystems are complex, fragile and under stress. Maryland streams have been placed under enormous pressure as they receive more polluted stormwater runoff and silt and sediment from our actions that include deforestation, paving, and development, and from increasing amounts of precipitation due to climate change.

3. Maryland's forested stream corridors are also threatened by heavily engineered stream restoration practices. Maryland Department of the Environment awards obligatory, TMDL and other types of credits to MS4/ NPDES permit holders for restoration activities in Maryland watersheds. Stream restoration (as defined by the state of Maryland) is a common way to generate credits within this Total Maximum Daily Load Reduction system. A second driver of stream restorations in Maryland is the need for mitigation credits which are sold to developers and others to offset permanent environmental harm elsewhere. In both cases, credit generation is now big business for both municipalities and contractors. Most stream restorations in Maryland fall into two categories of designed approaches:

- those focused on heavily engineered practices such as stream bank removal and reinforcement by armoring them with imported rock, step pools and stream channel and meander re-alignment;
- those incorporating ecological considerations but still focused solely on alterations of the stream channel by practices such as filling in the stream channel to raise the stream bed with imported materials and loose substrates which can wash out during a large rain event.

However, studies are finding that designed stream “restoration” projects like these lack effectiveness in biological improvement (uplift) for aquatic organisms, even over time. Finally, they are unlikely to deliver even the hoped-for stream flow management over time because the problem of upland run-off volumes and rates remains unchanged or has worsened. That is why these engineered systems have a life expectancy of about 10 years and many require unanticipated repair so soon after completion which can cost more to repair than the original project (Lower Booze Creek¹). To summarize, we are fooling ourselves if we think we can tear streambeds up, remove large numbers of mature trees in the process, and then recreate a new drainage system that functions like a natural stream. We must stop converting our natural resources into stormwater management facilities but calling them “restored” streams and expect them to be healthy.

<https://www.youtube.com/watch?v=NvTvPnG6Qs8> - Please watch this short video of a typical stream restoration.

4. There are alternative approaches. Preserving mature trees and installing BMP’s in the upland watershed have demonstrated storm water control effectiveness and often cost less. Fortunately, there are 31 other alternatives to construction-heavy and stream channel-centric restoration methods available to help reduce stream flows and that generate credits within MDE’s Accounting Guidance to meet MS4 permit credit obligations. These “green” approaches address the run-off problem at its source, reducing drainage to subject streams from upland areas. Techniques include strategic use of rain gardens, bioretention techniques, tree plantings (as opposed to counterproductive vegetation removal), permeable pavement, and native lawn vegetation. These upland practices reduce stormwater run-off before it can enter streams and can ultimately eliminate the need for disruptive streambed alterations altogether. Scientific evidence is showing alternative approaches such as these are more effective than engineered approaches at restoring biological assets of streams.

5. Maryland law should incentivize stream restoration approaches that preserve trees, and capture stormwater runoff where it’s occurring and discourage approaches that result in ever more tree loss and without requiring proof or evidence of improvements to water quality or biological uplift. Maryland also should incorporate an accounting process for public review on the extent to which Maryland stream resources, including upland forests, have been conserved, or lost. There are not enough stream resources in the state of Maryland for the current “trial and error” approach to stream restorations driven by the MS4 program. Once we’ve lost them, they are gone forever. Maryland should take a precautionary approach by incentivizing less destructive methods.

6. Without amendment, SB798 could have the effect of closing the door to improvements in the future. While it is clear much effort has gone into this legislation and other related stream restoration legislation currently before this chamber, left unamended, SB798 will, perhaps unintentionally, cement in place current heavily engineered approaches to stream restorations which are so destructive to mature trees, native streams, and existing ecosystems.

If this legislation is passed or not carefully amended, this may be “it” for Maryland’s riparian forests. Notably, though planted saplings are a requirement for obtaining a waiver from The

1

<https://www.google.com/url?q=https://www.montgomerycountymd.gov/water/restoration/booze-creek.html&sa=D&source=docs&ust=1709583605896723&usg=AOvVaw0sOqtlMjnkY5HaaXjdmBjo>

Forest Conservation Act, saplings do not equal mature trees when it comes to carbon storage and eco-benefits. That is, we can't plant our way out of this loss. Saplings do not produce acorns. They do not store metric tons of carbon.

Please watch this short video about deforestation and carbon storage, we are losing Oaks in stream restorations at an alarming rate <https://www.youtube.com/watch?v=0D0zp7Q4YnE>

Recommendations:

- Incentivize tree preservation (not just replanting saplings), and “green” restoration generally, in all future Maryland stream restorations:
 - Provide additional funding to MDE by eliminating the exemption of application fees for stream restoration projects.
 - Require pre- and post-project mature tree maps and a preservation plan.
 - Require applications to include plans that specify how projects will improve or align with goals regarding biological and ecological uplift, water quality, forest preservation, and reduce the impacts of climate change.
 - Require expanded public notice, transparency, and community engagement in the process.
 - Require baseline testing and erosion studies with bank pins – not just visual checks, to ensure project success after completion with penalties for projects that fail.

- The licensing board will legitimize a practice that is intrinsically destructive and has not proved to be effective at restoring the Chesapeake Bay despite decades of insisting this practice would do that very thing, and despite our state having paid millions to billions of dollars to a handful of private contractors who have financially benefited handsomely off of our state resources. Amend or replace the Licensing Board with a scientific advisory board comprising experts without direct financial reliance on the stream restoration industry. A few of many concerns include:
 - Overweighted stream restoration industry membership on the licensing board (3 of 7 members) which could lead to conflicts of interest or at least give the appearance to members of the public.
 - Not all Maryland counties have representation by a board member, some counties have been excluded.
 - The licensing board insularity; they establish policies and procedures for themselves including where and how often they meet, and how they vote for a chair and a co-chair.
 - It's unclear if the meetings will be open to the public.
 - The board will employ staff that will work to streamline and expedite the approval and permitting process.
 - The board will determine the requirements for eligibility for obtaining and retaining a stream restoration contractors license.
 - The requirement of only one licensed employee for an entire company to be considered as licensed is insensitive to the size of the company. Could one license be considered sufficient for a company of say 30 employees? 60? Clearly to say people driving excavators in the streams would now be “licensed” is meaningless under this provision as drafted.

Conclusions:

Our state does not need a more streamlined and expedited permitting process, it needs a paradigm shift, that's what the CESR report indicates. We're told restorations have "lag" time. But if a stream hasn't recovered in 5 years, and a stream restoration has a 10 year life expectancy, should this be considered a failure? What if it hasn't come back in 10 years? Shouldn't the stream be fully recovered by the end of the project's life expectancy if anyone is going to claim these projects are successful or provide any benefits? If no one is checking after 5 years, how can anyone say that?

- I oppose solicitation of stream restorations by contractors, that seems like chasing credits.
- We should not allow stream selection for these projects to be determined by just who will allow it.
- We should not legitimize a practice that is still requiring 20 million dollar pilot projects, 30 years after we have been permitting them, to determine if they work or not.
- The health of the bay has shown little improvement and who can determine how much of that little bit of improvement can scientifically be attributed to stream restorations? Where's the proof?

If these suggested comments are considered and amendments addressing them are added to the bill, my hope would be that stream restorations practices in Maryland will become more aligned and consistent with what the current science suggests we must do to improve the health of our streams and to reduce the unintended consequences of the currently used processes.

Thank you for this opportunity to submit testimony regarding potential risks of SB798 , Senator Fry-Hester's legislation as currently drafted and ways to improve it. I urge you to only vote in favor of this bill if all of the above amendments are adopted, otherwise I oppose this bill and I ask you to vote unfavorable, if the vote is on the current suggested language.

Sharon Boies

Columbia MD

Protect Our Streams

RESOURCES

Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Guidance for National Pollutant Discharge Elimination System Stormwater Permits"

<https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/Final%20Determination%20Dox%20N5%202021/MS4%20Accounting%20Guidance%20FINAL%2011%2005%202021.pdf> 1

Fejerskov, Morten & Kristensen, Klaus & Friberg, Nikolai. (2014). Re-Meandering of Lowland Streams: Will Disobeying the Laws of Geomorphology Have Ecological Consequences?. *PloS one*. 9. e108558.

Hildebrandt et al Quantifying the ecological uplift and effectiveness of differing stream restoration approaches in Maryland Final Report Submitted to the Chesapeake Bay Trust for Grant #13141. Robert H. Hilderbrand and Joseph Acord, Appalachian Laboratory University of Maryland Center for Environmental Science And Collaborators Timothy J. Nuttle and Ray Ewing Civil and Environmental Consultants, Inc. 333 Baldwin Road, Pittsburgh, PA 15205

Johnson, Matthew & Thorne, Colin & Castro, Janine & Kondolf, George Mathias & Mazzacano, C. Zee & Rood, Stewart & Westbrook, Cherie. (2019). Biomic river restoration: A new focus for river management. *River Research and Applications*. 36. 10.1002/rra.3529.

Laub, Brian & McDonough, Owen & Needelman, Brian & Palmer, Margaret. (2013). Comparison of Designed Channel Restoration and Riparian Buffer Restoration Effects on Riparian Soils. *Restoration Ecology*. 21. 10.1111/rec.12010.

Nelson, Kären & Palmer, Margaret & Pizzuto, James & Moglen, Glenn & Angermeier, Paul & Hilderbrand, Robert & Dettinger, Michael & Hayhoe, Katharine. (2008). Forecasting the Combined Effects of Urbanization and Climate Change on Stream Ecosystems: From Impacts to Management Options. *Journal of Applied Ecology*. 46. 154 - 163. 10.1111/j.1365-2664.2008.01599.x.

Palmer, Margaret & Hondula, Kelly & Koch, Benjamin. (2014). Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals. *Annual Review of Ecology, Evolution, and Systematics*. 45. 247-269. 10.1146/annurev-ecolsys-120213-091935.

Pennino, Michael & McDonald, Rob & Jaffe, Peter. (2016). Watershed-scale impacts of stormwater green infrastructure on hydrology, nutrient fluxes, and combined sewer overflows in the mid-Atlantic region. *Science of The Total Environment*. 565. 10.1016/j.scitotenv.2016.05.101[1]

Wood, K.L., Kaushal, S.S., Vidon, P.G. et al. Tree trade-offs in stream restoration: impacts on riparian groundwater quality. *Urban Ecosyst* 25, 773–795 (2022). <https://doi.org/10.1007/s11252-021-01182-8>

Wortley, Liana & Hero, Jean-Marc & Howes, Michael. (2013). Evaluating Ecological Restoration Success: A Review of the Literature. *Restoration Ecology*. 21. 10.1111/rec.12028.

<https://www.umces.edu/research-highlights/restoring-streams#:~:text=Bob%20Hilderbrand%2C%20an%20associate%20professor%20at%20the%20University,back%20to%20the%20thriving%20ecosystem%20they%20once%20were.>

<https://www.epa.gov/chesapeake-bay-tmdl>

https://www.fema.gov/pdf/about/regions/regionx/Engineering_With_Nature_Web.pdf
<https://www.baltimoresun.com/2023/10/13/environmental-groups-concerned-by-upcoming-construction-along-herring-run-in-northeast-baltimore/> - Please read this article about a neighborhood that could be impacted by a project in Baltimore.

https://www.thebaltimorebanner.com/community/climate-environment/stream-restoration-howard-county-plumtree-branch-EZWMOFO40NFNHPPNKTBIKQXGBM/?schk=&rchk=&utm_source=The+Baltimore+Banner&utm_campaign=9a3781df72-NL_AMSC_20231103_0600&utm_medium=email&utm_term=0_-9a3781df72-%5BLIST_EMAIL_ID%5D&mc_cid=9a3781df72&mc_eid=03e98bc6d3 - Please read this article about a neighborhood that stood to be impacted by a project. This is a neighborhood in Howard County.

<http://www.saveplumtreebranch.org/>

<https://www.baltimorebrew.com/2023/12/23/restoration-of-baltimores-stony-run-is-failing-again-residents-and-scientists-say/> - please read this article about a failing project in Baltimore.

Results from the Howard County DPW NPDES permit, these projects were performed for pollution credits-

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”.

Boies.SB969.UNFAV.pdf

Uploaded by: Sharon Boies

Position: UNF

SB969 - Whole Watershed Act

COMMITTEE - Education, Energy and the Environment

Testimony on SB969

POSITION – Unfavorable [without amendments]

Hearing Date - March 5, 2024

Thank you for this opportunity to testify on behalf of the grassroots organization, Protect Our Streams. My name is Sharon Boies.

1. Maryland's native stream corridors and ecosystems are invaluable, irreplaceable, and all too finite.

Maryland's natural forest-covered riparian stream ecosystems are complex and fragile. Many Maryland streams begin as cold or cool springs and are the headwaters for crucial sources of clean drinking water. Stream ecosystems encompass unique biological communities comprising species which have co-evolved over untold amounts of time to form a healthy functioning biological community. They also provide critical human services. For example, established stream corridor forests absorb stormwater runoff, capture and retain nutrients, silt and sediment and recharge the groundwater.

And they are increasingly important during our era of climate change. Shady forests are the counter measure for heat islands, they sequester carbon, produce oxygen, and provide critical habitat for birds, reptiles, amphibians, bats, and insects. Finally, wooded natural stream corridors provide us with a healthy connection with nature.

<https://www.nasa.gov/press-release/nasa-shares-first-images-from-us-pollution-monitoring-instrument/>

- Please review the image of the air pollution over Howard County and Central Maryland

2. Maryland's natural stream ecosystems are complex, fragile and under stress. Maryland streams have been placed under enormous pressure as they receive more polluted stormwater runoff and silt and sediment from our actions that include deforestation, paving, and development, and from increasing amounts of precipitation due to climate change.

3. Maryland's forested stream corridors are also threatened by heavily engineered stream restoration practices. As you may know, the Maryland Department of the Environment awards obligatory, TMDL and other types of credits to MS4/NPDES permit holders for restoration activities in Maryland watersheds. Stream restoration (as defined by the state of Maryland) is a common way to generate credits within this Total Maximum Daily Load Reduction system. A second driver of stream restorations in Maryland is the need for mitigation credits which are sold to developers and others to offset permanent environmental harm elsewhere. Whether in service to state water quality objectives or offsets, credit generation is the primary driver of "stream restoration" project proposals. In both cases, credit generation is now big business for contractors. Currently, the nature of the stream restoration projects that may potentially generate water quality credits under this program ranges widely.

Three fundamental types of stream restoration have been described in the scientific literature:

- those focused on heavily engineered practices such as stream bank removal and reinforcement by armoring them with imported rock, step pools and stream channel and meander re-alignment;
- those incorporating ecological considerations but still focused solely on alterations of the stream channel by practices such as filling in the stream channel to raise the stream bed with imported materials and loose substrates which can wash out during a large rain event; and

- those incorporating measures addressing the broader watershed area to attenuate storm water run-off to the stream channel.

Unfortunately, the most common approaches in practice are those focused on direct stream bank and channel alterations and reinforcements to armor stream banks against erosion caused by heavy stormwater flows (the first two). These heavily engineered approaches (also known as “designed” approaches) necessitate counterproductive, often severe disruption of existing stream ecological communities, and removal of mature trees to give heavy construction machinery access. Removing mature trees along streams seriously degrades the stream system *even if saplings are then planted*. Further, studies are finding that designed stream “restoration” projects like these lack effectiveness in biological improvement (uplift) for aquatic organisms, even over time. To put it plainly, as a functioning ecological system, the stream may never recover, new tree plantings or not. Finally, the engineered changes are unlikely to deliver even the hoped-for stream flow management over time because the problem of upland run-off volumes and rates remains unchanged or has worsened. That is why these engineered systems have a life expectancy of about 10 years and many require unanticipated repair so soon after completion which can cost more to repair than the original project (An example of this is Lower Booze Creek) see link below.

https://www.google.com/url?q=https://www.montgomerycountymd.gov/water/restoration/booze-creek.html&sa=D&source=docs&ust=1709559407394120&usg=AOvVaw1WJ_CqxQKUvPHICGYQgiWt

To summarize, we are fooling ourselves if we think we can tear streambeds up, remove large numbers of mature trees in the process, and then recreate a new drainage system that functions like a natural stream. We must stop converting stream ecosystems into stormwater management facilities and expect them to be healthy.

<https://www.youtube.com/watch?v=NvTvPnG6Qs8> - Please watch this short video of a typical stream restoration.

4. There are alternative approaches. Preserving mature trees and installing BMP's in the upland watershed have demonstrated storm water control effectiveness and it often costs less. Fortunately, there are 31 other alternatives to construction-heavy and stream channel-centric restoration methods available to help reduce stream flows and that generate credits within MDE's Accounting Guidance to meet MS4 permit credit obligations. They are simply overlooked and underutilized. These “green” approaches address the run-off problem at its source, reducing drainage to subject streams from upland areas. Techniques include strategic use of rain gardens, bioretention techniques, tree plantings (as opposed to counterproductive vegetation removal), permeable pavement, and native lawn vegetation. These upland practices reduce stormwater run-off before it can enter streams and can ultimately eliminate the need for disruptive streambed alterations altogether. Scientific evidence is showing alternative approaches such as these are more effective than engineered approaches at restoring biological assets of streams.

5. Maryland law should incentivize stream restoration approaches that preserve trees, and capture stormwater runoff where it's occurring and discourage approaches that result in ever more tree loss and without requiring proof or evidence of improvements to water quality or biological uplift. Maryland guidance and law surrounding stream restorations should disincentivize reengineered stream systems and incentivize green restoration alternatives. Maryland also should incorporate an accounting process for public review on the extent to which Maryland stream resources, including upland forests, have been conserved, or lost. There are not enough stream resources in the state of Maryland for the current “trial and error” approach to stream restorations driven by the MS4 program. Once we've lost them, they are gone forever. We rely on the health of the remaining ecosystem and populations of wildlife to repopulate the construction site but if there isn't any wildlife left, or habitat to return to, they do not come back. Maryland should take a precautionary approach by incentivizing less destructive methods.

6. Without amendment, SB969 could have the effect of closing the door to improvements in the future.

While it is clear much effort has gone into the legislation currently before this chamber, left unamended, the Whole Watershed Act will, perhaps unintentionally, cement in place current heavily engineered approaches to stream restorations which are so destructive to mature trees, native streams, and existing ecosystems.

If this legislation is passed or not carefully amended, this may be “it” for Maryland’s riparian forests. In particular, re-planted saplings are a requirement for obtaining a waiver from The Forest Conservation Act, but saplings do not equal mature trees when it comes to carbon storage and eco- benefits, that is, we can not plant our way out of this loss. Saplings do not produce acorns.

<https://www.youtube.com/watch?v=0D0zp7Q4YnE> - Please watch this short video about deforestation and carbon storage, we are losing Oaks in stream restorations at an alarming rate.

There are many ways to improve the process. The challenge is how do we ensure that our projects don’t go overboard to the detriment of our streams? I appreciate this bill recognizes that changes need to occur. Therefore, I suggest the following amendments at a minimum:

- Provide additional funding to MDE by eliminating the exemption of application fees for stream restoration projects.
- Require pre- and post-project mature tree maps and a preservation plan.
- Require applications to include plans that specify how projects will improve or align with goals regarding biological and ecological uplift, water quality, forest preservation, and reduce the impacts of climate change.
- Require expanded public notice, transparency, and community engagement in the process.
- Require baseline testing and erosion studies with bank pins – not just visual checks, to ensure project success after completion with penalties for projects that fail.

7. Necessary additional changes. In addition to these concerns, I must state the following:

- I oppose the licensing board and suggest an amendment to replace it with a scientific advisory board comprised of experts without direct financial reliance on the stream restoration industry.
- I oppose funding the 20 million dollars Whole Watershed Fund when our state is facing a budget shortfall and we are being told that there isn’t any money for testing and compliance for existing projects or enough staff for MDE to hold meetings for all new stream restoration projects.
- I oppose solicitation of stream restorations by contractors, that seems like chasing credits. We should not allow stream selection for these projects to be determined by just who will allow it. We should not legitimize a practice that is still requiring 20 million dollar pilot projects, 30 years after we have been permitting them, to determine if they work or not. The health of the bay has shown little improvement and who can determine how much of that little improvement can scientifically be attributed to stream restorations? Where’s the proof?

8. Regarding the proposed pilot projects. Finally, I question after Maryland has permitted over 700 projects in the past decade or so and for hundreds of millions of dollars, why would we spend 20 million more dollars on 5 pilot projects to analyze the results? Wouldn’t the 20 million dollars be better spent on a study of the 700 projects, of all ages and practices applied, to determine the results of these projects first before we allow this practice to continue? I propose as an alternative, a pause, our natural processes, and natural resources have been through a lot and need a break and so does our wildlife. I propose Maryland spend the 20 million dollars to study what we have already done to determine if there has been any benefit at all, have the trade- offs been worth the losses? With no baseline testing and monitoring and only visual checks instead of using erosion bank pins for years, how can anyone honestly say?

In conclusion, if these suggested amendments are added to the bill, my hope would be that stream restoration practices in Maryland will become more aligned and consistent with what the current science suggests we must do to improve the health of our streams and the bay, and to reduce the unintended consequences as a result of the currently used processes.

Thank you for this opportunity to submit testimony regarding potential risks of SB969. Senator Elfreth's legislation as currently drafted and ways to improve it. I urge you to only vote in favor of this bill if all of the above amendments are adopted, otherwise I oppose this bill and I ask you for an unfavorable report if the vote is on the current suggested language.

Sharon Boies

Columbia MD

Protect Our Streams

GENERAL RESOURCES

Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Guidance for National Pollutant Discharge Elimination System Stormwater Permits"

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Cappiella, K., T. Schueler, and T. Wright. 2005. *Urban Watershed Forestry Manual: Part 1*.

Center for Watershed Protection. 2017. Making Urban Trees Count. This web-based article included a review of 159 publications.

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North Street Neighborhood Association. 2009. Watering-Up: Studies of Groundwater Rising After Trees Cut.

Palmer, Margaret & Hondula, Kelly & Koch, Benjamin. (2014). Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals. *Annual Review of Ecology, Evolution, and Systematics*. 45. 247-269. 10.1146/annurev-ecolsys-120213-091935.

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.

Pennino, Michael & McDonald, Rob & Jaffe, Peter. (2016). Watershed-scale impacts of stormwater green infrastructure on hydrology, nutrient fluxes, and combined sewer overflows in the mid-Atlantic region. *Science of The Total Environment*. 565. 10.1016/j.scitotenv.2016.05.101[1]

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.

Wood, K.L., Kaushal, S.S., Vidon, P.G. et al. Tree trade-offs in stream restoration: impacts on riparian groundwater quality. *Urban Ecosyst* 25, 773–795 (2022). <https://doi.org/10.1007/s11252-021-01182-8>

Wortley, Liana & Hero, Jean-Marc & Howes, Michael. (2013). Evaluating Ecological Restoration Success: A Review of the Literature. *Restoration Ecology*. 21. 10.1111/rec.12028.

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.

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.

<https://www.umces.edu/research-highlights/restoring-streams#:~:text=Bob%20Hilderbrand%2C%20an%20associate%20professor%20at%20the%20University,back%20to%20the%20thriving%20ecosystem%20they%20once%20were.>

<https://www.epa.gov/chesapeake-bay-tmdl>

https://www.fema.gov/pdf/about/regions/regionx/Engineering_With_Nature_Web.pdf

<https://www.baltimoresun.com/2023/10/13/environmental-groups-concerned-by-upcoming-construction-along-herring-run-in-northeast-baltimore/> - Please read this article about a neighborhood who could be impacted by a project.

https://www.thebaltimorebanner.com/community/climate-environment/stream-restoration-howard-county-plumtree-branch-EZWMOFQ4ONFNHPPNKTBIKQXGBM/?schk=&rchk=&utm_source=The+Baltimore+Banner&utm_campaign=9a3781df72-NL_AMSC_20231103_0600&utm_medium=email&utm_term=0_-9a3781df72-%5BLIST_EMAIL_ID%5D&mc_cid=9a3781df72&mc_eid=03e98bc6d3 - Please read this article about a neighborhood that stood to be impacted by a project.

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<https://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/Final%20Determination%20Dox%20N5%202021/MS4%20Accounting%20Guidance%20FINAL%2011%2005%202021.pdf>

US Environmental Protection Agency. 2023. Soak up the Rain: Trees Help Reduce Runoff

ARTICLES SHOWING ENGINEERED STREAM RESTORATIONS ARE NOT DELIVERING DESIRED OUTCOMES

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.

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.

Budelis, Drew, Lauren McDonald, Steve Schreiner, and Donald E. Strelbel. 2020. An Evaluation of Forest Impacts Compared To Benefits Associated with Stream Restoration. Study funded by Chesapeake Bay Trust Award #14833. February 2020
Cappiella, K., T. Schueler, and T. Wright. 2005. Urban Watershed Forestry Manual: Part 1.

Center for Watershed Protection. 2017. Making Urban Trees Count. This web-based article included a review of 159 publications.

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.

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.

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.

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.

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.

Hilderbrand, Robert H. 2020. Determining Realistic Ecological Expectations in Urban Stream Restorations. Study funded by Chesapeake Bay Trust Award #15823.

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

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.

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.

Methods Integrate and Quantify Fluvial Processes and Channel Response? Abstract from conference paper. DOI publication 10.1061/40792(173)584.

North Street Neighborhood Association. 2009. Watering-Up: Studies of Groundwater Rising After Trees Cut.

North Street Neighborhood Association. 2009. Watering-Up: Studies of Groundwater Rising After Trees Cut.

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.

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”

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. 1117-1119.

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.

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.

US Environmental Protection Agency. 2023. Soak up the Rain: Trees Help Reduce Runoff

RESULTS FROM WATERSHED MONITORING IN WHICH RESTORATIONS HAVE OCCURED.

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”.

SB0969.pdf

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Position: UNF

SB0969 is a private public partnership PPP that is a way to direct and make money from what looks like innocent do-gooding. It is not.

The New Socialism Is a Public-Private Partnership

<https://mises.org/austrian/new-socialism-public-private-partnership>

Please say no to this bad socialist bill.

Suzanne Price
AACo, MD