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:
 - o 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.

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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%20N 5%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.2016.05.101

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. 1117-119.

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.