

Testimony on House Bill 1284 – Wetlands and Waterways Program – Stream Restoration Projects

Hearing Date - March 6, 2024

Dear Members of the Environment and Transportation Committee,

I strongly urge you to support HB 1284 and consider these comments for amendments.

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

“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) Per sections 5-203.2 D and 5-203.2 E, increased participation is the cornerstone of our democracy and primary access to our government. Increasing community engagement, and transparency of these stream projects, is critical to increasing public participation. As such, I offer the following comment for amendment.

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.

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.

- 3) Per section 5-203.2 B(1) and 5-293.2 B(4), I strongly agree that any stream restoration authorization application, and for that matter all projects related to achieving the objective of the Clean Water Act, clearly state the specific objectives of the project with a detailed description of how the project will achieve measurable and quantifiable goals, especially for biological and ecological uplift. I would like to comment and provide some clarification on this.

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 primary achievable goals 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 by whom, and the primary measurable indicators used to determine that progress or success. The Chesapeake Research Consortium's Scientific and Technical Advisory Committee (STAC) recently discussed the difficulty stream restoration practices face. Their findings support the need for monitoring incremental progress and overall project success.

- 4) Per section 5-203.2 A (2), I strongly agree that any stream restoration authorization application, and for that matter all projects related to achieving the objective of the Clean Water Act, contain a plan for monitoring biological uplift including pre and post monitoring and upstream and downstream monitoring. The following comments amplify this section.

Monitoring to determine the success of projects is very cost effective but is not done sufficiently. It is essential. Too many projects cannot show their progress because there is no "pre" monitoring – no baseline from which to compare a "before and after" scenario, and often there is no baseline upstream of the project to show any progress made. *Monitoring should cost less than 5% of the project budget*, and often much less than that. No heavy equipment is involved. A good monitoring program is the **ONLY** way to determine whether the money spent on the projects was worthwhile and the project goals were met. Monitoring is also diagnostic when results just done go the way we expected.

Mathematical modeling is not a substitute for instream monitoring. Stream modeling is a tool to estimate and predict instream physical and chemical outcomes based on a site-specific set of input data. The adage – “garbage-in, garbage-out” applies well. The error rate can be remarkably high in predicting the modeled responses for a natural environment. Modeling is a tool, but monitoring is the only way to know if that tool predicted the accurate outcomes.

Pooled-monitoring is not a substitute for instream monitoring. Pooled-monitoring is a good particular study design for a specified topic when there isn't enough data from any one study to look at patterns of cause and effect, if that is the study topic. Pooled-monitoring cannot be used to determine the success, or incremental progress, and any specific project.

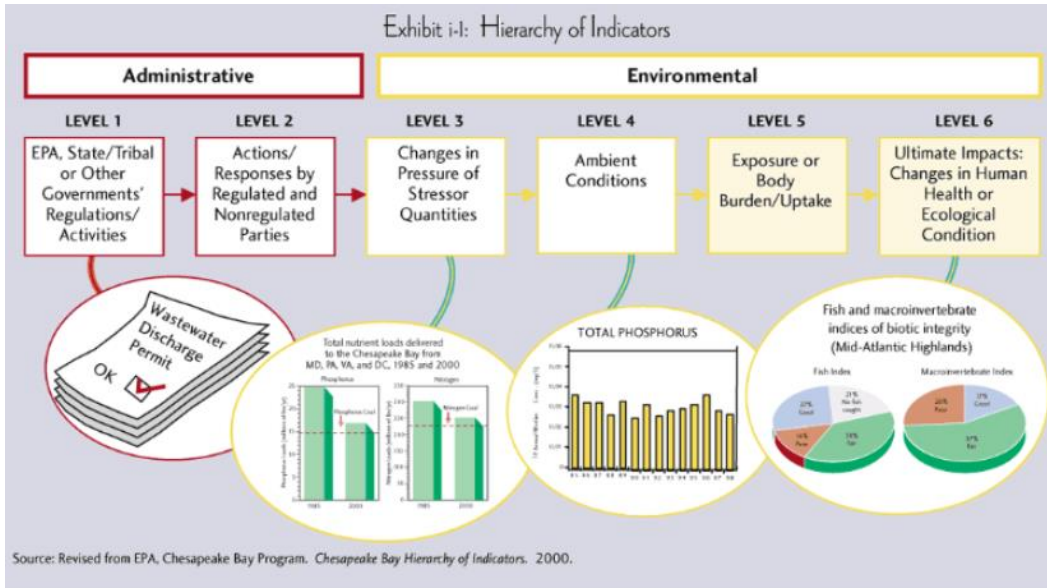
Monitoring and Assessment approaches should clearly be documented in each project proposal. Each project should specify before and after, and control and impact (upstream/downstream) monitoring approach and explain how project success will be determined including all proposed timelines. All previous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

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.

Establish a Scientific and Technical Advisory Committee. Like 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.

Please keep in mind the Hierarchy of Indicators (see image). This hierarchy was developed by EPA's Chesapeake Bay Program 24 years ago, but we still seem to be missing the point. Biological and ecological uplift can only be measured by the “Level 6” indicators shown that reflect ecological health. I have referred to this chart in many presentations to ensure we keep focus on what is important – the ultimate goal of these projects: biological and ecological uplift.

Exhibit i-1: Hierarchy of Indicators



Sincerely,
 Wayne Davis
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