



**TESTIMONY ON STREAM MAINTAINING OUR CREEKS AND STREAMS  
TO PREVENT FLOODING**

Presented to the House Environmental Resources and Energy Committee

By

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April 25, 2022

Good morning, my name is Daryl Miller, and I am the chairman of the Bradford County Board of Commissioners, vice chairman of the Bradford County Conservation District board of directors and 2022 president of the County Commissioners Association of Pennsylvania (CCAP), a non-profit, non-partisan association representing the commonwealth's 67 counties. Thank you for the opportunity to testify today on stream maintenance and restoration in Pennsylvania.

As you may be aware, Bradford County has an extensive stream maintenance and restoration program that has been in progress for many years. The program has seen many successes, but not without significant financial investment. Funding for these projects can make or break the ability to make the progress needed to prevent flooding and properly maintain the many waterways in Pennsylvania. In my testimony, I am sharing statements from both Mike Lovegreen, Bradford County Conservation District Manager, and Joe Quatrini, Bradford County Conservation District Technical Team Leader, as follows.

Mike Lovegreen spent the last 40+ years of his professional life working with individuals and communities to address natural resource issues and can easily say that in our region, stream related issues have been by far the most significant. Below is testimony by Mike:

Streams have adapted to their setting - their respective watershed, over the last 10,000 years (last glacial period). They accomplished that by creating a relatively stable form - depth, cross section, associated flood plains, bed load material, etc. Each of the watersheds that feeds its respective stream system is unique in its precipitation, topography, land cover and soils. In this region - Northern Tier PA and Southern Tier NY - we have the dubious distinction of being in a particularly fragile region for stream stability and recovery from changes or impacts.

Over the last 250 years, we have experienced numerous changes to that setting, which continue to impact on that stability. Mill dams that modified flows, transportation systems that have limited flood plains, development, land alterations associated with that development such as past logging practices etc., drainage projects associated with farming and transportation and even our weather patterns.

Each time we install a driveway on a hillside, install drainage ditches or pave over a part of the landscape without any type of mitigation we take water that once slowly moved across the landscape and rushed it to the receiving stream instead of infiltrating it. The result is, even without considering the significant impact of weather pattern changes, the same amount of water gets to the stream in less time, overwhelming the system. The results are floodplains that are engaging more often and overwhelmed, and the channels themselves adapting to new drainage patterns by enlarging themselves through bank and bed erosion, which in turn creates overwhelming sediment supply that further impacts stream channel capacity.

These stream responses to watershed modification in turn trigger a community response that is often necessary to protect infrastructure and safety. There have been numerous storms in the last several decades where it has been necessary for the PA Department of Environmental Protection (DEP) and COE to issue hundreds of emergency permits to address absolutely essential concerns, often without sound engineering advice other than "put it back the way it was" regardless if "what it was" was a stable functioning stream. Unfortunately, quite often, with the best of intentions, our "stream maintenance" efforts can further destabilize the stream system.

There are both good science and engineering approaches to addressing stream issues. Current laws and regulations provide guidance for these approaches. Policies and practices exist to address watershed and hydrologic impacts. Watershed restoration programs exist. Our challenges are all those historic infrastructure impacts that have been created with best of intentions, and there are limited watershed specific health and functional information for our communities to work with. The reality is that there is never enough funding to provide the engineering and implementation dollars to address those watershed needs.

And finally, "no action" is not a valid solution. The current instability of our stream channels and flooding issues need to be addressed. Until our watersheds and streams can be stabilized, and that is a long and extensive process, the need for addressing those channel instabilities and resulting maintenance issues must be more flexible and adaptive.

To accomplish this there needs to be cultural change both at the state and local level that provides the tools and watershed function understanding so that we can begin the process. This has been a goal of programs such as New York's Emergency Stream Intervention Program and Bradford County's Stream Pilot Program. By giving communities the tools developed by entities such as the USGS and coupling that with providing communities with the knowledge and understanding of the cause and effect of current and future development and stream maintenance activities, we may be able to begin the process of addressing stream instability, by working with the functional system of a stable stream instead of against it.

It won't happen over-night, but we can't keep kicking this down the road. I've personally watched millions of dollars in stream channel project "band-aids" installed and eventually fail by not addressing this issue in a holistic manner. Each time we have a major storm we hold hearings and continue to proceed with the same play book of remedies. The current and future vitality of our Northern Tier communities and the safety of their residents calls to us to finally turn the corner on these issues that have haunted us for generations.

Joe Quatrini is the Bradford County Conservation District (BCCD) Technical Team Leader, who would like to provide a statement as follows:

Joe Quatrini has been BCCD for nearly 20 years and the majority of his work deals with stream-related issues ranging from permitting to complaints to monitoring to restoration. Streams easily generate the most calls to the District. The calls are generally the same, people want to know if they can work in the stream and if permits are required. The District has assisted hundreds of landowners and municipalities to obtain permits for gravel removal, bank stabilization, and culvert replacement. The District also works closely with DEP to assist agency staff with data collection during and immediately following storm events to expedite the emergency permitting process.

It was through this process, as well as working with conservation districts in New York, that we realized a need for a new permitting mechanism in the commonwealth. Our approach has locally become known as the Bradford County Emergency Permit Pilot Program. Although it too has limitations, it offers an opportunity for landowners to regain channel capacity outside of an emergency. That is, instead of waiting for a storm to happen and reacting, we wanted to give landowners the ability to be proactive in an attempt to prevent flooding and flood-related damage to infrastructure in critical areas. Instead of relying on memory to determine what a channel "used to be", we worked with regional staff from the United States Geological Survey (USGS) and combined multiple permanent cross-section data points throughout Bradford County to develop localized maps describing appropriate channel dimensions (width, depth, etc.) based on their location in the watershed.

Instead of an individual receiving a standard Emergency Permit after a storm event and potentially creating a channel that is too wide and too deep, there is basic guidance on just how wide and deep the channel should be in that particular location. Just as important, there is also guidance on how wide a floodplain should be to account for flood events. This information will help create a more stable stream that is able to pass gravel and debris and reduce excessive erosion.

Additionally, education is a major component of this program. To be eligible for the permit, an individual or contractor doing the work must have attended a three-day training focusing on stream stability. Day one consists of mostly in-class learning where we discuss the history of our streams, how they've become unstable, how we continue to destabilize our streams (often unknowingly), recent versus historic rainfall patterns and how to use developed maps and tables to try to regain stability through a stream reach. At the end of day one, we visit a demonstration site prior to construction so participants can see an eligible site in the field, determine proper channel dimensions in the field and discuss construction methodology. Day two consists of participants returning to the active worksite any time during construction to witness the project being installed. Day three consists of a wrap-up as a group at the completed demonstration site to verify the channel dimensions are correct,

discuss potential problem areas within the reach and identify additional opportunities for long-term remediation.

Oftentimes, we feel the educational component of this program is the most important and effective. We've had long-time contractors approach us and comment that they didn't realize what they've traditionally done may be contributing to the problem or a landowner may state that they didn't realize the importance of a floodplain and might now manage their property in a new and more environmentally sensitive way. Again, this program is designed to help individuals identify critical areas where it may be worthwhile to commit valuable resources (time and money).

Science-based stream maintenance and upgrading undersized stream crossings are two immediate areas BCCD is focusing efforts to improve flood resilience and protect critical infrastructure. Also, representing a conservation district that puts a lot of projects on the ground, financial assistance is critical and usually the limiting factor for successful projects. Funding for technical support needs to be made available as well as for project implementation. So many times a good project could be a great project, however funding limits the ability to get there.

We also can't overlook permitting fees and the associated review process. Although most are reasonable, sometimes the cost of engineering or review times for certain permits are a deal breaker before the project even gets started.

In summary, BCCD supports the following actions as a result of this hearing:

1. Provide new permit opportunities for those working in streams (similar to BC Pilot Program)
  - a. more education/training
  - b. more guidance associated with issued permits (especially emergency permits)
  - c. more flexibility when working with partnering agencies or grant funded projects
2. Promote and make it easier for individuals to install appropriately sized culverts and bridges
3. Seek funding for science-based stream maintenance
  - a. construction
  - b. technical assistance
  - c. permit review staff

And now, I present my portion of this testimony:

With so many miles of streams in Bradford County, most landowners face some type of stormwater challenge on their property. Issues range from flooding to property loss and everything in between. We've come to recognize the extreme costs associated with stream

damage and although we can't assist in every situation, we have committed funds to watershed work in three areas: Stream Stabilization, Emergency Response, and Stream Maintenance. Bradford County has for a number of years committed financial resources to the Bradford County Conservation District to support educational and technical assistance in stream restoration related projects.

Since 2006, we have worked with the Conservation District to offer a competitive streambank protection program we call County Initiative. This is primarily a DEP Growing Greener grant funded program with periodic contributions from the DEP Stream Improvement Program. The program allows farmers, landowners, and business owners the opportunity to apply for funding to stabilize streambanks in order to protect their property from erosion. This is a competitive process and sites are ranked against one another based on distance from the stream bank to a home, business, or utility and it also accounts for the amount of sediment that is being washed into the stream. The funding amount varies, but it has become a very successful annual program that protects approximately 10 sites per year. To date, over 100 projects have been completed through this collaborative effort.

In 2021, we also developed the Bradford County Watershed Program. Our office has committed \$200,000 (from our Act 13 funding source) to complete two to three routine bank stabilization projects, respond to emergency stream issues during a storm event, and educate and provide demonstrations related to the BC Pilot program. Again, working directly with the Conservation District, this funding covers technical time spent on project design as well as project construction.

Not only will this funding assist with the projects directly tied to this program, it will provide a great source of match to leverage additional state and federal grants. We have committed a similar budget for 2022.

Although we currently have success receiving funds through the Growing Greener Program and we have additional funding at the local level, we know these funding sources are temporary and competitive. In my role as Commissioner, I've been appointed to sit on the Conservation District Board of Directors and chair the Dirt, Gravel, and Low Volume Road Program Quality Assurance Board (QAB) for BCCD. This is a statewide program that provides dedicated funding for local municipalities to upgrade roads. Through administration by the Conservation District, roads are substantially upgraded to reduce annual maintenance and associated costs. A similar program developed for streams would go a long way to help assist local governments in addressing stream maintenance issues and watershed stability. It is much easier to plan and accomplish work with a known budget than working grant to grant with unknown funding. I believe a similar tool could be developed statewide for streams and a dedicated source of funding could be maintained based on miles of stream, water quality, and other factors.

In summary, I will close my testimony with these thoughts. We cannot continue to ignore a reality that doing nothing to address the continued stream channel degradation taking place in many counties in our commonwealth is not the answer. Optimal stream channel restoration and stream bank stabilization play an enormous role in improving our water quality by reducing erosion.

Thank you again for the opportunity to offer our testimony and for your consideration of these comments. We look forward to continuing to work with you on improving stream maintenance programs and water quality in the commonwealth.