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Testimony as presented at the House Majority Policy Committee's hearing: "Maintaining our Creeks and Streams to Prevent Flooding"

Good afternoon. I grew up on property adjacent to a stream and have personally witnessed all the good and bad that come with one of Pennsylvania's greatest natural resources. I've been with the Bradford County Conservation District (BCCD) for nearly 20 years and the majority of my work deals with stream-related issues ranging from permitting to complaints to monitoring to restoration. Streams easily generate the most calls to our office. The calls are generally the same, people want to know if they can work in the stream and if permits are required. We've assisted hundreds of landowners and municipalities obtain permits for gravel removal, bank stabilization, and culvert replacement. We also work closely with the PA Department of Environmental Protection (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 PA. Our approach has locally become known as the Bradford County Emergency Permit Pilot Program. Although it too has its 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 3-day training focusing on stream stability. Day 1 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 the developed maps and tables to try to regain stability through a stream reach. At the end of Day 1, 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 2 consists of participants returning to the active worksite any time during construction to witness the project being installed. Day 3 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).

Below is a series of photos from a typical site where gravel and debris have accumulated and may cause flooding and property damage. The Bradford County Emergency Pilot Program was instituted here in the Fall of 2019.

Pre-Construction – Loss of channel capacity, debris and gravel blockage, channel avulsion

Post-Construction – Re-established channel, re-connected floodplain, grade control installed

2 years Post-Construction – Channel migrated to the left (facing upstream), but maintained constructed width, depth, and floodplain access on right

Beyond the Pilot Program, Bradford County Conservation District has made a commitment to identifying critically undersized and failing municipal and private stream crossings (i.e., culverts and bridges). Throughout the summer of 2018 and 2019 seasonal employees assessed over 800 stream crossings in Bradford County and entered the data into the North Atlantic Aquatic Connectivity Collaborative (NAACC) database. The database helps prioritize stream crossing replacements by ranking the sites based on the severity of stream channel constriction and the structures modification of normal streamflow patterns. There is also a visual tool where the crossings are identified on a map and color-coded to the severity of stream channel impacts. This is a great tool to show the need for replacing ineffective culverts and can be used to compare areas often plagued by storm damage to determine potential causes of flooding. Very often, in areas where a landowner may be losing property, or a municipality may be losing a road to storm damage and gravel accumulation, there is an undersized culvert involved and may not even be considered as contributing to the problem.

Below are photos from two culvert replacement projects in Bradford County showing the extent to which some of these crossings may be undersized. Which would you prefer to pass water, gravel, and debris during a storm event?

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. A cultural change through education as Mike Lovegreen spoke about and a holistic watershed approach described by Erica Tomlinson are certainly the goals throughout the state and very much supported by BCCD. Also, representing a conservation district that puts a lot of projects on the ground, I know 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. I often hear a municipality replaced a culvert with something new that still doesn't address the issues because that is what they had, or their budget couldn't handle the proper upgrade. Also, landowners usually do what they can "afford" during stream maintenance, which may only last until the next storm, or worse yet, make a small problem a big problem.

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. Funding for additional permit staff at the State level may be needed. Additional staff would allow for faster permit review times, as such a backlog of permits would not develop (in theory anyway). Also, maybe this could open the door to some mechanism where state or federal funded projects could benefit from an expedited review process or project sign-off based on an on-site meeting.

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

Thank you for your time and the opportunity to discuss our work in Bradford County. I'm available to expand on these topics as needed and would offer my assistance if there's further opportunity to develop new approaches to stream maintenance and permitting.