Borough Officials Seek Answers *for Stormwater Solutions*

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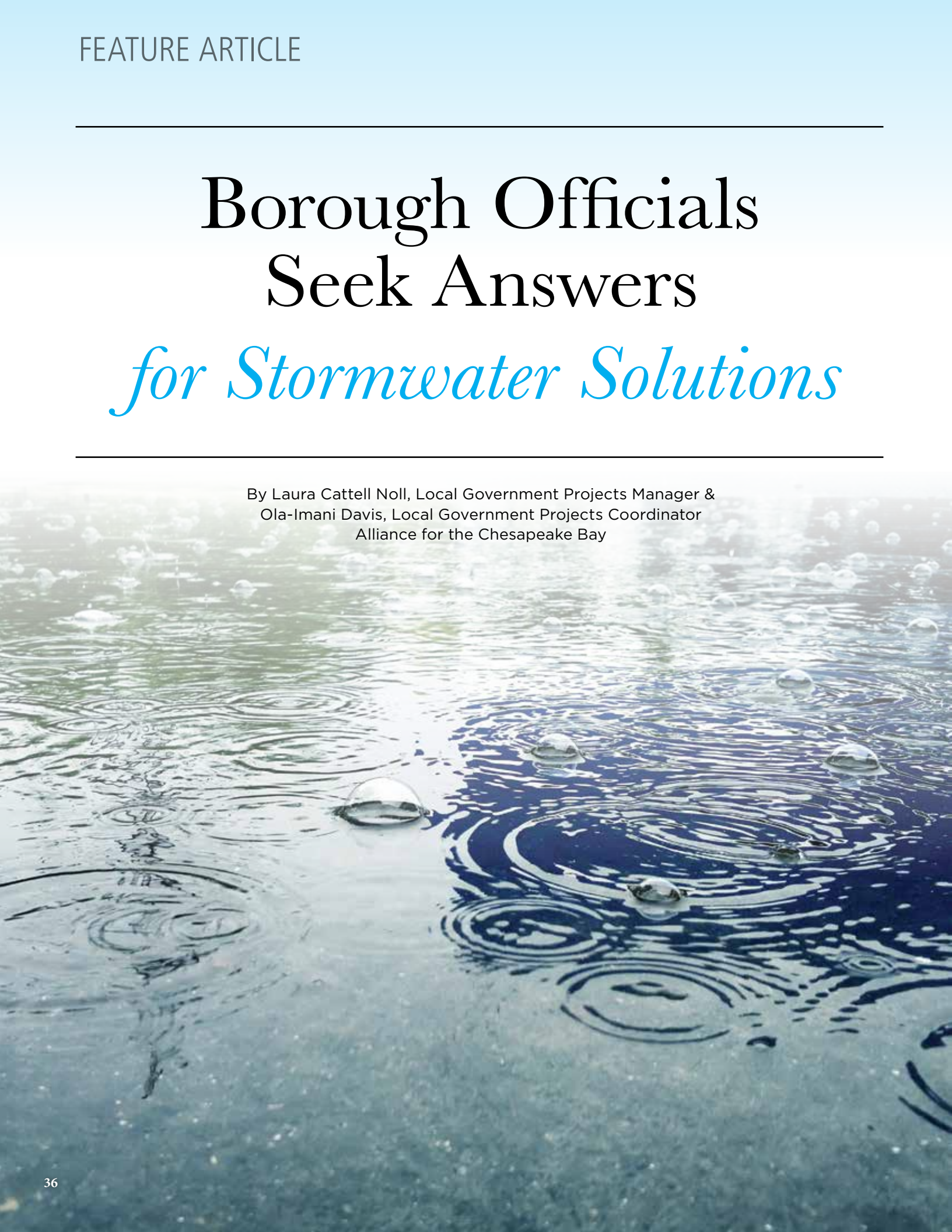

Rainwater from storms carry pollutants from impervious surfaces, like roads and roofs, into local waterways, potentially compromising drinking water supplies and making recreation in, on, or near these waters unsafe. Additionally, flooding, caused by stormwater, can endanger private property and critical infrastructure.

Effective stormwater management can address both of these challenges by reducing flooding and flood-related damages, while also preventing pollutants from threatening public health.

In Pennsylvania, nearly 20,000 miles of streams are impaired due to polluted runoff, negatively impacting water supplies, recreation, and/or fish consumption.[i] Unfortunately, these challenges are only going to worsen, as more frequent and intense downpours increase.

As precipitation levels rise, so does the ongoing need for appropriate and efficient stormwater best management practices (BMPs) that mitigate flooding and the effects of contaminated runoff on local waters.

To assist boroughs in addressing these challenges, the Alliance for the Chesapeake Bay, the University of Maryland's Municipal Online Stormwater Training (MOST) Center, and the Pennsylvania State Association of Boroughs created a series of stormwater training sessions for local governments entitled Seeking Stormwater Solutions: Getting the MOST for Local Leaders.

This three-month seminar for PA borough officials helped to identify and address local stormwater concerns. Learn more about these borough communities' challenges and solutions for stormwater management below.

Oxford Borough, Chester County

Oxford Borough has been identifying opportunities to implement green infrastructure, but it has some serious challenges to overcome. Mainly, there is a lack of space for installing such structures and the need to coordinate across four separate watersheds within the municipality.

Photo courtesy of Kathryn Cloyd, Oxford Borough.

Pictured in 2020 is the riparian forest buffer installation in Oxford Borough.

In spite of this, Oxford has constructed bump-outs that will contain rain gardens in a known flood zone and partnered with the Alliance for the Chesapeake Bay, along with several community and regional partners and volunteers, to install three riparian forest buffers.

Projects such as these help filter pollutants from stormwater and are cost-effective solutions to meeting Municipal Separate Storm Sewer Systems (MS4) requirements.

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According to Councilmember Kathryn Cloyd, Oxford's Public Works Department conducts biweekly street sweeping, which reduces sediment flow to its storm sewers.

Borough officials also participate in the region's Environmental Advisory Council, which provides stormwater educational outreach and support to community efforts in obtaining greening grants.

After completing the Seeking Stormwater Solutions sessions, Cloyd shared that the borough is revising its Pollutant Reduction Plan and applying for several conservation grants that will lay the groundwork for future stormwater initiatives, including the installation of more rain gardens, offering residential rain barrels, and other green BMPs.

"Maintenance of our grey infrastructure has been the cornerstone of stormwater remediation in the borough. Looking ahead, we realize that we must also incorporate green infrastructure wherever feasible."

Duncannon Borough, Perry County

When identifying areas of opportunity regarding stormwater BMPs, Duncannon Borough had to deal with space restrictions for developing and implementing stormwater systems.

Nestled between the Susquehanna River, which is a source of flooding in the borough, and a neighboring township, space needs for green infrastructure projects compete with those for residential areas, churches, and other privately-owned land.

Also, while the municipality contracts the services of an engineer, there is not a dedicated person to manage new and existing stormwater systems.

Borough Secretary Kathy Bauer identified the gap in the implementation of stormwater

Photo courtesy of Kathy Bauer, Duncannon Borough.

Duncannon Borough is nestled under an extensive tree canopy and adjacent to the Susquehanna River.

BMPs and looked to the Seeking Stormwater Solutions training courses for education on where runoff effects could be mitigated.

"The borough is taking steps to become more educated on needs, solutions, practices, and implementation of stormwater management," she said.

She saw the courses as a way to make connections with neighboring river municipal leaders.

Resources:

1. **Municipal Online Stormwater Training (MOST) Center:** mostcenter.umd.edu
2. **A Local Government Guide to the Chesapeake Bay:** dced.pa.gov/library/?wpdmc=publications_and_documents
3. **Chesapeake Stormwater Network:** chesapeakestormwater.net/bay-stormwater/ms4-portal
4. **Penn State Extension:** extension.psu.edu/municipal-online-stormwater-training-center

Photo courtesy of Roger Ciecierski, Mechanicsburg Borough.

Retro-fitted basin consrtucted by the Mechanicsburg Borough captures drain from downtown and residential sectors.

Mechanicsburg Borough, Cumberland County

Encompassing less than three square-miles of mostly privately-owned land, Mechanicsburg Borough has limited access to open space for green infrastructure placement.

With a level of uncertainty around future permit requirements and an inflexible municipal budget, implementation of stormwater-related projects has proven to be challenging.

In finding solutions, Mechanicsburg has created a Municipal Authority to manage pollution-reduction plans, oversee funding streams, and lead infrastructure development efforts.

Funded by a newly established stormwater fee, the authority created a street sweeping program and partnered with the local school district, the largest landowner in the borough, to establish on-site stormwater management systems.

Mechanicsburg was also able to retrofit a stormwater basin to assist in proper runoff drainage from downtown and residential sectors.

Borough Manager Roger Ciecierski said because the borough does not have many places for addressing stormwater, they have been forced "to become creative in addressing our [MS4] permit requirements. When you are facing the same problem for a long while, you can develop tunnel vision."

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Lemoyne Borough, Cumberland County

With historic neighborhoods and businesses that sit along varying levels of elevation, Lemoyne Borough has minimal public green space along its heavily utilized roadways and town center.

The 1.6-square-mile borough has struggled with managing runoff from structures that were built before stormwater regulations were implemented. In addition, any polluted runoff travels down Lemoyne's sloped terrain causing flooding and erosion and then emptying into local streams and tributaries that flow into the Susquehanna River.

Photo courtesy of Kasha Griva, Lemoyne Borough.

Pictured is Lemoyne Borough's native plant rain gardens.

Lemoyne planned to address localized flooding and its aging infrastructure with its Pollutant Reduction Plan.

In accordance with the plan, the borough has already removed a dam along an unnamed tributary to the Susquehanna that held over a century's worth of sediment.

Revitalization of this stream stabilized its banks which in turn reduced erosion concerns. Councilmember Kasha Griva emphasized that Lemoyne wants to use stormwater BMPs, and pointed to a Market Street Streetscape project where rain gardens with native plants were incorporated into the project's design.

Lemoyne has continued to prioritize the inspection of its infrastructures as it assesses future stormwater management needs, including the implementation of a community-wide stormwater fee.[ii]

Griva said, "Lemoyne actively evaluates the condition of existing infrastructure and the need for new infrastructure in coordination with the borough's Roadway Improvement Plan. Many towns faced similar dilemmas, and understanding the process and resolution helped me formulate ideas for Lemoyne and gave me the feeling that these projects are attainable and workable."

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About the Alliance: *Since 1971, we've brought together communities, companies, and conservationists to improve our lands and waters and in 2021, we celebrate 50 years of fighting for the Chesapeake. We strive for clean streams and rivers flowing through resilient landscapes, cared for by the people who live, work, and play in the Chesapeake Bay watershed. We have offices in Annapolis, Md., Lancaster, Pa., Washington, D.C., and Richmond, Va. For more, visit www.allianceforthebay.org.* B

[i] Pennsylvania Department of Environmental Protection, 2016 Report.
[ii] Lemoyne Borough Stormwater Presentation.