SEEKING STORMWATER SOLUTIONS: GETTING THE MOST FOR LOCAL ELECTED OFFICIALS

Prepared By:

ENVIRONMENTAL FINANCE CENTER

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BACKGROUND
The University of Maryland Environmental Finance Center (EFC) presented a blended learning pilot project entitled the *Getting the MOST for Maryland Black Mayors (MBM)* at the February 2020 quarterly meeting of the Chesapeake Bay Program's Local Leadership Workgroup (LLWG). The workgroup, coordinated by the Alliance for the Chesapeake Bay (Alliance), exists to accomplish the local leadership outcome outlined in the Chesapeake Bay Agreement to "continually increase the knowledge and capacity of local officials on issues related to water resources and in the implementation of economic and policy incentives that will support local conservation actions." The MBM pilot project sought to educate and better connect elected officials and staff in traditionally underserved communities with stormwater management solutions through a combination of educational platforms, including in-person workshops, online courses, facilitated peer-to-peer discussion forums, and matchmaking with technical service providers.

When the coronavirus pandemic began in March 2020 it created a need to deliver technical support services virtually, and the LLWG approached EFC with the opportunity to modify and expand the blended learning model to other local leaders throughout the region.

**SEEKING STORMWATER SOLUTIONS**

Building on the successful MBM pilot program, EFC's well established MOST Center, and our institutional knowledge of the water resource issues faced by local officials throughout the Chesapeake Bay region, EFC launched *Seeking Stormwater Solutions: Getting the MOST for Local Elected Officials.* The project was designed to help meet the Local Leadership Outcome, specifically addressing Management Actions 1.2 and 2.2 of the LLWG 2019-2020 Logic and Action Plan to "expand the reach of successful training and education programs and increase peer to peer knowledge transfer opportunities for local officials." The primary goal of the project was to improve local elected officials' and municipal staff's knowledge and capacity to address water resources issues.

A summary of the planning and implementation phases of the project are presented below.

Participant Recruitment

Recruitment goals included engaging a minimum of 15 Chesapeake Bay communities, five each in Pennsylvania, Maryland, and Virginia. The project team (EFC and the Alliance) worked with state organizations that are known, trusted sources of information to local governments, including the Pennsylvania State Association of Boroughs (PSAB), the Maryland Municipal League (MML), the Maryland Association of Counties (MACo), and the Virginia Municipal League (VML). These state organizations helped identify potential communities to enlist in this program, provided a better understanding of local stormwater challenges, and offered potential solutions and resources to share with participants.

Figure 1: Maryland Cohort Participant Communities
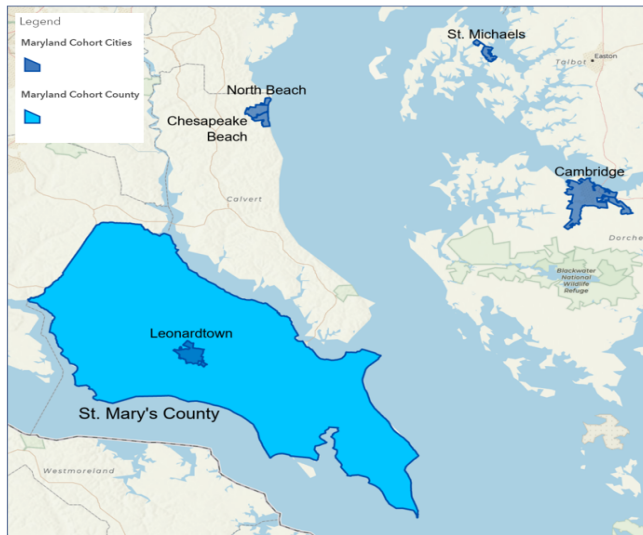
In Maryland, coastal municipalities on both sides of the Chesapeake Bay were targeted as well as the two newly permitted coastal counties. Participating communities included St. Michaels, Cambridge, North Beach, Chesapeake Beach, Leonardtown, and St. Mary's County (Figure 1).

In Pennsylvania, the project team engaged boroughs along the Susquehanna River, including Duncannon, Marysville, Wormleysburg, Lemoyne, and Mechanicsburg (Figure 2). Oxford Borough was also included due to the expressed interest from a newly elected official and staff member.

Figure 2: Pennsylvania Cohort Participant Communities
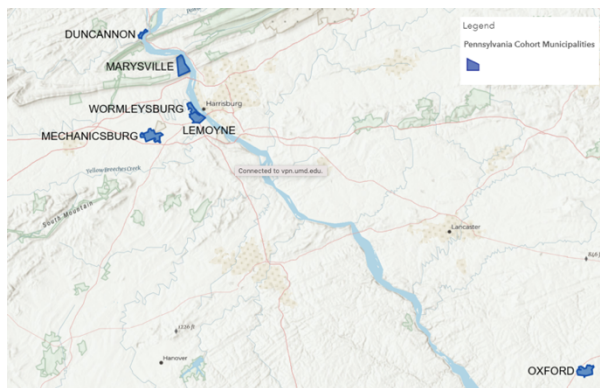
Figure 3: Virginia Cohort Participant Communities
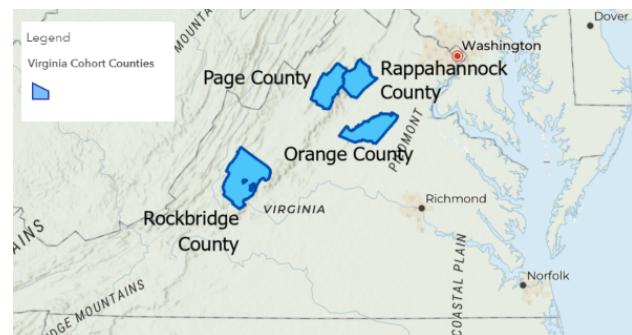
Participant recruitment proved to be more challenging in Virginia. Despite working with VML, no municipalities accepted the invitation to participate. Believing this may have been due to the way permits are structured in the state, project partners instead focused on participants of a LLWG sponsored event from the previous year. Ultimately, four counties participated in the program: Page, Rappahannock, Orange, and Rockbridge (Figure 3).

A full list of invitees and the final participant list for each cohort can be found in Appendices A and B.

Curriculum Development

On-demand courses from the Municipal Online Stormwater Training (MOST) Center were the core of the curriculum. Created in 2015, the MOST Center's online platform provides a range of education and training resources on a variety of topics including stormwater management, green infrastructure, urban BMPs, asset management, and more. The project team consulted with state associations and the cohort participants to select four courses and key topic areas for discussion that were of the greatest interest and relevance to the communities. The courses and training schedule for each cohort can be found in Appendix A.

Program Overview and Findings

The blended learning program consisted of four major components.

1. **Virtual Kickoff Workshop**

   A kickoff workshop was held for each cohort. The goal of the workshops was to provide participants with an overview of the program, set expectations, answer questions, and most importantly generate excitement and momentum to identify barriers and solutions to achieve clean water goals in their communities. To help inspire the cohorts, the following Keynote Speakers spoke of the integral role local decision makers play in stormwater management and local water quality:

   - Maryland: Ben Grumbles, Secretary of the Maryland Department of Environment
   - Pennsylvania: Brion Johnson, Executive Director of PennVest
   - Virginia: Ann Jennings, Deputy Secretary of Natural Resources, Commonwealth of Virginia, Office of the Governor

   As detailed in Appendix C, program evaluations showed that participants found the Kickoff Workshop valuable.

2. **Online Courses from the MOST Center**

   Despite the opportunity for personalization of the training syllabi among the MOST Center's dozen courses, the three cohorts selected the same four courses most relevant to their local needs and priorities. Key topics from each course were selected to facilitate group discussion, as well as to identify needs, challenges, and ideas to promote collaboration and spur action. The courses and key topic areas addressed included:

The Building Blocks of an Effective Stormwater Management Program

Key Topics:
- Stormwater Acronyms
- MS4 permit and 6 Minimum Control Measures
- Stormwater Management Drivers and Challenges
- Community Involvement and Leveraging Partnerships

Green Infrastructure and Low Impact Development 101
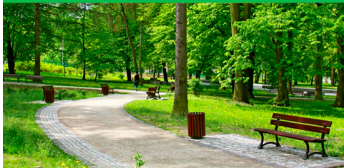
Key Topics:
- Green Infrastructure and Low Impact Development Defined
- Green Infrastructure and Flood Management
- Structural and Non-Structural Practices
- Encouraging Use and Acceptance of GI Practices

Stormwater Financing 101

Key Topics:
- Defining the Need
- Cost Reducers
- Revenue and Cash Flow Management
- Engaging the Private Sector

Funding Urban Forestry Programs

Key Topics:
- Introduction to Urban Forestry
- Assess and Plan
- Maintain and Expand
- Strategies for Funding Urban Forestry

Program Evaluation findings showed that all courses were either "very relevant" or "somewhat relevant" to participants' positions in their communities. Overall, the *Building Blocks* course was the highest rated with all respondents indicating the course was "Very Relevant" to their position and community. *Green Infrastructure and Low Impact Development 101* was the second highest rated course with the vast majority of respondents finding it "very relevant" to their position and community. Please see Appendix C for a complete summary of evaluation findings.

3. Peer-to-Peer Discussion Forums

In the project planning phase of this project, all of the state organizations emphasized the value their members place on peer-to-peer exchange. The discussion forums provided a welcomed opportunity for local leaders to learn from each other, share ideas, and create partnerships and collaborations. There were four discussion forums, each centered on an online MOST course:

- The Building Blocks of an Effective Stormwater Management Program
- Green Infrastructure and Low Impact Development 101
- Stormwater Financing 101
- Funding Urban Forestry Programs

Some themes that emerged from these sessions are presented below. Detailed notes from each discussion forum can be found in Appendix B.

Cross-Governmental Collaboration. Communities expressed a need for better coordination across different levels of government in order to better address water quality and quantity goals. In Maryland, the project team heard examples of flooding on state roads that lie within a municipality and receive runoff from county property. This challenge was discussed with technical service providers at the final workshop regarding advice on how to best coordinate amongst several jurisdictions.

Community Education and Outreach. There is a need for a better understanding of how to effectively engage and educate constituents that stormwater is an important and relevant issue, how private landowners contribute to the problem, and why and how they should and can take action. Education and outreach needs were noted in several areas such as changing the mindset that pollutants are an "urban" issue and negative attitudes surrounding dedicated stormwater fees.

In Maryland, Homeowners Associations (HOAs) were presented as an opportunity for increased education and engagement as they own land and are often responsible for the maintenance of projects such as stormwater retention ponds. In Pennsylvania, congregational properties with large parking lots were identified as prime opportunities for

stormwater retrofits in urban areas. Lemoyne provided examples on how they partnered with churches to install projects that filter stormwater runoff and other Pennsylvania municipalities showed great interest in establishing similar partnerships.

In Virginia, discussions focused on how to best incentivize agricultural best management practices such as streambank fencing and stream buffer plantings. Technical Service Providers such as the Friends of the Rappahannock and the James River Association were asked to provide case stories and resources on how to develop effective stormwater education programs and campaigns tailored to specific audiences.

Codes and Ordinances. Several communities discussed the need for reviewing and updating their codes and ordinances. In Pennsylvania, discussions centered on local tree ordinances to help maintain and care for established trees. In Virginia, participants were interested in developing solar ordinances and in a general code and ordinance review. The project team worked to provide participants with support and resources on this issue such as the *Center for Watershed Protection's Code and Ordinance Worksheet.*

Funding and Financing. Not surprisingly, how to pay for water resource management needs was a discussion point across all three cohorts. In Pennsylvania, there was a mix of municipalities who rely on their general fund versus a dedicated fee for stormwater management, and there was interest in learning more about how fee structures are created, the public education and involvement in the process of developing the fee, and the importance of collaboration. In Virginia, stormwater management issues are primarily addressed with general funds or through permitting fees for developers, and there was also interest in learning about how fee systems can be developed to support project planning, installation, and maintenance.

Asset Management. Another common theme across the cohorts was the need for more information and attention on the operations and maintenance of stormwater practices to ensure that they function as intended over their useful life. In Maryland, there was an immediate need for capturing institutional knowledge as many communities do not have digitized maps and/or inventories of their below ground infrastructure (pipes, inlets, storm drains, etc.). Other participants cited the need for an inventory and assessment of existing green infrastructure as well as training the public works staff and others responsible for maintaining BMPs over time.

The Role of Trees. Trees and tree canopy were widely discussed as an approach to addressing stormwater management needs. Maryland participants spoke of the value of leveraging grass roots efforts that advocate for investment in trees and volunteers who can help defray maintenance costs, tree canopy assessments that can guide planting and maintenance activities and having the expertise of an arborist to inform decision making. In Virginia, the participating counties felt that existing tree cover was pretty well protected through various types of easements, but better engaging nonprofits in their riparian buffer efforts could be an effective and inexpensive avenue for advancing the protection of waterways.

4. Meet Your Technical Service Providers Virtual Workshops

In addition to the MOST Center courses and the peer-to-peer discussion forums, a final session provided each cohort the opportunity to engage with technical service providers that could potentially support on-the-ground efforts to better manage stormwater. Each cohort's

technical service provider workshop was structured to meet the specific needs identified by those participants.

In Maryland, technical service provider presentations were followed by one-on-one discussions (via virtual breakout rooms) between each service provider and community. Maryland communities came to the session with project ideas as most had gone through either a flood mitigation-, comprehensive-, stormwater action, or other planning process. Consequently, the biggest need was to connect participants with technical service providers who could move them from the planning to implementation stage, whether the support came in the form of design, funding, or engineering.

In Pennsylvania, where participants indicated that they learn best from hearing from their peers, technical service provider presentations were followed by a group Q&A session. Major themes and technical assistance needs focused on localized flooding, creative ways to install practices in highly developed areas (with limited open space), tree planting, stormwater outreach and education for citizens and private landowners, green infrastructure, and funding resources

In Virginia, a panel discussion with all the service providers was followed by two case story presentations that provided on the ground examples of how to plan and execute effective community engagement projects. Lastly, the cohort and service providers were divided into breakout rooms based on the primary watershed for each of the counties. Technical assistance centered on how to better understand local needs, how to effectively engage community members, and how to implement effective outreach and education programs. Participating counties were predominantly rural and their greatest stormwater management concern was ensuring that stormwater management requirements are met when there is new development as well as how to effectively implement agricultural BMPs.

Please see Appendix A for a list of technical service providers who participated in these workshops.

RECOMMENDATIONS

The project team offers the following recommendations for future programs aimed at promoting peer-to-peer learning and improving local elected officials' and municipal staff's knowledge and capacity to address water resources issues. In addition, some ideas regarding additional opportunities and next steps are provided.

Partner with Trusted, Well-Known Organizations
Community and participant recruitment takes time. Partnering with state organizations, non-profits, and other individuals who are trusted, well-known sources of information help create instant buy-in from participants. In addition, these trusted sources can serve as valuable partners in recruitment, planning the program to meet the audience's needs, and minimizing challenges. The state organizations also helped identify and invite the keynote speakers for the Kickoff workshops, who also helped create buy-in and spark interest in the program.

Focus on Issues of Local Importance
Focusing on local needs and drivers of stormwater management such as permit requirements, flooding, economic development, or local water quality is critical to gaining the buy in of both local elected officials and the community. The MOST Center courses were used to identify

general topics for discussion. The project team then adapted and personalized each discussion to the cohorts' needs and priorities. The challenges identified during the discussion forums were then used to identify additional resources and select the appropriate technical service providers so that they could present tailored resources and services to participants at the final workshop.

Promote Cross-Governmental Communication and Collaboration
Departmental silos that often exist both within local government and between local, county, and state government can create challenges to local stormwater management. Whether it be understanding permit requirements or a jurisdiction's structure for local government stormwater management, better communication and collaboration across all levels of government is needed. While all of the states had examples of jurisdictional challenges, this seemed especially prevalent in Maryland with several communities providing examples of county and state roads creating runoff issues on municipal and private property. Identifying a project coordinator at the state level to help facilitate discussion amongst all levels of government and maintain focus and momentum on the issue could be useful to break down silos and help support cross-governmental collaboration.

Provide Support for Maintenance Plans
An ongoing challenge for communities is maintaining their infrastructure, both grey and green. Several communities leverage their general funds (and in some cases stormwater fees) for maintenance and identify external sources of funding for new implementation projects. This diversification of funding allows for greater investment in maintenance and program cost savings. The need to train Public Works staff to identify projects that are underperforming and to effectively intervene early, leading to cost savings, was also discussed. Communities need to be connected with resources and technical service providers such as the Chesapeake Bay Landscaping Professionals to help make data-driven decisions about how to operate, maintain, repair, and replace their assets.

Engage and Educate the Community and Incentivize Action on Private Property
There is a clear need for public education and outreach on stormwater management issues and how to help constituents make the connection that water resource issues are tied to public health, the economy, and other local drivers. The increasing urbanization, noted by several participants, that leads to increased risk for flooding and runoff pollution and decreases the available space for detention and infiltration, calls for creative solutions. Local governments need tools and resources to better educate and encourage private property owners to help take action as participants across jurisdictions mentioned that they have little municipal owned property on which projects can be installed. Creative solutions such as engaging HOAs, providing rebate programs, partnering with churches, and using private parking lots for retrofits were provided by participants as a few recommendations to incentivize action.

Celebrate Successes
It is important to celebrate successes. Doing so keeps communities engaged and creates the momentum needed to move through a pipeline from defining needs to developing a solution, garnering public support, and ultimately advancing implementation. Sharing successes also creates opportunities to reach a wider audience. Successes can be shared in many ways, including social media, community events and meetings, or printed sources.

For this project, the project team is working with state organizations such as PSAB, MML, and VACo to publish promotional articles in their magazines that highlight the work and accomplishments of each municipality in the program. Please see Appendix D for an example.

CONTINUED OPPORTUNITIES

The project team has a vested interest in building on this blended learning model to engage and assist additional communities in the Chesapeake Bay region grappling with water resource issues. Some suggestions for maintaining momentum and interest on this topic are provided below.

Funding Office Hours
The peer-to-peer discussions was the top-rated aspect of this project by both participants and project partners (see Appendix C). However, when it comes to crafting local plans and solutions, each community is unique, and there is no one size fits all approach. For communities who participated in this program and expressed financing as a major barrier to implementing clean water projects, EFC will utilize funding made available through the Chesapeake Bay Program Office to provide a limited amount of consulting office hours to incentivize further participation and to help facilitate the implementation of local protection and restoration activities. Communities who specifically identified their interest in this opportunity in the program evaluations will be engaged in April 2021 to frame out brief scopes and define EFC deliverables and timeline.

Promote Regional and Multi-Municipal Collaboratives
Funders and other leaders in the Chesapeake Bay Watershed are deeply interested in promoting regional and multi-municipal collaboratives. Data shows that existing partnerships, collaboratives, and networks are an especially effective mechanism of achieving and sustaining desired water quality improvement efforts by strategic leveraging of capacities, skills, and resources of diverse stakeholders. To this end the project team is identifying opportunities to continue working with the cohorts and potentially replicating the blended learning and peer-to-peer discussion forums with a wider audience. Specifically, there are two immediate opportunities that project partners are pursuing.

PSAB has expressly voiced interest in replicating the blended learning model, especially the peer-to-peer exchange piece, with new boroughs. The project team and PSAB are currently applying for additional funding to:
- Continue engagement with the existing Pennsylvania cohort to help operationalize what they have learned through the MOST Center curriculum, advance the peer network emerging from their discussion sessions, and facilitate the dialogue with technical service providers to support implementation efforts.
- Develop new cohorts that can learn from a similar blended learning process and the mentorship of those who have already gone through the program, and in time, coordinate and advance local implementation.
- Establish a more formalized and intentional collaboration among these communities that facilitates water resource management efficiencies, reduces implementation costs, expands local capacities, offers technical assistance and creates a peer network that sustainably supports these efforts beyond project partner engagement.

The project team has also been approached by leadership West Virginia's Eastern Panhandle Regional Planning and Development Council to use a similar blended learning model with their constituent communities to inform their Hazard Mitigation Planning process. Negotiations and planning on this effort are underway.

APPENDIX A

Training Schedules
Maryland Cohort

Kickoff Workshop: Introduction to Stormwater Management and the MOST Center
Tuesday, November 10th at 4:00pm

Building Blocks of an Effective Stormwater Management Program
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Wednesday, December 2nd at 2:00pm

Green Infrastructure and Low Impact Development 101
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Wednesday, December 16th at 2:00 pm

Stormwater Financing 101
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Wednesday January 6th at 2:00pm

Funding Urban Forestry Programs
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Wednesday January 20th at 2:00pm

Workshop: Meet your Technical Service Providers
Wednesday February 3rd at 2:00pm

Training Schedules
Pennsylvania Cohort

Kickoff Workshop: Introduction to Stormwater Management and the MOST Center
Thursday, November 19th at 4:00pm

Building Blocks of an Effective Stormwater Management Program
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Thursday December 10th at 1:00 pm

Green Infrastructure and Low Impact Development 101
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Thursday January 14th at 1:00 pm

Stormwater Financing 101
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Wednesday January 27th at 1:00 pm

Funding Urban Forestry Programs
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Wednesday February 10th at 1:00 pm

Workshop: Meet your Technical Service Providers
Friday February 26th at 10:00 am

Training Schedule
Virginia Cohort

Kickoff Workshop: Introduction to Stormwater Management and the MOST Center
Thursday, November 12th at 4:00pm

Building Blocks of an Effective Stormwater Management Program
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Wednesday December 2nd at 3:00 pm

Green Infrastructure and Low Impact Development 101
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Tuesday December 15th at 10:00 am

Stormwater Financing 101
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Tuesday January 5th at 10:00 am

Funding Urban Forestry Programs
Complete the online course before the scheduled Discussion Forum
Discussion Forum on Tuesday January 19th at 10:00 am

Workshop: Meet your Technical Service Providers
Wednesday February 10th at 10:00 am

Kickoff Workshop Agendas
Maryland Cohort

Location: https://umd.zoom.us/j/97611840286
Date: Tuesday, November 10th, 2020 at 4:00 pm

4:00 – 4:10pm: **Welcome with Mike Hunninghake**
    University of Maryland Environmental Finance Center

4:10 – 4:25pm: **Welcome from Ben Grumbles**
    Secretary, Maryland Department of Environment

4:25 – 4:40pm: *Seeking Stormwater Solutions* **Project Overview**
- *Project objectives and timeline*
- *Understanding your commitment*
- *The case for Stormwater Management*

4:40 – 4:55pm: **MOST Center Tour**
- *How to enroll in courses*
- *Other resources available*

4:55 pm: **Charting the course ahead and Wrap Up**

Kickoff Workshop Agenda
Pennsylvania Cohort

Location: https://umd.zoom.us/j/9822532982
Date: Thursday, November 19th, 2020 at 4:00 pm

| 4:00 – 4:10pm: | **Welcome and Introductions with Ellen Kohler** |
| | University of Maryland Environmental Finance Center |

4:10 – 4:25pm: **Welcome from Brion Johnson**
                    Executive Director, PennVest

4:25 – 4:40pm: *Seeking Stormwater Solutions* **Project Overview**
- *Project objectives and timeline*
- *Understanding your commitment*
- *The case for Stormwater Management*

4:40 – 4:55pm: **MOST Center Tour**
- *How to enroll in courses*
- *Other resources available*

4:55 pm: **Charting the course ahead and Wrap Up**

Kickoff Workshop Agenda
Virginia Cohort

Location: https://umd.zoom.us/j/5528359002?pwd=NEcyTTRnRDdrdXQyampaSXY4aFNlQT09
Password: colt45
Date: Thursday, November 12th, 2020 at 4:00 pm

4:00 – 4:10pm: **Welcome with Michelle Kokolis**
                      University of Maryland Environmental Finance Center

4:10 – 4:20pm: **Welcome from Ann Jennings**
                      Deputy Secretary of Natural Resources
                      Commonwealth of Virginia, Office of the Governor

4:20 – 4:40pm: ***Seeking Stormwater Solutions* Project Overview**
                      - *Project objectives and timeline*
                      - *Understanding your commitment*
                      - *The case for Stormwater Management*

4:40 – 4:55pm: **MOST Center Tour**
                      - *How to enroll in courses*
                      - *Other resources available*

4:55 pm: **Charting the course ahead and Wrap Up**

Meet Your Technical Service Providers Workshop Agendas
Maryland Cohort

Location: https://umd.zoom.us/j/97611840286
Date: Wednesday, February 3rd, 2021 at 2:00 pm

2:00 – 2:10pm: **Welcome – Mike Hunninghake**
University of Maryland Environmental Finance Center

2:10 – 2:50pm: **Overview of Organizations**
- University of Maryland Environmental Finance Center
- Chesapeake Bay Funders Network
- Maryland Department of the Environment
- Maryland Emergency Management Agency
- ShoreRivers
- University of Maryland Sea Grant/Extension

2:50 – 3:50 pm: **One-on-One Q&A**
Breakout Rooms – 10 minutes with each technical service provider

Time Slot	Breakout Room #1	Technical Service Provider
2:50-3:00	Cambridge	ShoreRivers
3:00-3:10	Cambridge	UMD Sea Grant/Extension
3:10-3:20	Cambridge	Chesapeake Bay Funders Network
3:20-3:30	Cambridge	Maryland Department of the Environment
3:30-3:40	Cambridge	Maryland Emergency Management Agency
3:40-3:50	Cambridge	UMD Environmental Finance Center

Time Slot	Breakout Room #2	Technical Service Provider
2:50-3:00	St Michaels	UMD Environmental Finance Center
3:00-3:10	St Michaels	ShoreRivers
3:10-3:20	St Michaels	UMD Sea Grant/Extension
3:20-3:30	St Michaels	Chesapeake Bay Funders Network
3:30-3:40	St Michaels	Maryland Department of the Environment
3:40-3:50	St Michaels	Maryland Emergency Management Agency

Time Slot	Breakout Room #3	Technical Service Provider
2:50-3:00	Chesapeake Beach	Maryland Emergency Management Agency
3:00-3:10	Chesapeake Beach	UMD Environmental Finance Center
3:10-3:20	Chesapeake Beach	BREAK
3:20-3:30	Chesapeake Beach	UMD Sea Grant/Extension
3:30-3:40	Chesapeake Beach	Chesapeake Bay Funders Network
3:40-3:50	Chesapeake Beach	Maryland Department of the Environment

Time Slot	Breakout Room #4	Technical Service Provider
2:50-3:00	North Beach	Maryland Department of the Environment
3:00-3:10	North Beach	Maryland Emergency Management Agency
3:10-3:20	North Beach	UMD Environmental Finance Center
3:20-3:30	North Beach	BREAK
3:30-3:40	North Beach	UMD Sea Grant/Extension
3:40-3:50	North Beach	Chesapeake Bay Funders Network

Time Slot	Breakout Room #5	Technical Service Provider
2:50-3:00	Leonardtown	Chesapeake Bay Funders Network
3:00-3:10	Leonardtown	Maryland Department of the Environment
3:10-3:20	Leonardtown	Maryland Emergency Management Agency

Time Slot		Technical Service Provider
3:20-3:30	Leonardtown	UMD Environmental Finance Center
3:30-3:40	Leonardtown	BREAK
3:40-3:50	Leonardtown	UMD Sea Grant/Extension

Time Slot	Breakout Room #6	Technical Service Provider
2:50-3:00	St Mary's County	UMD Sea Grant/Extension
3:00-3:10	St Mary's County	Chesapeake Bay Funders Network
3:10-3:20	St Mary's County	Maryland Department of the Environment
3:20-3:30	St Mary's County	Maryland Emergency Management Agency
3:30-3:40	St Mary's County	UMD Environmental Finance Center
3:40-3:50	St Mary's County	BREAK

3:50 – 4:00pm: **Wrap Up – Mike Hunninghake**

Meet Your Technical Service Providers Workshop Agenda
Pennsylvania Cohort

Location: https://umd.zoom.us/j/9822532982
Date: Friday, February 26, 2021, 10:00 - 11:30 am

10:00 – 10:10 am: **Welcome – Ellen Kohler**
University of Maryland Environmental Finance Center

10:10 – 11:00 am: **Overview of Organizations and Resources**
- PA Department of Community & Economic Development
- Cumberland County Conservation District
- PA Emergency Management Agency
- Alliance for the Chesapeake Bay

11:00 – 11:25 am: **Group Q&A**
PENNVEST will join the other technical service providers to answer questions

11:25 – 11:30 am: **Wrap Up – Ellen Kohler**
University of Maryland Environmental Finance Center

Meet Your Technical Service Providers Workshop Agenda
Virginia Cohort

Location: https://umd.zoom.us/j/5528359002?pwd=NEcyTTRnRDdrdXQyampaSXY4aFNlQT09
Password: colt45
Date: Wednesday, February 10th, 2021
Time: 10:00-11:30 am

10:00 – 10:30am: **Welcome**
                     Michelle Kokolis – University of Maryland Environmental Finance Center

                     Service Providers Panel Discussion
                     Chris Anderson – Alliance for the Shenandoah Valley
                     Jennifer Cotting – Environmental Finance Center
                     Megen Dalton – Shenandoah Valley Soil & Water Conservation District
                     Michelle Edwards – Rappahannock-Rapidan Regional Commission
                     Amber Ellis – James River Association
                     Liz Feinberg – National Fish and Wildlife Foundation
                     Bryan Hofmann – Friends of the Rappahannock

10:30 – 11:00am: **Planning and Executing Your Community Engagement Project**
                     Amber Ellis – James River Association
                     Bryan Hoffman – Friends of the Rappahannock

11:00 – 11:20am: **Breakout Sessions with Your Regional Service Providers (by watershed)**

11:20 – 11:30am: **Wrap-Up and Closing Remarks**
                     Michelle Kokolis – University of Maryland Environmental Finance Center

Recruitment Tracking

Name of Local Government	Date Invited and by whom?	Follow Up Notes
Cambridge	9/28 by Mike at EFC	
Chesapeake Beach	9/28 by Mike at EFC	Patti of the Alliance called to follow up on email invitation and left a voicemail on 10/20
North Beach	9/28 by Mike at EFC	Patti of the Alliance called to follow up on email invitation and left a voicemail on 10/21
Indian Head	9/28 by Mike at EFC	Patti of the Alliance called to follow up on email invitation and left a voicemail on 10/22
Leonardtown	9/28 by Mike at EFC	
Rock Hall	9/28 by Mike at EFC	Patti of the Alliance called to follow up on email invitation and left a voicemail on 10/24
St Michaels	9/28 by Mike at EFC	Patti of the Alliance called to follow up on email invitation and left a voicemail on 10/25
St. Mary's County	10/15 by Alex at MACo	
Calvert County	10/15 by Alex at MACo	Alliance will follow-up
Millersburg	PSAB 10/15/20.	Ed follow-up email 10/21
Halifax	PSAB 10/15/20.	Ed follow-up email 10/21
Duncannon	PSAB 10/15/20.	Ed follow-up email 10/21
Marysville	PSAB 10/15/20.	Ed follow-up email 10/21
Dauphin	PSAB 10/15/20.	Ed follow-up email 10/21
Wormleysburg	PSAB 10/15/20.	Ed follow-up email 10/21
Steelton	PSAB 10/15/20.	Ed follow-up email 10/21
Highspire	PSAB 10/15/20.	Ed follow-up email 10/21
Middletown	PSAB 10/15/20.	Ed follow-up email 10/21
Augusta County	10/2 by Laura at Alliance	10/5 Patti called to follow-up
Orange County	10/2 by Laura at Alliance	10/5 Patti called to follow-up
Page County	10/2 by Laura at Alliance	10/5 Patti called to follow-up
Rockingham County	10/2 by Laura at Alliance	10/5 Patti called to follow-up
Shenandoah County	10/2 by Laura at Alliance	10/5 Patti called to follow-up
Haymarket	10/23 by Natalia	
Grottoes	10/23 by Natalia	
Woodstock	10/23 by Natalia	
New Market	10/23 by Natalia	
Luray	10/23 by Natalia	
Stanley	10/23 by Natalia	
Shenandoah	10/23 by Natalia	
Elkton	10/23 by Natalia	
Gordonsville	10/23 by Natalia	
Highland County	10/26 by Laura at Alliance	10/29 Patti called to follow-up
Buena Vista	10/26 by Laura at Alliance	10/29 Patti called to follow-up
Bridgewater	10/26 by Laura at Alliance	10/29 Patti called to follow-up
Rappahannock County	10/26 by Laura at Alliance	10/29 Patti called to follow-up
Culpepper	10/26 by Laura at Alliance	10/29 Patti called to follow-up
Nelson County	10/26 by Laura at Alliance	10/29 Patti called to follow-up

APPENDIX B

**Seeking Stormwater Solutions: Getting the MOST for Local Leaders
Cohort Participants**

Participant	Community	Position
Victoria Jackson-Stanley	Cambridge	Mayor
Patrick Comiskey	Cambridge	City Manager
Jeannie Bellina	Cambridge	Housing Specialist
Brian Roche	Cambridge	Commissioner
Holly Kamm Wahl	Chesapeake Beach	Town Administrator
Larry Jaworski	Chesapeake Beach	Councilman
Jay Berry	Chesapeake Beach	Director DPW
Jada Stuckert	Leonardtown	Planner
Lisa Garrett	North Beach	Head of Community Conservation
Lauren Kabler	North Beach	Stormwater and Flood Advisory Committee
Eric Colvin	St. Mary's County	Commissioner
Kymberly Kudla	St. Michaels	Planning & Zoning Officer
Zachary Border	Marysville Borough	Borough Manager
Margie Stuski	Wormleysburg	Council Member
Kathy Bauer	Duncannon Borough	Borough Secretary
Kasha Griva	Lemoyne Borough	Borough Council Member / Stormwater Committee Chair
Cliff Karlsen	Lemoyne Borough	Public Works Superintendent
Roger Ciecierski	Mechanicsburg Borough	Borough Manager
Kathyrn Cloyd	Oxford Borough	Council Member
Leslie Ayers	Rockbridge	Board of Supervisors
Kelly Butler	Page	Floodplain Administrator VESCP/VSMP Program Administrator
Dustin Carter	Rappahannock	Intern
Jim Crozier	Orange	Board of Supervisors
Ron Frazier	Rappahannock	Board of Supervisors

Seeking Stormwater Solutions: Getting the MOST for Local Leaders
Course Completion Tracking

Participant	Community	Completed BB course?	Completed GI & LID course?	Completed SW Fin 101?	Completed Urban Forestry?
Victoria Jackson-Stanley	Cambridge	yes	yes	no	no
Jada Stuckert	Leonardtown	yes	yes	yes	yes
Eric Colvin	St. Mary's County	yes	yes	no	yes
Holly Kamm Wahl	Chesapeake Beach	yes	yes	yes	yes
Kymberly Kudla	St. Michaels	yes	yes	yes	yes
Lisa Bierer Garrett	North Beach	yes	yes	yes	yes
Lauren Kabler	North Beach	yes	yes	no	no
Larry Jaworski	Chesapeake Beach	yes	yes	yes	yes
Jay Berry	Chesapeake Beach	yes	yes	yes	no
Zachary Border	Marysville Borough	No	No	No	No
Margie Stuski	Wormleysburg	YES	YES	YES	YES
Kathy Bauer	Duncannon Borough	YES	YES	YES	YES
Kasha Griva	Lemoyne Borough	YES	YES	YES	YES
Cliff Karlsen	Lemoyne Borough	No	No	No	No
Roger Ciecierski	Mechanicsburg Borough	No	No	No	No
Kathyrn Cloyd	Oxford Borough	YES	YES	YES	YES
Leslie Ayers	Rockbridge	Yes	No	Yes	Yes
Kelly Butler	Page	Yes	Yes	Yes	Yes
Dustin Carter	Rappahannock	Yes	Yes	Yes	Yes
Jim Crozier	Orange	No	Yes	Yes	No
Ron Frazier	Rappahannock	Yes	No	No	No

Seeking Stormwater Solutions: Getting the MOST for Local Leaders
Discussion Forum Attendance Tracking

Participant	Community	Kickoff Workshop	DF1: Building Blocks	DF2: GI&LID	DF3: SW Fin 101	DF4: Urban Forestry	TSP Workshop
Victoria Jackson-Stanley	Cambridge	yes	yes	yes	no	no	no
Brian Roche	Cambridge	no	no	no	no	no	yes
Holly Kamm wahl	Chesapeake Beach	no	yes	no	yes	yes	yes
Larry Jaworski	Chesapeake Beach	no	yes	yes	yes	yes	yes
Jay Berry	Chesapeake Beach	no	yes	yes	yes	yes	yes
Jada Stuckert	Leonardtown	yes	no	yes	yes	no	yes
Lisa Bierer Garrett	North Beach	yes	yes	yes	yes	yes	yes
Lauren Kabler	North Beach	no	yes	yes	no	yes	yes
Eric Colvin	St. Mary's County	yes	yes	yes	no	yes	yes
Kymberly Kudla	St. Michaels	no	yes	yes	yes	yes	yes
Zachary Border	Marysville Borough	No	YES	No	No	No	No
Margie Stuski	Wormleysburg	No	YES	YES	YES	YES	YES
Kathy Bauer	Duncannon Borough	YES	YES	YES	YES	YES	YES
Kasha Griva	Lemoyne Borough	YES	YES	YES	YES	No	YES
Cliff Karlsen	Lemoyne Borough	No	No	No	No	No	YES
Roger Ciecierski	Mechanicsburg Borough	YES	No	No	YES	No	YES
Kathyrn Cloyd	Oxford Borough	No	YES	YES	YES	YES	YES
Leslie Ayers	Rockbridge	Yes	Yes	Yes	Yes	Yes	Yes
Kelly Butler	Page	Yes	Yes	Yes	Yes	No	Yes
Dustin Carter	Rappahannock	Yes	Yes	Yes	No	No	No
Jim Crozier	Orange	Yes	Yes	Yes	Yes	Yes	Yes
Ron Frazier	Rappahannock	Yes	Yes	Yes	Yes	Yes	No

Discussion Questions:

Topic 1: Permits/Drivers
1. This course focused on 6 Minimum Control Measures and considered each of them a building block of an effective stormwater management program. What are these MCMs? Are you addressing them in local practice?
   Public Education and Outreach, Public Participation, Illicit Discharge Detection and Elimination, Management of Construction Site Runoff, Management of Post Construction Site Runoff (New Development and Redevelopment), Good Housekeeping in Municipal Operations
   a. Not all of us have an MS4, what guides stormwater management in your community?
      i. St Mary's County - Phase II MS4 Eric mentioned:
         1. Illicit discharge ordinance - passed a month ago - 6 months ago this would have been a huge help
         2. Driver for the County is what comes down from the state
      ii. Cambridge, Leonardtown, St Michaels all have local stormwater ordinances that use MDE's 2000 Maryland Stormwater Management Design Manuals 1 & 2 and all subsequent revisions. Some also have floodplain management ordinances.
         1. Cambridge - Choptank and Bay are right there - water is rising, erosion, hurricane threats, self-interest
            a. Advocates - Alan Girard (CBF), Brian Roche Ward 1
         2. Chesapeake Beach - Right on the Bay, marshes around town, hurricane Isabel and storm surge damage is fresh in everyone's mind - oysters are a big industry (other watermen)?
            a. Climate change will accelerate current issues
            b. Flooding is getting more and more frequent
         3. North Beach - Isabel changed redevelopment on the waterfront
            a. No bottom level (only garages or storage space)
            b. Rebuilding to higher/taller standards
            c. Damage is being experienced just about every month - businesses, residences, roads, property damage
            d. Under capacity and outdated infrastructure
            e. Storm events more than in Annapolis (local storms and flooding)
      iii. What are your responsibilities as a local jurisdiction? What's clear vs. unclear? What cross-jurisdictional coordination is happening and what is lacking? Eric? What would you like to see as a local coordinator? How do you overcome this? How?
      iv. North Beach - county road, state roads, where it comes from, where it sits on
         1. Tough to collaborate with the County
      v. Chesapeake Beach - town setting separate standards from what is on the county level
         1. HOAs (large HOAs) - onus is on the HOA and they don't have the knowledge or resources to maintain BMPs
      vi. St. Mary's County
         1. HOAs don't have the resources to fix what is in their responsibility
            a. It depends - County is averse to taking on risk and trouble - DPW helps repair but not take over
            b. Starting conversation to get funding from the state
         2. Jurisdiction issues with Leonardtown
         3. Getting the state to start moving
   b. Are these regulatory structures what drive you to action? Is it public complaints/concerns? Threats to property value? How do we tailor our communication strategies based on our drivers? Cite examples of successful outreach, on this topic or others? Any COVID-related communication success stories?
      i. Yes to all

Topic 2: Community Involvement/Stakeholders
2. The course mentions the value of developing a toolbox of strategies to reach the public.
   a. What existing programming can your community leverage?
      i. Examples: community meetings, public events, social media/newsletters
      ii. What about boots on the ground? Tree planting, adopt a storm drain, stream clean ups, etc.?
      iii. What about BMPs in public spaces? For example: a rain garden in a public park with interpretive signage?
      iv. What strategy works best for you? Which one is least effective?

        1. Eric Colvin - many different boards and commissions made up of citizens - #1 job is to advise commissioners, should also be used as a resource to help complete public outreach on a multitude of topics including stormwater

        2. Example was raised to distribute sustainability awards

        3. Chesapeake Beach - oyster program - rebuilding a reef, local volunteer efforts

            a. Every 5th grader in Calvert County ends up at the oyster reef - now that they're high schoolers they educate their parents on the issues - two-fold (biggest thing is education, also a restoration project)

            b. Calvert County

    b. Have you engaged partners in engagement? How so? Was it effective?

        i. Sea Grant and Extension - virtual rain barrel/native plant workshops (keep MD beautiful grant)

        ii. CBOCS

3. Do we need to adapt in the age of COVID and the new normal? Is there more foot traffic to local parks? Does that present an opportunity? What about newsletters or other communications that can reach people in their homes? Are other topics/needs simply taking precedence? How are you adapting to COVID and continuing to make progress on stormwater issues?

    a. For example: Do we need to reframe our messaging? Storms, flooding/property damage, etc. isn't going anywhere. With so many other pressing topics being communicated (wear a mask, wash your hands, get a flu shot) how do we simultaneously protect our communities from stormwater damage?

        i. Holly - recreation facility is at a big risk - more demand for its use as well as in greater need of restoration

        ii. Larry - Surge in real estate prices - people can't travel so they're looking into closer escapes - more visitors coming without being able to accommodate them

4. What do you need to better educate the public?

5. Transition from face-to-face meetings to virtual formats - are you reaching more people? Less people? How is it different? Are there more opportunities?

    a. Overall theme was greater attendance, less engagement

1. What are some examples of low impact development projects that you already have in your community?
    a. What was the main driver/reason for installing the project?
        i. Chesapeake Beach - trees, CBOX, planting around stormwater management ponds
        ii. Chesapeake Beach - Native plantings in rain gardens behind town hall
        iii. Cambridge - tree plantings on major street corridors (volunteers) in low lying areas, native grass plantings in marshy areas
        iv. Maryland Avenue Green street (pervious pavement street and sidewalk) with bump outs in Cambridge - originally a wide street, now has 6-8 bumpouts on 3 blocks (native grasses)
            1. Mike to share photos of the project
        v. North Beach - Sunrise Garden - Baywise garden put in 7 years ago (designed by master gardeners) - put in by a contractor
            1. 5-6 years old
            2. Needs signage as to HOW IT WORKS and how to do it in your own yard
        vi. Passive Park (used to be military housing) - st mary's county - strong community involvement
            1. Sierra Club, Boy Scouts, etc.
            2. Just did a tree planting - great partnership idea/experience (Sierra Club)
        vii. Leonardtown - downtown streetscape plan
            1. Replaced original tree plantings with native trees - and more conducive to businesses (seeing store fronts)
    b. How was it received by the public?
        i. Staff needs to help with volunteers on planting day and follow up (removing the stakes, etc.)
    c. Who is maintaining the project(s) over time? What maintenance challenges are you facing?
        i. Green Team volunteers to maintain
        ii. Leonardtown - (commercial seem to need more help then the residential ones) developments - ponds and bioretentions aren't kept up with
            1. Permeable parking lot
2. Are there any hotspots or specific locations in your community that are facing constant stormwater, flooding, or erosion issues?
    a. St Mary's County - biggest issue is flooding in a stream that has gotten worse and worse over time (more development over time) (Leonardtown too)
        i. Floods over the road too (and homeowners)
        ii. Macintosh Run - upstream and downstream of Leonardtown
            1. 3 businesses flood too (winery, antiques, crafters guild - vacated the building (⅔ one has been relocated, the other not)
            2. Serious discussion has been happening in the past 6 months
        iii. North Beach - raising the road 18 inches - took 10 years to do
            1. Wetlands being reconnected
            2. State highway is doing it, Army Corps of Engineers started it
            3. Need to minimize quantity of water entering aging infrastructure
                a. Need more downhill projects
        iv. St Michaels - certain businesses flooding issues, crab claw has to shuttle people to and from their cars
            1. Harbor infrastructure and stormwater planning due at end of month
        v. Cambridge - partnership with Shore Rivers (Wye, Miles, etc.) - various areas with rain gardens
3. What about Best Management Practices (BMPs) that weren't covered in the course? Have you seen any examples of projects in other communities or elsewhere that may be of interest to you?
    a. Living shorelines (ex. Chestertown)
    b. Floodplain restoration/regional-scale approaches
    c. Oxford, MD example - Building Living Islands to Enhance Shoreline Protection
    d. Kym - Living shoreline - maritime museum
    e. Riparian pilot project - critical areas commission - replacing phragmites with native trees and shrubs

4. Do you have good maps/inventories of your community's infrastructure - both above and below ground (pipes, inlets, storm drains, etc.)?
    a. Chesapeake Beach - not really
        i. Cameraing - metal pipes are eroding - replacing pieces that have failed
            1. Looking into a more comprehensive
            2. Elevation issues - shoreline versus

> > > ii. BMPs located in HOAs - towns don't know where it is or how to retrofit
> > b. Leonardtown does not - back about 10 years (paper) not digitized
> > c. St Michaels - does with new plan

5. Master Plan or Comprehensive Plan? Capital Improvement Plan? What guides decision making? Where is development scheduled to come in? Are there stormwater considerations being taken into account? Add stormwater elements to your plans. about their experiences:
   a. Chesapeake Beach does
      i. Institutional knowledge needs to be captured!!!
   b. St. Michael's does

6. When it comes to new development or redevelopment there is the opportunity to pass new legislation that requires more stringent stormwater requirements.
   a. For example, last time we discussed how after hurricane Isabel homes on the waterfront in North Beach are no longer allowed to have basements, only storage space or garages on the bottom level.
   b. Are you interested in doing this in your communities? What would you need to get started?
      i. Steep slope ordinance - Chesapeake Beach (not Calvert County)
         1. Within the last year

Topic 1: Defining the Need (for revenue)

1. Let's start by discussing your existing program/stormwater projects. Last time we met you all had examples of green infrastructure projects in your communities. How were they funded? What challenges did securing funding present?
    a. Let's do a quick around the room (prompts for MD below if needed)
        i.   Leonardtown - downtown streetscapes
        ii. St. Mary's County - passive park
        iii. Chesapeake Beach - rain garden behind town hall
        iv. North Beach - Sunrise Garden
        v.   Cambridge - Maryland Avenue green street
        vi. St Michaels - Stormwater Harbor and Flood Risk Assessment

        Holly - Chesapeake Beach - Open Space Recreational areas - 100% general fund, Treemendous program provided a significant discount, Volunteers planted, contractors prepared the site
        Kym - St Michaels - 100% grant funded - $45,000 - DNR Coastal Bay Trust Fund - funded assessment for Somerset County (when previously there) under subsection 2 - grants gateway streamlined the application process - Waterways Board helped
        Lisa - North Beach - using the same funding for their plan that they're writing now - sewer treatment plant is in Chesapeake Beach
        Examples from Berlin - eye opening

    b. How are you currently paying for maintenance of these projects?
        Holly - volunteers - have a contractor (general fund)
        Kym - maintaining momentum - Waterways Board - applying for additional funding - capital improvement projects as match for grant funding - looking 5 years ahead
        Lisa - mapping green infrastructure projects (existing and future) - need more functional plants in their swales (not crepe myrtles) - working with state nurseries

2. The next step is to evaluate future needs and programmatic gaps. You have identified existing flooding hotspots and know of citizen complaints. You have even begun to identify potential projects/solutions.
    a. What will you need to pay for to address the issue?
        i.   Labor (internal or external contractors)
        ii. Capital/Infrastructure
        iii. Operations and maintenance
            1. Biggest concern - DPW does maintenance - training needs too
            2. Collaborating among 3 different levels of government
            3. Training - how to recognize when things are failing and when/how to intervene - individual review
            4. Residents and on-site projects can't be monitored over time
            5. HOA jurisdiction issues

Topic 2: Revenue and Cash Flow Management

Now let's start to think about how to fund the needs that you've identified. In the chat box ==Natalia just uploaded the list of financing tools covered in this course.==

*** Natalia to copy and paste into chatbox:
Financing Tools:
*General funds
*Bonds and loans such as the Clean Water State Revolving Loan Fund (CWSRF)
*Grants
*Dedicated revenue streams including (1) Stormwater fees; (2) Impact fees; (3) Special tax districts

3. Which of these revenue streams are you currently using and how? Any via the County?
    Grants (Keep MD Beautiful, DNR), partnerships with Watershed Stewards Academy, general funds (cleaning out a large pipe/storm drain)/investment
    Fighting the legacy of "rain tax"
4. Are you considering using a new financing tool/method that you haven't before? What questions do you have?
    Community resilience funding, general funds, new development/impact fees (sediment, oil, fats) - had to build offsite too - shopping center parking lot - they own and maintain, the muni inspects
    If they did not comply with the request - they could have opted for an impact fee
5. For the specific hotspots/stormwater issues that you have identified, what are your revenue source options?

Topic 3: Cost Reducers / Efficiencies

The course also introduced five different cost reducers, many of which we have already touched on in previous discussions.

6. One cost reducer is reviewing and revising local codes and ordinances. After our first discussion forum we shared resources with you from the Center for Watershed Protection on how to complete a Code and Ordinance Review. This course also provided a resource on Auditing Your Town's Development Code for Barriers to Sustainable Water Management (available in BOX). If you have had time to review the resources, what additional questions do you have? What is your interest in completing this process for your community?
   a. Interest in completing a code and ordinance review -
   b. Chesapeake Beach's Steep Slope Ordinance was uploaded to the BOX folder if you are interested in reviewing it

7. Another cost reducer is **asset management (are we clear on this term? Definition below).** <mark>We discussed last time that some communities have mapped out and have an inventory of their above and below ground assets and others haven't.</mark> For those assets, do you know have a plan or guidance on where they are in their lifecycle? What is their current condition?
   a. How are they being maintained? How is this being paid for?
   b. Institutional knowledge issues - create a book of knowledge
   c. Exist in CIPs - squeaky wheel gets the grease - greatest need first

Funding Urban Forestry Programs
Maryland Cohort
Discussion Forum #4

Topic 1: Benefits of Trees
1. We know that aside from St. Mary's County regulatory drivers are not what is guiding your stormwater programming. Is increasing local tree canopy a goal in your community? Is it one of the potential solutions you have used or want to use for flood and stormwater management? Why or why not?
    a. Holly - Chesapeake Beach - informal goal
        i. Need for formalization
        ii. Mitigation fund and mitigation standards
    b. North Beach - inventory was completed as a starting point - started a tree committee - 55% of tree canopy is crepe myrtles (need more natives)
        i. Oaks and large trees are starting to die off
    c. St Mary's County - no formal or informal goals
        i. Sierra Club is advocating for more trees
        ii. Efforts in parks that trees are maintained
    d. St Michaels - Streetscape Advisory Task Force
        i. Developed list of recommendations to commissioners
        ii. Preserving tree canopy - 1 for 1 replacement
        iii. Brick sidewalks and tree roots issue
            1. Will send you information on new technology - on Talbot street there are grates and not bricks

2. What is your community's attitude towards new tree plantings or existing trees?
    a. Chesapeake Beach - trees are important
        i. Lots of complaints for clearing or cutting of trees
        ii. Green team is working on expanding tree canopy
    b. North beach - trees are mostly 100 years old
        i. Centennial program - honors largest trees in the community (12 of them)
        ii. Awareness but complaints that large and near homes
        iii. Ospreys and bald eagles nesting in large residential trees
        iv. Rule is as long as ospreys have moved - and tree is dead - zoning officer handles permits
            1. BGE will provide boxes on telephone poles
    c. St Marys - desire to keep the county as rural as possible
        i. Easements and protection of land versus desire of private property
    d. St Michaels - people love their trees
        i. Requests to remove trees come from threats to personal property
        ii. Willing to replace trees if one needs to come down
        iii. Arborist has gotten involved when old growth trees are on property boundaries
            1. Had to replace the tree at the maritime museum

3. Some benefits covered in the course include stormwater management and water quality, improving air quality, human health, well-being and safety, economic benefits, climate change mitigation and resilience, equity, wildlife habitat, transportation, and education.
    a) Did any of these surprise you?
        i) Break up headlights at night
    b) Which of the co-benefits are of most interest to your residents? Do you feel like you have the talking points/tools to engage your community on this topic?
        i) Cobenefits - eric colvin - investment that pays dividends down the road - gets better with time
        ii) Larry - begin to be more assertive with climate change - shield their houses, provide share
        iii) Holly - Stormdrains with water sitting in them continually - trees that can withstand brackish water and survive
        iv) Kenilworth group - neighborhood design center - infographics
        v) Freshwater gators to protect from road salt

Topic 2: Elements of a Successful Urban Forestry Program
4. Which of your municipal/county departments deal with trees? Parks, Public Works, Schools, Transportation, Planning? Are these departments working together/collaborating/sharing resources? How?
    Eric Colvin - sometimes they work together - all work on trees - need to clear underbrush but protect the canopy
    North beach - Environmental Committee, zoning, tree committee

Chesapeake Beach - DPW and Parks - county parks and coordination with the county - planner coordinates with DPW too - green team

5. We know that several of you have used volunteers to plant trees and maintain projects. How do you identify these volunteers? Do you work with local watershed organizations or other nonprofit organizations? With so many players potentially involved in forestry (both staff and others) in your community, who is ultimately making decisions?
      a)   Volunteers - local schools, chesapeake bay oyster cultivation too (CBOCs) and green team - CBOCs is funded by the town
      b)   House and garden club - Sierra Club - of southern MD, northern high school, boyscouts/girlscouts, days of service
      c)   College of southern md
      d)   Rotary club - nature trail - st michaels - boy scouts too
      e)   Companies wanting to provide a day of service
      f)   Congregations too
      g)   Formal agreements?
      h)   Chesapeake Tree Canopy Network (an online resource center)

6. Some of the tools available to you that were discussed in the course are **tree canopy assessments and tree inventories.** Have any of your communities completed this? If so, what are you doing with the information collected? What did you learn by completing this process? [Please send us copies of these!]

Tree inventory and assessment in North Beach - takeaway was too many crepe myrtles
State foresters will help (for free) to complete a tree inventory
Holly is interested in completing an assessment and an inventory

7. Some of the strategies presented in the course to preserve existing trees include tree protection **ordinances and land use development codes**.
      a)   Who has done this? What does your ordinance do? (protect existing trees, require tree plantings in new development, fee in lieu?)
      b)   Does it provide a funding stream? Are funds raised as part of this ordinance dedicated to forestry/environmental programs?
      c)   Is it paired with an education and enforcement component? Tell us about it.

Critical area one for one requirements
Town trees too
Habitat protection area checklist - Holly to send to us
St Mary's County critical area protections - Sierra Club advocating for increasing fee in lieu - gets a cursory look every year at budget time
Fee in lieu program paying for oyster reefs and other critical area items, not necessarily trees

Topic 3: Strategies for Funding Urban Forestry

8. Maintenance costs make up more than half of total forestry related expenses. Are you using any cost-saving methods mentioned in the course? [Put in chat box]
      a)   Sharing resources with neighboring jurisdictions
      b)   Integrating trees/green infrastructure into planned projects
            1)   Yes - into road development
      c)   Collaborating across departments
      d)   Working with volunteers
            1)   St mary's county has had a lot of success with this and specifically the Sierra Club - invasive plant removal too
      e)   Partnering with private entities
            1)   Chesapeake Beach has partnered with a local nursery for plant donations - Windmill Farms
   f)   Critical area grants plant funding too

Building Blocks Discussion Forum Guiding Questions
Discussion Forum #1
PA Cohort, December 10, 2020

In attendance:
- Zachary Border - Marysville Borough
- Margie Stuski - Wormleysburg Borough
- Kathy Bauer - Duncannon Borough
- Kasha Griva - Lemoyne Borough
- Kathryn Cloyd - Oxford Borough
- Ed Knittel, Leslie Gervasio - PA State Association of Boroughs
- Laura Cattell Noll, Jennifer Starr - Alliance for the Chesapeake Bay

Background of Borough related to MS4 permit and stormwater management challenges:
- Marysville - first MS4 permit (2017). Beginning to kick things off with stormwater projects i.e. pond and a few streams; looking at a fee; have a PRP in place and know some of the projects they will work on.
- Wormleysburg - neighbors with Lemoyne, share fire services, opportunities for collaboration; currently revising MS4 and want to learn from others.
- Duncannon - new to stormwater world.
- Lemoyne - over 100 years old borough; paved, landlocked, hilly town - adds to SW issues; have excellent engineer who understands the issues; implemented a stormwater fee ~1 year ago; current efforts: street sweeping, bump out rain gardens on main street to slow traffic and stormwater (federal gov't grant, partnered w/outside contractor). Last year received state grants to work on erosion issues. This year: bioswale on railroad property. Stormwater Committee - includes community members; identified top 10 projects, also help with fee and outreach & education.
- Oxford - elected to council in Nov 2019; on environmental Committee which includes mayor and community member, helps to meet MS4 requirements, plan/implement BMPs. Working with Penn State Extension. ACB did 6 acres of riparian forest buffers this fall. Also put in 2 bump outs - ready for rain gardens but need funding (hoping for FEMA funds). Working on 2nd version of PRP.

One thing you learned from the course, or one thing that resonated with you that you've experienced in your community:
- Duncannon - learned about spill kit.
- Wormleysburg - have a community or River Day; try to include education and outreach; may begin partnering with Lemoyne on education/outreach activities or grant writing.
- Lemoyne - public education & outreach; how to effectively convince folks that stormwater is a real issue and why it needs to be addressed; recognize importance of getting the community involved; help them understand how they contribute to the problem and why there is a fee.

Discussion of using/leveraging partnerships:
- Oxford - partnered with Brandywine Conservancy; partnering with ? on signage; partner with local high school (AP Env. Science class)
- PSAB - local conservation districts are underutilized resources; have funding resources and great knowledge.
- Important to also partner and communicate within your local gov't departments/staff.
- Pennsylvania's Dirt and Gravel Low Volume Road Program - innovative effort to fund "environmentally sound" maintenance of unpaved roadways that have been identified as sources of dust and sediment pollution.

What have the impacts of COVID been? Has it impacted revenue streams?
- Oxford - impacted parking revenue.
- Duncannon - no big impact, staying steady for now
- Wormleysburg - delay in real estate tax collection; more demands: added costs for PPE for police and fire; ambulance service needs more money.
- Lemoyne - impacts in staffing (maintenance staff); can't get all normal work done; have to shift priorities; lower tax revenue; next year's budget: bare minimum - took everything extra out; in an emergency management state for finances.
- PSAB - municipal governments lag 1-2 years behind the general economy. Expect to see impacts in mid 2021. Unemployment benefits will run out. Municipal services tax is based on where an individual physically works. There are now legal questions about this since many are working from home during the pandemic. Taxes may not be there next year for municipal budgets, or may be significantly less. Earned income tax will have a delay. Need to look at 2021 as the year we will take a hit. PennDOT cut back significantly (people are not driving). Financial aid from the state will likely be very limited.
- EFC - must consider a variety of revenue streams - will impact budget planning; need to understand impacts moving forward.

Green Infrastructure & LID 101 Discussion Forum Guiding Questions
Discussion Forum #2

PA Cohort, January 4, 2021

In attendance:
- Margie Stuski - Wormleysburg Borough
- Kathy Bauer - Duncannon Borough
- Kasha Griva - Lemoyne Borough
- Kathryn Cloyd - Oxford Borough
- Laura Cattell Noll, Jennifer Starr - Alliance for the Chesapeake Bay
- Ellen Kohler, Medessa Burian - Environmental Finance Center

What is one structural and non-structural practice you have in your community (doesn't have to be on municipal land)?
- All regularly street sweep. Each borough owns a streetsweeper.
- Discussed cost considerations, including life-cycle costs - funding installation AND operations and maintenance.
- Important to engaging stakeholders early and often
- Lemoyne - Appreciated links about how Northeast has been impacted by heavy precipitation patterns. Can take back to her community as to why it is important to address. Not just permit driven - there are other issues to consider.
- Discussed link to hazard mitigation - engage stakeholders like fire chief, etc. who will have to deal with emergency management.
- Wormleysburg - looking for trees to plant to help tolerate flooding events at certain intervals. EFC suggested Landscaping for Resilience in a Changing Climate course or the Chesapeake Bay Landscape Professionals Program.

Hotspots or specific locations in your community that are facing constant stormwater, flooding, or erosion issues:
- Wormleysburg - Localized flooding from outlets not properly cleaned; sometimes the river overflows its banks - happens in some areas after large storms.
- Duncannon - Flooding at Christmas with heavy snow then rain. Downtown area - both ends struggle with constant flooding. Issue where stream comes in to meet river (also where sewer plant is).
- LeMoyne - Bottleneck area source of repeated flooding. Dug bioswales to help divert water - has helped to manage flooding. Flooding in lower business plazas - Market Street, 10th Street, Hummel. Trying to identify areas with pervasive issues and implement practices i.e. bioswale to divert water away from housing developments.
- Oxford: Few spots that flood into roadway and into homes. Planning rain gardens on both sides of the road. Did bumpouts already when they installed a paving project, want to apply for grant funds to plant. Same issue with low volume road on other side of town - want to get grant funds to put in another rain garden there.
- Low Volume Road Program: great resource, less than 500 vehicle trips per day. Could be used for alleys, etc.

Stormwater Financing 101 Discussion Forum Guiding Questions
Discussion Forum #3

PA Cohort, January 27, 2021

In attendance:
- Margie Stuski - Wormleysburg Borough
- Kathy Bauer - Duncannon Borough
- Kasha Griva - Lemoyne Borough
- Roger Ciecierski - Mechanicsburg Borough
- Kathryn Cloyd - Oxford Borough
- Leslie Gervasio - PA State Association of Boroughs
- Laura Cattell Noll, Jennifer Starr - Alliance for the Chesapeake Bay
- Ellen Kohler, Medessa Burian - Environmental Finance Center

EFC gave a presentation on Level of Service and the 5 Step Process for Stormwater Financing:
1. Assess current stormwater program
    - Assemble key stakeholders to determine:
        - Community sentiment
        - Political landscape
        - Organizational capacity
        - Regulated activities
        - Local drivers
        - Existing resources
        - Existing relationships and partnerships
2. Begin evaluating future needs and programmatic gaps - Gap Analysis
    - Evaluate your current level of service
    - Identify gaps between existing LOS and future needs
        - Minimal
        - Medium
        - High
3. Determine where program fits into level of service and evaluate costs
    - Cost categories include
        - Labor
        - Operations and maintenance
        - Capital
4. Develop and finalize proposed stormwater program budget
5. Develop a financing strategy to support budget
    - Include decision makers, residents, and the business community

Regarding your existing program/stormwater projects:
a.   How were they funded?
b.   What challenges did securing funding present?
c.   How are you currently paying for maintenance of these projects?
- Wormleysburg - general fund, mini-grants. Stormwater is combined with maintenance/preserve; have an engineer.
- Duncannon - general fund through streets program; have an engineer.
- Mechanicsburg - Authority put in place last quarter (October 2020) for sewer and stormwater. Borough engineer keeping them updated on upcoming MS4 requirements. Installation ok, but O&M difficult. Began with 50K in budget line item to get up and running. Based on ERU of 3,160 square feet. Looked at street sweeping for credits - went with service every 2 weeks, put in dumpster, using to generate credits. Trying to partner with school and PennDOT. Pursuing FEMA grant (w/PennDOT - also have permit requirements) for a project; they will get 100% credit as well. FEMA liked collaboration between borough, school, and PennDOT. Difficulty partnering with Norfolk Southern. State owned facilities consider it a tax (not a fee) so they won't pay. Borough code won't allow a fee, must be an authority.
    - Need a joint voice to continue reaching out to Norfolk Southern.
    - How did the fee come to be? Knew permit requirements and general fund could not sustain needs. Looked at several options: tiered, 1/10 acre, flat fee, etc. Have a lot of non-taxable contributors (school - $28K/year, borough). Bigger non taxable entities were biggest contributors. Authority enabled them to have to pay as well. Mapped and developed ERU based on average amount of impervious coverage. SFR (single family) and NSFR (non single family). Also iImplemented a credit system - must be measurable reduction of pollutants. Also have an appeals system. Talk to residents/town hall meetings (not well attended). Went consultant route so had documentation to back it up. Looked at what would help residents most, especially during COVID.

- o Fee is more equitable than paying through general funds.
- Group discussed looking at FEMA as a source of funding
- Group discussed the importance of collaboration - consider it as a financing strategy. Funders want to see this.
- Oxford - No green infrastructure until last year. 2020: Safe Routes to School grant to install two rain gardens. Got bump outs installed and then decided it was unaffordable. Going for another grant to try to finish rain gardens this year. Also want to get Low Volume Roads grant for another rain garden. Other small projects have come from general fund. Have contract engineer. Very interested in a SW fee.
- Lemoyne - Fee implemented 1 year ago. Very small town ~4500 residents in 1.6 miles. At time only had office staff of 3: not enough to figure out impervious surface area. Based fee on an equivalent tenth of an acre ($7.70 - $15/month). Larger businesses pay more ($29). Initially a lot of pushback about fee. Went fee route - have 40 nonprofits plus churches, local/state gov't entities. Gov't entities and Norfolk Southern refuse to pay. Borough engineer identified projects. Chesapeake Bay issues got most pushback; received the most buy-in when talked about how it impacted their town. Focus on what they are doing/what it means locally. Figuring out what to call program is one of biggest indicators of public acceptance - about cleaning up the pollution, greening your space, improving air quality and quality of life for your residents, cleaning local water and air sources, addressing localized flooding. Central PA has 3rd highest rate of thyroid cancer. Tie together health risks and environmental improvements.
  - o Good case study regarding Dig Once, collaboration across projects, etc.
  - o How did fee come to be? Knew there were a significant number of projects that needed to be done to meet permit requirements (next door to Susquehanna) - needed funds to do it. Debated authority (less control) and decided on fee due to cost efficiency (sewer costs are high). Dedicated fee/tax helps to get grants as you have match ready.
  - o Lemoyne's advice:
    - Add in ordinance: put SW feel on sewer bill, so no additional cost to manage.
    - Don't reinvent the wheel. Look at models from other/neighboring communities.
    - Public education and involvement is key, with residents and businesses/large payers.

In attendance:
- Margie Stuski - Wormleysburg Borough
- Kathy Bauer - Duncannon Borough
- Kathryn Cloyd - Oxford Borough
- Laura Cattell Noll - Alliance for the Chesapeake Bay
- Ellen Kohler, Medessa Burian - Environmental Finance Center

What was the most appealing/energizing thing you learned from the course?
- Oxford - timely information to review codes/ordinances for new development coming in. Appreciated information re: reducing costs from heating/cooling; aesthetics - attraction
- Duncannon - Want to look into having a Shade Tree Commission.
- Wormleysburg - Have Shade Tree Commission. Need guidance on tree replacement for trees that fall - for bank stabilization. Also interested in reforestation along the banks around the school.
- Lots of good resources were shared in the course - EFC will add to Google Drive.

Is increasing local tree canopy or planting more trees a goal in your community? Could it be? Why or why not?
- Duncannon - No, but they would be willing to consider making a tree canopy goal.
- Oxford Regional Planning Committee was able to get a woodland assessment, reduced cost through partnership.
- Wormleysburg - Yes, and would like to find partners to help. Need a Master Plan to help them move forward and identify areas of overlap. Could use some support to develop the Master Plan.

Do you have any information about your community's attitude towards tree plantings or existing trees?
- Oxford: no information on community's attitude
- Duncannon - Big trees cause huge problems with sidewalks. Often remove part of sidewalk for roots to grow.
- Wormleysburg - many large oak trees. Utility companies are cutting back and killing them. Uneven sidewalk issues.

Discussed benefits of trees covered in the course including:
- Stormwater treatment
- Air quality
- Oxygen producers
- Carbon sinks - help mitigate climate change
- Public health - physical and mental
- Shading and cooling - adapting to climate change
- Increase property value
- Improve safety
- Traffic calming
- Provide wildlife habitat
- Oxford - Financial benefits would speak to businesses and residents.
- May need to have a collective voice to speak to utilities. Can conservation districts help with communicating with public utilities regarding their practices?

Which of your municipal/county departments deal with trees? Parks, Public Works, Schools, Transportation, Planning? Are these departments working together/collaborating/sharing resources? How?
- Wormleysburg - Parks & Recreation.CAPCOG identifies members who need services, then they bid it out. Just won salt bid. Share equipment, etc. Very successful.
- Oxford - Public Works comes in if a tree needs to be removed. Contractors.
- Duncannon - Do everything in house. Not expensive - something for boroughs to consider to do this work in house or tell utility they will hire own contractor.

We know that several of you have used volunteers to plant trees and maintain projects. How do you identify these volunteers? Do you work with local watershed organizations or other nonprofit organizations? With so many players potentially involved in forestry (both staff and others) in your community, who is ultimately making decisions?
- Oxford - no tree planting projects with volunteers
- Wormleysburg - small tree planting along the river. Have 2x year river cleanup and do some plantings. Could identify organizations to partner with: eagle/boy scouts, watershed orgs, etc.

Some of the strategies presented in the course to preserve existing trees include tree protection ordinances and land use development codes.

        a.   Who has done this? What does your ordinance do? (protect existing trees, require tree plantings in new development, fee in lieu?)

        b.   Does it provide a funding stream? Are funds raised as part of this ordinance dedicated to forestry/environmental programs?

        c.   Is it paired with an education and enforcement component? Tell us about it.

- Duncannon - Unsure if they have codes and ordinances to protect trees. Probably with the Shade Tree Commission, but not sure. Partner with Appalachian Trail Conservancy.
- Wormleysburg - Shade Commission Ordinance requires that they get permission for tree removal. Fines go into general fund.

How are you funding your current forestry program? Which revenue sources are you interested in?

- Oxford - liked the idea of Adopt a Tree and Memorial Trees. Lancaster Memorial Tree: $350 for small tree and maintenance for 3 years.
- Group doesn't have a special revenue stream for tree maintenance or forestry programs.
- EFC discussed the importance of thinking about the maintenance piece and costs. Can't cover everything with grant funds.
- Could change codes/ordinances to require tree planting in parking lots.

In attendance:
- Leslie Ayres – Rockbridge County
- Ron Fraizer – Rappahannock County
- Dustin Carter – Rappahannock County, Lord Fairfax Community College
- Jim Crozier – Orange County
- Kelly Butler – Page County
- Laura Cattell Noll, Jennifer Starr – Alliance for the Chesapeake Bay
- Michelle Kokolis, Jen Cotting – Environmental Finance Center

Where does your drinking water come from:
- Rappahannock County – primarily well water
- Rockbridge County – spring water
- Orange County – from the Rapidan or aquifer
- Page County – well water

Impacts to water quality in your community:
- Orange County – large development in the east end of the county adding to water/sewer system; County has stormwater permits for specific operations; feels like bearing the brunt for their downstream neighbors; responding to citizen complaints; some green infrastructure comes with new development
- Rockbridge – Maury River and parts of the James in the County; livestock issues involving turkey and chicken farms; community members generally not connected water quality impacts to the value of the resource
- Rappahannock County – the County does not have a permit; CSS overflows; Friends group does some limited outreach and education
- Page County – works with DEQ on landfill permit; flooding is a driver that resonates; farm run off issues; spends a great deal of time pulling permits for construction

Local needs related to stormwater:
- Orange County – a better understanding of where the "real" problems are; feel like they cannot be doing any more than they are already doing
- Rappahannock County – addressing the mindset that pollutants are "urban"
- Rockbridge County – streambank fencing needs; incentivizing change; road salt; failing drain fields; straight pipes; increasing discomfort in declining water quality perhaps more testing to inform messaging

In attendance:
- Leslie Ayres – Rockbridge County
- Ron Fraizer – Rappahannock County
- Dustin Carter – Rappahannock County, Lord Fairfax Community College
- Jim Crozier – Orange County
- Kelly Butler – Page County
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Existing green infrastructure in your community:
- Rappahannock County – 15 year old rain garden on one site; retention at another site; ag-based stream bank restoration; Friends of the Rappahannock involved in tree planting for stabilization
- Rockbridge County – scenic river designation as driver for some buffer protection; Lexington community pool has rock beds along the edges; Lexington is a hot spot for flooding and a fee system could be coming soon; interested in codes and ordinance review
- Orange County – new public safety building has two rain gardens with bioretention one capturing runoff from the parking area the other from the building itself; $16 million to go over and above DEQ requirements to make sure the site looked nice; signage to educate visitors would be of interest; County DPW maintains; County nursing home invested $1 million in stormwater tanks, ponds, aesthetics; Friends of the Rappahannock offer grants for rain gardens and do rain barrel giveaways; Germanna 600 acre SFH subdivision will be installing stormwater controls; in rural areas, mostly stream bank fencing
- Page County – some landscaping and slope management; most new development is doing aesthetically pleasing ways to address the regs; many go above and beyond

Discussion of agricultural practices:
- Orange County – practices are promoted by SWCD and Farm Bureau; FFA working with farmers to reduce loads and use buffer program; organic dairy farm using "pit' BMP
- Rockbridge – interested in the tax benefits for farmers who install BMPs and other ways to encourage good stewardship
- Rappahannock County – BMPs are encouraged, but in the absence of a regulatory driver uptake is voluntary; making use of federal incentive programs; concerns over fencing and taking land out of production

Would there be value in reviewing codes and ordinances for opportunities to encourage green infrastructure:
- Orange County – NoVA DEQ is pretty strict as it is; probably do not want to open up the codes and ordinances because it gets pretty messy
- Rappahannock County – working on Comp Plan update from 2004; Faquier County has incentives for pulling land out of hay production; nothing beyond state regulations are required; erosion and sediment control inspections for construction
- Rockbridge County – pet waste stations on trails but no county ordinance currently but possibly of interest; codes and ordinance review generally is of interest; what to do with dam removal site
- Page County – erosion and sediment control ordinance based on state template but could use an update; stormwater regs adopted in 2014 are pretty current; floodplain will updated in the next year looking to make it a standalone

In attendance:
- Leslie Ayres – Rockbridge County
- Ron Fraizer – Rappahannock County
- Jim Crozier – Orange County
- Kelly Butler – Page County
- Laura Cattell Noll – Alliance for the Chesapeake Bay
- Michelle Kokolis, Jen Cotting – Environmental Finance Center

Are there any projects that you would like to speak with service providers about?
- Rappahannock County – thinking about different "parts of the puzzle;" County tends to take a wait and see approach based on reaction to development and relies on the SWCD
- Rockbridge County – golf course and surrounding development want to upgrade zoning; revving up to do projects with additional impacts; need to fix prior impacts and prevent new ones; looking to the Rockbridge Conservation Council
- Orange County – thinking about things but nothing solid yet; solar install on a creek to the Rapidan
- Page County – mostly reactive to development; Luray Greenway and associated foundation that cares for it; one spot downstream has siltation island forming; standing pet waste program

Challenges:
- Page County – need leadership to understand that there are mandated things that require attention
- Orange County – strong belief in property rights and DEQ is often in conflict with that; high turnover among inspectors; violations seem more focused on petty housekeeping issues rather than real impacts to water quality
- Rockbridge – Devil's Backbone effluent issue; zoning capacity spread thin; education and outreach that can lay the way for greater investment, and perhaps even a fee system

Hot spots, current infrastructure and funding:
- Orange County – additional staff, b/c there is currently only one erosion and sediment control inspector; greater investment is a hard sell though with other County needs; only existing fees are on permitting for development; in the absence of fees projects do not get done, only the DEQ requirements; most things are done through the general fund; Friends of the Rappahannock has done some work with HOAs on private property; could big developments be incentivized to do more through codes/ordinances?
- Rockbridge County – county stormwater system is unclear; City of Lexington has systems and is considering fees to cover costs; much is done on the university campuses; need education to make the connection that this is an asset tied to health and recreation priorities and encourage action to protect it
- Page County – the towns have some infrastructure but not enough, no MS4s but flooding issues; outside of the towns, no system outside of what is put in place with new development

Virginia Cohort
Discussion Forum #4
Funding Urban Forestry Programs
January 19, 2020 10 am

In attendance:
- Leslie Ayres – Rockbridge County
- Ron Fraizer – Rappahannock County
- Jim Crozier – Orange County
- Dustin Carter – Rappahannock County, Lord Fairfax Community College
- Laura Cattell Noll – Alliance for the Chesapeake Bay
- Michelle Kokolis, Jen Cotting – Environmental Finance Center

Opening discussion about the format for the Technical Assistance Provider Forum

What's going on with tree canopy in your community:
- Rappahannock County – over 20% in easements and 1/3 of the County in Shenandoah National Forest make trees not much of a concern; not much developable land; tree maintenance is done by DPW or Parks and Rec with support from the general fund
- Rockbridge County – not doing enough about the value of natives and creating habitat; County feels it has been burned on easing land; with limited developable parcels, easements get in the way and puts development pressure on less desirable parcels
- Orange County – 1/3 of the County is in easements or protected (battlefields); there is an arborist for trees on County properties; Piedmont Environmental Council maintains easements supposed to be part of a pilot program for carbon crediting for tree farms that would pay people to maintain forest lands and parcels' credits would be aggregated by the County; new development has stringent requirements; no requirements regarding natives
- VML proposed legislation – would give localities more power over tree conservation and replacement requirements

Riparian Buffers:
- Orange County – most farmers are already involved in the cost share programs; no County land is buffer appropriate; Fredericksburg actually owns much of the shoreline for their source water protection program; Friends of the Rappahannock does this work, but does not get into the east end of the County
- Rockbridge – there are opportunities on marginal cropland for riparian buffers; buffers for the Maury/Upper James is a hot topic
- Rappahannock County – the nonprofits are involved in this, but not the County; interest in perhaps engaging a grant write for these types of efforts

Codes and ordinance review:
- Orange County – Definitely not! This will open the door for bureaucrats to create more things for the County to do.
- Rockbridge County – a review would not do harm, but not sure anyone would pay attention
- Rappahannock County – probably do not need any more ordinances; interested in education and voluntary programs

APPENDIX C

Project Team Debrief Meeting Summary

3/4/21 Attendance: Jennifer Starr and Laura Cattell Noll of the Alliance
Jennifer Cotting, Medessa Burian, Ellen Kohler, Michelle Kokolis, Mike Hunninghake, and Natalia Sanchez of EFC

Reflecting on the project, how did each of the items below go? What could we improve?
Recruitment
- PSAB is awesome!!! Likely will continue partnering with them moving forward
    Varied a lot by cohort
- Roles and responsibilities - miscommunication early on
- Sustainable PA - not reached out to because of good conversation with PSAB - PML territory
- Leveraged Mike's relationships with municipalities really well
- Hard for Michelle because of lack of connection with trusted sources - Soil and Water Conservation Districts would be a better route for recruitment moving forward

Curriculum/courses
- VA - didn't meet people where they were at then the Board of Supervisors folks
- Counties versus municipalities and regions were not urban
- Courses had some glitches - need it to flow easily moving forward

Incentives for participation
- Profile on your community in PSAB
- Credit in their continuing education training system - keep talking with PSAB about this opportunity for local elected officials
- Testimonials from this group to use for future recruiting

Kickoff Workshop
- PennVEST talked too long - other than that all went well - good visibility with keynote speakers

Technical Service Providers Workshop
- All very different but in a good way - loved the tailoring of them for each audience
- Appreciated the opportunities of peer-to-peer and brainstorm with experts in the field
- Matchmaking piece was particularly successful with the VA cohort

Discussion Forums

- Highlight and bread and butter - what people liked the most
- Harder to generate conversation in a Zoom setting than face to face
- Have communities problem solve amongst themselves and allow ourselves to sit back
- Appetite for more

Thinking ahead:
- How can we build on the relationship we've built with each cohort?
- Moving from learning to operationalizing
- In VA we can follow up with each individual person - there's only 4
- Sustainable MD keeps all of these organizations engaged

Is there interest in replicating this project? Who should we engage to do this?
- Harry Hughes - implementation and engagement - Nancy Nunn - MD Rural Council
- PA - there's money there - make relationships for the
- VA - Ann Jennings
- Jennifer and Laura are happy to write letters of support for replication
- Small watershed grant - Capital Region in PA, narrowing the geography would allow us to do a deeper dive - issue is that we are not an eligible applicant
- Follow up conversation with Nissa for replication (VA)
- Follow up discussion with Joe Maroon (VA)
- Campbell Foundation - local government education - American Rivers and another group was funded (PA)
  - If York county was interested maybe Campbell Foundation is our way in
- Alliance would be willing to be a pass through entity if needed

Publications (MML, PSAB, VACo) and other promotion avenues for project
  - Ola is happy to write the MML one as well
  - Just write the profiles for VA??? At least share it on the Alliance blog?

Program Evaluations

Name	Community	Title	Why did you choose to register for the Seeking Stormwater Solutions Program?	Professionally, what role do you play in managing stormwater?	How valuable was the Kickoff Workshop?	How valuable was the peer-to-peer interaction component?	How valuable was the final "Meet Your Technical Service Providers" Workshop?	Have you or do you plan to follow up with a technical service provider? If yes, for what type of project?	Is there another technical service provider that you would like to speak with that was not present at the workshop?
Jada Stuckert	Town of Leonardtown	Planner	Continuing Education	Planner for all departments	Very Valuable	Very Valuable	Very Valuable	Yes, for multiple projects in Leonardtown	Not that I know of
Kymberly Kudla	Town of St. Michaels	Planning & Zoning Officer	St. Michaels has a big issue with stormwater.	I have to ensure codes are being met particularly with increases in lot coverage which means more impervious surface that must meet stormwater regulations.	N/A - did not attend	Very Valuable	Very Valuable	Yes, a few have actually sent me some information already.	
Roger L. Ciecierski	MECHANICSBURG borough	Borough Manage	compare and exchange ideas and solutions	Administer the operations of the Borough and Authority	Very Valuable	Very Valuable	Very Valuable	Yes, there are multiple that i think will provide valuable resources for the Borough on numerous projects	
Kathryn Bauer	Duncannon Borough	Secretary	It was a great learning opportunity	I put project idea in the right hands	Very Valuable	Very Valuable	Very Valuable	Not immediately, But I now have some ideas for the future	The Susquehanna River flows right alongside our town. I would love to have a better understanding of how pollution is being dealt with in the

Name									
									Susquehanna directly.
Kasha Griva	Lemoyne Borough	Lemoyne Borough Council	To better understand stormwater and learn how other municipalities are dealing with similar issues	Stormwater Committee Chair	Very Valuable	Very Valuable	Very Valuable	Yes. Will be actively looking to partner with TSPs for future stormwater projects.	
Kelly M Butler	Page County	Stormwater Program Administrator	Requested to by my administration	Program Administrator	Somewhat Valuable	Somewhat Valuable	Very Valuable		
James P. Crozier	Orange County VA	Chairman Board of Supervisors	To gain more insight regarding what we as a locality have available as resources.	As a Board we are the body that funds all departments and are responsible to enforce state mandates and federal mandates. Additionally we determine land use decisions and the future health of our land and impacts downstream.	N/A - did not attend	Very Valuable	Very Valuable	Yes. Both our Regional commission and Friends of the Rappahannock. The regional Commission for collaboration on land use projects and information resource. Friends of the Rappahannock for project assistance (rain gardens, riparian buffers, green landscape projects).	Not that I know of.

Name	Did you find the courses relevant to your position and community? [Building Blocks of an Effective Stormwater Management Program]	Did you find the courses relevant to your position and community? [Green Infrastructure and Low Impact Development 101]	Why did you choose to register for the Did you find the courses relevant to your position and community? [Stormwater Financing 101]?	Did you find the courses relevant to your position and community? [Funding Urban Forestry Programs]	Were there any stormwater related topics not covered in the program that you would like to learn more about?	Did the structure of the program (kickoff workshop - self paced courses - discussion forums - TSP workshop) work well? What are your suggestions for improvement?	What overall improvements would you suggest for the program?	Is there a project or initiative that you would like to discuss with the Environmental Finance Center?	Are you interested in Funding Office Hours ?

Name									
Jada Stuckert	Very Relevant	Very Relevant	Somewhat Relevant	Somewhat Relevant	Possibly adding more information on the inspection and maintenance of different structures.	I thought the program was well done.	None	Not at this time	Yes
Kymberly Kudla	Very Relevant	Very Relevant	Very Relevant	Very Relevant		All went well. A few times I was close to not finishing the courses due to my workload but that was an issue on my end.			Yes
Roger L. Ciecierski	Very Relevant	Somewhat Relevant	Very Relevant	Somewhat Relevant		I thought they were well planned and to the point			
Kathryn Bauer	Very Relevant	Very Relevant	Somewhat Relevant	Somewhat Relevant		Loved the format and structure. This was by far the best stormwater training I have ever attended. The opportunity for real discussion was extremely helpful!		The Borough is the process of purchasing a 4 property tract of housing in the floodplain. We plan to demolish it and I am not sure where that could go, but it may be an opportunity for storm water management.	Yes
Kasha Griva	Very Relevant	Very Relevant	Very Relevant	Very Relevant	Would love to learn more about remediation or pollutant reduction directly in	I liked the pace. There was enough time between sessions to cover the Material in between work	The only feedback for improvement would be MOST center abilities on	Not yet but perhaps soon! This program gave me the idea to install rain gardens and sidewalks in a	Yes

					Susquehanna River.	responsibilities.	mobile devices. It is challenging to navigate certain screens on iPads and cell phones. Loved the entire program. I would enjoy participating in additional sessions or future projects if available. Thank you all so much!	downstream area of town in front of shops, in a highly paved area. We will see if I can get others invested!	
Kelly M Butler	Very Relevant	Very Relevant	Very Relevant	Very Relevant		Yes			No
James P. Crozier	Very Relevant	Very Relevant	Very Relevant	Very Relevant		Yes I would like to see a more user friendly online interaction.		Not at this time.	Yes

APPENDIX D

Borough officials look for answers on stormwater

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 water unsafe. Flooding, caused by stormwater, can endanger private property and critical infrastructure like roads, utilities, and cellular phones/internet access. 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, and negatively impact water supply, recreation, and/or fish consumption [1]. Unfortunately, these challenges are only going to worsen, as more frequent and intense downpours are on the rise. As precipitation levels rise, so does the ongoing need for appropriate and efficient stormwater best management practices (BMPs) in order to mitigate flooding and the effects of contaminated runoff on our 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 PSAB, created a series of stormwater training sessions for local governments entitled *Seeking Stormwater Solutions: Getting the MOST for Local Leaders*. These courses offered a 3-month seminar for Pennsylvania's borough officials to identify and address their local stormwater concerns. Learn more about these borough representatives and their communities' challenges and solutions for stormwater management below.

Oxford Borough
Kathryn Cloyd, Councilmember

"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."

"I'm a great believer in not reinventing the wheel, and my hope was to learn how other municipalities have dealt with issues similar to ours."

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[1] Pennsylvania Department of Environmental Protection, 2016 Report

Oxford Borough is currently identifying opportunities to implement green infrastructure, however, has faced challenges due to lack of installation space, and the need to coordinate across four separate watersheds within the municipality. In spite of the challenges, Oxford has maintained momentum by constructing bump-outs that will contain rain gardens in a known flood zone and recently partnered with the Alliance for the Chesapeake Bay, alongside several community and regional partners and volunteers, to install three riparian forest buffers. Projects

Figure 4 Riparian forest buffer installation in Oxford. 2020. Photo courtesy of Kathryn Cloyd, Oxford Borough

such as these help filter pollutants from stormwater and are cost-effective solutions to meeting Municipal Separate Storm Sewer Systems (MS4) requirements. According to Councilmember Kathryn Cloyd, Oxford's Public Works Department conducts biweekly street sweeping, which reduces sediment flow to its storm sewers. Oxford representatives 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 currently revising its Pollutant Reduction Plan and applying for several conservation grants which will lay the groundwork for future stormwater initiatives, including the installation of more rain gardens, residential rain barrels, and other green BMPs.

Duncannon Borough
Kathy Bauer, Secretary

"The Borough is taking steps to become more educated on needs, solutions, practices, and implementation of Stormwater Management."

When identifying areas of opportunity regarding stormwater BMPs, Duncannon Borough is

Figure 5: Duncannon Borough nestled under an extensive tree canopy adjacent to the Susquehanna River. Photo courtesy of Kathy Bauer, Duncannon Borough

restricted in space to develop and implement stormwater systems. Nestled between the Susquehanna River, which is the source of flooding for the borough, and a neighboring township, space to install green infrastructure projects compete with residential areas, churches and other privately-owned land. Also, while the municipality currently contracts an engineer for its infrastructure needs, there is not a dedicated person to manage new and existing stormwater systems. Borough Secretary, Kathy Bauer, has identified the gap in the implementation of stormwater BMPs and looked to the *Seeking Stormwater Solutions* training courses for education on where runoff effects could be mitigated. She also looks forward to the connections made with

neighboring river municipal leaders and discussions around successful stormwater management practices to relay back to the borough.

Mechanicsburg Borough
Roger Ciecierski, Manager

"The Borough of Mechanicsburg consists of 2.6 square miles of land, most of which privately owned. This leads to placement issues of BMPs and forces us to become creative in addressing our permit requirements."

"When you are facing the same problem for a long while, you can develop tunnel vision."

Figure 6: Retro-fitted basin consrtucted by the Borough to capture drain from downtown and residential sectors. Photo courtesy of Roger Ciecierski, Mechanicsburg Borough

Spanning around 2.6 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 have proven to be challenging. In finding solutions, Mechanicsburg has enacted 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. In signing up for the *Seeking Stormwater Solutions* training sessions, Ciecierski intended to gain enhanced knowledge of existing resource opportunities to continue implementation of practices, however, admired the ability to work alongside and learn from his peers which has in turn, helped to identify unique strategies to further address local stormwater challenges.

Lemoyne Borough
Kasha Griva, Councilmember

"The Borough continues to assess and address needs for additional stormwater work and Best Management Practices (BMPs) in conjunction with other projects. 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."

Figure 7: Lemoyne Borough native plant rain gardens. Photo courtesy of Kasha Griva, Lemoyne Borough

Predominated by historically constructed neighborhoods and businesses that sit along varying levels of elevation, Lemoyne Borough has minimal public green space along its heavily utilized roadways and town centers within its 1.6 square mile territory. The borough has struggled with managing runoff from current building structures that were built before stormwater regulations were implemented. In addition, any polluted runoff travels down Lemoyne's sloped terrain which causes flooding and erosion, before emptying into local streams and tributaries that flow into the Susquehanna River. Lemoyne is currently planning to address localized flooding and its aging infrastructure according to 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 legacy sediment. Revitalization of this stream stabilized its banks which in turn reduces the public health concern of erosion from toxic contaminants in the soil. Councilmember Kasha Griva emphasized Lemoyne's desire to implement stormwater BMPs within its community, describing a recent beautification project of the borough's Market Street Streetscape where rain gardens containing native plants were intentionally incorporated into the design of the project. Lemoyne continues to prioritize the inspection of its current infrastructures as it assesses stormwater management needs into the future – which includes the implementation of a community-wide stormwater fee that is collected for stormwater management purposes only[2]. Griva hopes to utilize the *Seeking Stormwater Solutions* sessions to continue learning about stormwater in order to better serve her community, and engage with local elected officials from neighboring boroughs on ways to collaborate into the future.

Resources:
1. Municipal Online Stormwater Training (MOST) Center: https://mostcenter.umd.edu/
2. A Local Government Guide to the Chesapeake Bay: https://dced.pa.gov/library/?wpdmc=publications_and_documents
3. Chesapeake Stormwater Network: https://chesapeakestormwater.net/bay-stormwater/ms4-portal/
4. Penn State Extension: https://extension.psu.edu/municipal-staff-and-elected-official-stormwater-training-needs?j=577911&sfmc_sub=35727366&l=159_HTML&u=12517731&mid=7234940&jb=11&utm_medium=email&utm_source=MarketingCloud&utm_campaign=WAQQ-

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[2] Lemoyne Borough Stormwater Presentation

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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.
https://www.allianceforthebay.org/