

IMPLEMENTATION SUPPORT FOR LOCAL OFFICIAL WATERSHED EDUCATION AND CAPACITY BUILDING

Final Report – January 2022



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EXECUTIVE SUMMARY

The [2014 Chesapeake Bay Watershed Agreement](#) includes the [Local Leadership outcome](#), which is 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'*.

Building on several years of previous work, this project titled *"Implementation Support for Local Official Watershed Education and Capacity Building"* sought to launch a watershed outreach education program for local elected officials that would advance the Local Leadership outcome.

Despite significant challenges, the project successfully launched and delivered educational content to local elected officials in all seven signatory jurisdictions in the watershed. Through a combination of conference sessions, membership organization publications, meetings and roundtables, webinars and more, this project directly engaged more than 1,500 local elected officials and indirectly engaged an additional 19,000 local leaders (full details in Appendix C).

By successfully launching watershed educational programming for local elected officials in all seven jurisdictions, this project laid a strong foundation for future efforts to *'increase the knowledge and capacity of local officials'*. Recognizing the critical role of these local decision makers, this investment will pay dividends in the form of local conservation actions that support the long-term health of the Chesapeake Bay Watershed.

Acknowledgements

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INTRODUCTION AND BACKGROUND

The Chesapeake Bay Program (CBP) has long recognized the vital role that local governments play in watershed restoration. In the [1987 Chesapeake Bay Agreement](#), the Executive Council created the Local Government Advisory Committee (LGAC) who provide recommendations and other high-level guidance on how to effectively implement projects and engage the support of local governments to achieve the goals of the Bay Agreement.

The [2014 Chesapeake Bay Watershed Agreement](#) took this commitment to local governments one step further by including the local leadership outcome, which is 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'*.

Since the addition of the local leadership outcome, the CBP and partners created a Local Leadership Workgroup (LLWG), which is tasked with coordinating and overseeing efforts to meet the outcome. In 2015, a group of key stakeholders drafted a [Management Strategy](#) (which was subsequently updated in 2019) and a Logic and Action Plan (updated every two years, see references for links).

These guiding documents outlined the need to better understand local leaders' priorities, identify existing educational programs and gather expert recommendations on engaging local leaders. Two key reports have helped to fill these gaps: [Chesapeake Watershed Local Leadership Development Programs](#) (2015) and [Strategic Outreach Education Program for Local Elected Officials in the Chesapeake Bay Watershed](#) (2017).

The findings and recommendations from these reports led to the creation of this project, titled *"Implementation Support for Local Official Watershed Education and Capacity Building"*. The goal of this project was to launch a watershed outreach education program for elected officials (see Appendix A for scope of work). Using adaptive management, the workplan was adjusted throughout the project timeline (February 1, 2017 – December 31, 2021) but continued to have the same core elements:

- **Task 1:** Evaluate findings of the EcoLogix Group report to identify existing best practices for educating elected officials
- **Task 2:** Develop the project approach
- **Task 3:** Launch strategic outreach education programming with trusted sources
- **Task 4:** Deliver educational content across the watershed
- **Task 5:** Report findings from work

TASK 1 AND 2: EVALUATION AND APPROACH

The first phase of the project included a deep dive into previous work to date, including but not limited to two previous Goal Implementation Team (GIT) funded projects: [Chesapeake Watershed Local Leadership Development Programs](#) (ELS) and [Strategic Outreach Education Program for Local Elected Officials in the Chesapeake Bay Watershed](#) (EcoLogix). Several recommendations were identified as key best practices for this project:

Focus on elected officials: *'We believe that the most effective way to achieve the Chesapeake Watershed's goal of increasing the knowledge and capacity of local officials is to target elected local officials'* (ELS pg. 7).

Maximize program relevancy: *'To best engage and support elected local officials, based on our interviews and program research, we believe it is vital that programs provide content which is both relevant to and specialized for these leaders'* (ELS pg. 7).

Educate about watershed fundamentals and local best practices: *'We identified local officials' need for education which includes 1) fundamentals about big picture watershed conservation and restoration activities and 2) best practices for implementing these activities and policies at the local level'* (ELS pg. 8).

The importance of local priorities: the EcoLogix Group report highlighted the necessity of using *'local priorities as the portals through which to communicate local best practices and Bay-related goals, strategies and outcomes'* (pg. 6). The local priorities identified included economic development, infrastructure maintenance and financing, public health and safety, and education.

The need for tailored content for local officials: *'At present there is no watershed restoration educational program that specifically tailors content to local elected officials in the Chesapeake Bay Watershed in a way that connects the content to local priorities'* (EcoLogix pg. 36). *'Our recommendation is that the Bay Program Goal Implementation Teams and Work Groups charged with developing and implementing the management strategies use these examples to guide the development of educational and technical support materials for local leaders that are specific to the goals and outcomes of the Bay Watershed Agreement'* (EcoLogix pg. 10).

Use the best education activities: The ELS report highlighted educational activities that are a mix of in person/online and include both watershed fundamentals and local best practices. The recommended activities include, but are not limited to expert presentations, peer to peer workshops and site visits (ELS pg. 9).

Need to develop a clear and effective delivery mechanism: *‘Due to the scale of the watershed’s leadership training needs and gaps in each program’s abilities no program alone was suitable to shoulder the Watershed Agreement’s call to action’* (ELS pg. 7). *‘Our primary recommendation [is] to development a delivery mechanism with stakeholder input’* (ELS pg. 12).

The review and evaluation of previous efforts identified two key areas where additional work was necessary before a watershed outreach education program for elected officials could be launched and delivered: the need for tailored content for local officials and the need to develop a clear and effective delivery mechanism.

In 2019, a previously unawarded CBP request for proposals was re-vamped into “*Cross Outcome Watershed Educational Materials for Local Elected Officials*”. The major goal of this contract, which was awarded to Green Fin Studios, was to develop 4 – 8 educational modules for local elected officials that provided information and case studies on watershed agreement-related issues through the lens of local government priorities. In early 2021, the final products of this work, titled [A Local Government Guide to the Chesapeake Bay](#), were completed (see Appendix B). The guide helps to fill a key gap identified in both the ELS report and the EcoLogix report: the need for educational content that is tailored for local elected officials.

In 2018, during the Local Leadership Outcome’s Quarterly Progress meeting, members of the CBP Management Board asked for staff to create a clear strategy for engaging with local government leaders. With input from the LLWG, LGAC and others, a [CBP Local Engagement Strategy](#) was drafted and shared with Management Board in 2019. The strategy outlines clear roles (audience, deliverer/trusted source, translators, subject matter experts), summarizes current local engagement needs, and provides an example of how technical material can be ‘translated’ into framing that will resonate with local officials. This strategy, which was endorsed by the CBP Management Board, fills the gap that EcoLogix identified: the need to develop a clear and effective delivery mechanism.

With best practices identified, a new set of educational materials tailored for local officials and a strategy outlining delivery mechanism, the project team was able to shift full focus onto launching and delivering a watershed outreach education program for elected officials.

TASK 3 AND 4: LAUNCH AND DELIVER

Utilizing an adaptive management approach, “*Implementation Support for Local Official Watershed Education and Capacity Building*” launched and delivered

educational content to local elected officials in all seven signatory jurisdictions in the watershed. During the 2019 – 2021 time period, through a combination of conference sessions, membership organization publications, meetings and roundtables, webinars and more, this project directly engaged 1,528 local officials and indirectly engaged an estimated 19,000 local government officials and staff. Since Spring 2021, content delivery has focused on rolling out *A Local Government Guide to the Chesapeake Bay*, which has reached an estimated 3,700 local officials, across all seven signatory jurisdictions. Full details on launched and delivered educational programming are in Appendix C and some examples are included in Appendix D.

Here are some examples of implementation in 2019 - 2021:

Delaware

Subject matter experts and communications staff at the [Delaware Department of Natural Resources and Environmental Control](#) (DNREC) tailored *A Local Government Guide to the Chesapeake Bay* for local officials in their state. They are working with senior staff in their counties and municipalities to share the materials in a series (one module per month starting in November 2021). By sharing these resources through trusted senior staff, they have effectively engaged with 45% of Delaware's local elected officials.

District of Columbia

The Metropolitan Washington Council of Government's [Chesapeake Bay and Water Resources Policy Committee](#), includes elected officials from all 24 local governments in the Washington DC metropolitan region. The committee's [May 2021 meeting](#) included a presentation on *A Local Government Guide to the Chesapeake Bay* and how local officials can use the resource within their circles.

Maryland

The [Maryland Association of Counties](#) (MACo) maintains a robust and well-respected blog, titled Conduit Street. In May 2020, at the suggestion of project partners, MACo staff wrote and shared a [blog post](#) about an upcoming United States Forest Service (US FS) webinar. The webinar featured [Making Your Community Forest-Friendly A Worksheet for Review of Municipal Codes and Ordinances](#), a key resource recently identified by the LLWG. The blog post was sent to all 10,286 Conduit Street subscribers, many of whom are local government elected officials, appointed officials and senior staff.

Municipal Maryland is the [Maryland Municipal League's](#) (MML) bi-monthly magazine with a readership of more than 2,000, including all of the municipalities in the state. In December 2021, the magazine featured an article titled '[Seeking Solutions for](#)

[Addressing Stormwater-related Flooding Challenges](#)'. The article profiles several local leaders that have actively worked to address stormwater in their community and points readers to additional resources including [Municipal Online Stormwater Training \(MOST\) Center](#) and [Module 6: Protecting Your Infrastructure Through Stormwater Resiliency](#).

MACo and MML collaborate with the University of Maryland's School of Public Policy on the [Academy for Excellence in Local Governance](#). In November 2021, MML worked with project partners to organize [How Your Watershed Works](#), an Academy elective course based on Module 1 of *A Local Government Guide to the Chesapeake Bay*. The course featured MML President and LGAC Member Mayor Jake Day of Salisbury along side his senior staff member Amanda Pollack, Director of Infrastructure and Development for Salisbury. In a post-webinar survey, 100% of attendees 'strongly agreed' (55%) or 'somewhat agreed' (45%) with the statement that 'I can apply what I've learned to my work'. One attendee quoted 'I had no idea our Chesapeake Bay had water runoff from New York'.

Both MML and MACo have also been receptive to conference panel sessions. Between 2019 and 2021, project partners helped to facilitate five panel sessions that covered topics ranging from [technical assistance](#), to [resilience to climate-related flooding](#), to [options for financing resilience](#) and more.

In partnership with trusted sources like MACo and MML, this project reached more than 12,000 local government elected officials and staff in Maryland (see Appendix C for full list of educational programming).

[New York](#)

In 2020 and 2021, the [Upper Susquehanna Coalition's](#) Watershed Wednesdays were a popular virtual alternative to the usual Upper Susquehanna River Watershed Forum. In September 2021, LGAC member and Otsego County Representative Danny Lapin gave a webinar in this series titled '[Chesapeake Bay Program for Local Governments](#)', which include information about *A Local Government Guide to the Chesapeake Bay*.

[Pennsylvania](#)

The [Pennsylvania State Association of Township Supervisors](#) (PSATS) annual conference is the largest local government conference in the Commonwealth and attracts nearly 4,000 attendees annually. Stormwater is an increasing challenge for many townships and conference workshops on the topic are a perennial favorite of attendees. For several years, LGAC members have facilitated in a panel titled, [Understanding Your Community's Stormwater Obligation](#), which covers the basics of stormwater for newly elected officials. In 2021, the panel utilized [Module 6](#):

[Protecting Your Infrastructure Through Stormwater Resiliency](#) as a summarizing handout for attendees.

The [County Commissioner's Association of Pennsylvania's](#) (CCAP) 2021 conference included a panel session on '[The Outdoor Recreation Economy](#)'. Facilitated by Sullivan County Commissioner Donna Iannone, an LGAC member, the panel drew connections between increasing demand for outdoor recreation during COVID, the economic opportunity to expand the outdoor recreation industry and the necessity of protection of natural lands to support this growth industry. The panel utilized [Module 5: Preserving Local Character and Landscapes](#) as a toolkit for folks looking to promote outdoor recreation. It was also listed as an elective course for CCAP's [Academy for Excellence in County Government](#) certificate training program.

The *Borough News*, is the [Pennsylvania State Association of Boroughs'](#) (PSAB) magazine; ten times per year a hard copy is mailed to each of the 956-member boroughs. The May 2021 issue included an article titled '[Borough Officials Seek Answers for Stormwater Management](#)' which features several local leaders and their work to address stormwater in their borough. Additional resources are highlighted at the end of the article and include the [Municipal Online Stormwater Training \(MOST\) Center](#) and [Module 6: Protecting Your Infrastructure Through Stormwater Resiliency](#).

Thanks to strong relationships with PSATS, PSAB and CCAP, this project engaged more than 1,100 local elected officials and staff in Pennsylvania (see Appendix C for full list of educational programming).

Virginia

In 2019, LGAC hosted a peer to peer learning exchange tour, titled [Wandering Virginia's Waterways](#). The tour included stops at the Potomac River Fisheries Commission to hear about fisheries management, Westmoreland State Park to see a living shoreline, a boat ride on the Rappahannock River and a tour of the Rappahannock Oyster Company. Attendees enjoyed learning about watershed issues in an experiential setting, while connecting with their peers about challenges and opportunities related to water resources. Participants completed a survey afterwards and rated the trip 4.8/5. One participant noted that the most valuable part of the tour was "gaining an understanding of how the actions in the west are impacting the waterways of the Bay". Another participant noted "we get wrapped up with regulations raining down on us from the state and federal governments. This tour puts a face on why it's important. What impressed me most were the presentations and the tours. They were informative, factual, and unrehearsed....I've been passing my experience on to anyone who will listen."

When *A Local Government Guide to the Chesapeake Bay* was launched in Spring 2021, partners at Virginia state agencies shared the materials with watershed roundtables, soil and conservation districts, planning district commissions and river basin commissions in the Commonwealth. Several of these groups connected with project partners for additional information on the modules. This led to a presentation at the [Rivanna River Basin Commission's annual conference](#) on the full suite of materials with a deep dive on [Module 6: Protecting Your Infrastructure Through Stormwater Resiliency](#).

To date, this project has engaged more than 2,000 local elected officials and staff in Virginia, primarily through partnerships with [Virginia Municipal League](#) (VML) and the [Virginia Association of Counties](#) (VACo) (see Appendix C for full list of educational programming).

West Virginia

The [Eastern Panhandle Regional Planning and Development Council](#), also known as Region 9, provides direct watershed-related technical assistance to local governments via a circuit rider. This staff member has a relationship with all 12 local governments in the region and is a trusted source of information. Through emails, webpage resources and speakers, Region 9 shared a video on [Urban Tree Canopy](#), highlighted funding and technical assistance available from the [National Fish and Wildlife Foundation's Chesapeake Bay Stewardship Fund](#) and more.

TASK 5: CHALLENGES AND LESSONS LEARNED

This project, which spanned from 2017 to 2021, faced several challenges. As described in Task 1 and 2: Evaluation and Approach, the first phase of this project encountered two major road blocks: the need for tailored content for local officials and the need to develop a clear and effective delivery mechanism.

The need for tailored content for local officials was addressed by the new *A Local Government Guide to the Chesapeake Bay*, launched in Spring 2021. Additionally, educational content appropriate for elected officials was identified during several LLWG meetings on key topics like tree canopy, diversity, equity, inclusion and justice (DEIJ), climate resilience and land use (see Appendix B). The lack of tailored content at the beginning of the project, led to significant changes in the project timeline (from a one-year project to a five-year project).

The need to develop a clear and effective delivery mechanism was addressed by the CBP Local Engagement Strategy, which was endorsed by the CBP Management

Board in May 2019. The strategy led to changes in the project methodology to a strong focus on engaging officials through trusted sources, like county associations and municipal leagues.

Another significant challenge was the COVID-19 global pandemic which began in March 2020 and continues through present. In-person events, like trusted source conferences and peer to peer learning exchanges, have been significantly curtailed during this time in order to protect public health. Like all aspects of the CBP's work, this project had to make several significant 'pivots' throughout the ups and downs of the pandemic. These pivots led to considerable changes to the project timeline (educational opportunities were postponed), scope of work (increasing emphasis on virtual) and budget (travel/conference budget repurposed to staff time).

In addition to these larger issues, there were several smaller logistical challenges, mostly related to sharing of identified content, including *A Local Government Guide to the Chesapeake Bay*. These materials are available on the [LLWG page as pdfs](#) and as [editable files via google drive](#), but some users cannot access google drive (which is blocked by some local governments) and files are too large for easy sharing via email. Users repeatedly asked for an easily accessible and curated repository of educational content. Future work should address this need.

These challenges provided a welcome opportunity for lessons learned, which included:

The importance of relationships with trusted sources. Strong relationships with county associations and municipal leagues continues to be a backbone of the work to increase the knowledge and capacity of local officials. Strategic investments in these relationships paid dividends, especially as the project 'pivoted' to virtual learning.

The value of a multi-pronged approach. Elected officials have different learning styles and ensuring that educational content is provide in a variety for formats (conference panel, magazine article, peer to peer exchange etc.) is essential. When the content across these different platforms is aligned (as in *A Local Government Guide to the Chesapeake Bay*), it reinforces key concepts and enhances learning, while also reaching a broader audience.

Peer to peer learning is still the gold standard. While the COVID-19 global pandemic encouraged project partners to explore new, virtual learning opportunities, in person peer to peer learning remains an invaluable tool for reaching local officials.

Based on these challenges and lessons learned, the project team identified potential future roadblocks in efforts to provide watershed education programming for elected officials:

- **Competing priorities:** local officials continue to face a broad spectrum of important and urgent issues that are constantly vying for their attention and resources. Watershed education programming must adapt over time to connect with these evolving priorities.
- **High turnover:** there is a constant stream of newly elected officials and watershed education efforts will need to be ongoing to address this need.
- **Funding and staff time:** watershed education for local officials is an important investment in the long-term health of the watershed, but finding funding to support the staff time required can be difficult.

OPPORTUNITIES AND NEXT STEPS

As this project wraps up and CBP partners look ahead to next steps for increasing the knowledge and capacity of local officials, here are some key future opportunities for content delivery:

Trusted source publications, like magazines, blog posts and podcasts. Now that strong relationships have been built with county associations and municipal leagues, they are increasingly interested in partnering on content for their publications. The reach of these magazines, blog posts, podcasts and more is unparalleled and estimated to have the potential of reaching 90% or more of local elected officials. Future efforts should prioritize this opportunity that requires limited effort and has maximum potential reach.

Annual peer to peer learning exchange tours. Although they are the most time and cost intensive, peer to peer learning tours are of high interest to local elected officials and therefore remain a top priority of trusted source partners. The reach of peer to peer efforts is inherently limited but this deep dive opportunity is most effective for creating local watershed champions. Project partners recommend establishing annual learning exchanges in high priority jurisdictions.

Continue engagement at in person conferences. Many elected officials continue to see their municipal league or county association's annual conference as essential to their continuing education. Therefore, ongoing engagement at these events through session proposals and panel discussions remains critical.

Seek out opportunities to engage on a county or regional level. State-wide conferences are usually well attended, but may be cost-prohibitive or too time consuming for some local officials. Regional meetings, like planning district commissions or county-level municipal associations, are one opportunity to engage with these folks. Future work should seek out these opportunities in strategic regions.

Plug into local elected official certification programs. Most county associations and municipal leagues have training for newly elected officials and/or a local government certification program. Tapping into these programs via 'elective courses' proved valuable during this project and there is a clear opportunity to expand these offerings in future years.

Another opportunity on the horizon is *A Local Government Guide to the Chesapeake Bay: Phase II*. A request for proposals will be released in early 2022 for this project and it is anticipated that a contract to be awarded in the first half of the year. The exact timeline is not yet finalized, but the hope is that the project will be completed by the end of 2023. This phase II will include three key components, all led by the contractor with input from the LLWG and LGAC:

- **The development of 3 – 4 additional educational modules.** During creation of the modules, a much larger list of topics was identified than were able to be completed under the original scope. Potential topics include, but are not limited to: environmental/public health, flooding, outdoor recreation, agriculture, education, stewardship, social science, natural filters etc.
- **The creation of an online repository** for educational materials and resources that are tailored to local officials. This project has identified a collection of key resources for local officials, including but not limited to *A Local Government guide to the Chesapeake Bay*. This project will create an easily accessible repository for housing these key resources, a need clearly expressed by project partners.
- **A train the trainer** for users of the modules and the online repository. By equipping key trusted sources to access, use and share the educational modules, CBP partners can maximize the impact and reach of these materials.

Of course, to pursue these opportunities and proposed next steps, additional staff time is needed. Appendix E has a draft job description for the ongoing delivery of watershed outreach education programming for local officials, including costs estimates.

CONCLUSION

The goal of this project, titled “*Implementation Support for Local Official Watershed Education and Capacity Building*” was to launch a watershed outreach education program for elected officials. Despite facing significant challenges, the project used adaptive management to remove roadblocks, build strong partnerships with local government trusted sources, directly engage more than 1,500 local elected officials in watershed education program and indirectly reach an additional 19,000 local leaders with educational content.

By successfully launching watershed educational programming for local elected officials in all seven jurisdictions, this project laid a strong foundation for future efforts. This significant investment in the knowledge and capacity of local officials will pay dividends in the form of local conservation actions that support the long-term health of the Chesapeake Bay Watershed.

REFERENCES

[A Local Government Guide to the Chesapeake Bay: Overview](#), 2021.

[Chesapeake Bay Agreement](#), 1987.

[Chesapeake Bay Program Local Engagement Strategy](#), 2019.

[Chesapeake Bay Watershed Agreement](#), 2014.

[Chesapeake Watershed Local Leadership Development Programs](#), 2015.

[Local Leadership Logic and Action Plan 2019 – 2021](#), 2019.

[Local Leadership Logic and Action Plan 2021 – 2023](#), 2021.

[Local Leadership Management Strategy](#), 2019.

[Strategic Outreach Education Program for Local Elected Officials in the Chesapeake Bay Watershed](#), 2017.

APPENDICES

Appendix A: Scope of Work

Appendix B: Key Educational Content

Appendix C: Content Delivered

Appendix D: Examples of Content Delivery

Appendix E: Draft Job Description for Ongoing Delivery of Watershed Education

APPENDIX A: SCOPE OF WORK

UPDATED Proposal for Scope #14: Implementation Support for Local Official Watershed Education and Capacity Building

Presented to

Chesapeake Bay Trust
60 West Street, Suite 405
Annapolis, MD 21401



Presented by

Alliance for the Chesapeake Bay
501 Sixth Street
Annapolis, MD 21403



A) Project Team

Alliance for the Chesapeake Bay

- Jennifer Starr, Director of Local Government Programs, 29 years of experience in environmental policy and water resources
- Laura Cattell Noll, Local Government Program Coordinator, 10 years of experience in watershed restoration and stewardship
- Ola Davis, Local Government Program Assistant, 4 years of administrative and logistics experience
- Patti Bohnsack, Administrative Assistant, Local Government Initiative, 20 years of experience in non-profit management including event planning and community outreach

B) Project Scope

The Alliance for the Chesapeake Bay (the Alliance) was awarded Goal Implementation Team (GIT) Funding in Fiscal Year 2016 (FY16) focused on ***Scope #14: Implementation Support for Local Official Watershed Education and Capacity Building***. This scope of work is in effect and was updated in Fall 2019 to reflect progress to date and changes to the project.

C) Proposed Scope of Work

Project Overview

The Alliance has developed the following proposal to launch a watershed outreach education program for elected officials, in accordance with the elements of the scope of work and required outcomes described in the Trust's Request for Proposals for Scope #14. Across the Chesapeake Bay Watershed there exists over 1,800 diverse local governments from seven jurisdictions whose municipal governments have unique functions and structures.

The Alliance is uniquely poised to conduct this effort because of our strong ties to stakeholders across the Watershed. With staff in Pennsylvania, Maryland, Virginia, West Virginia and Washington, D.C., we work in urban, suburban and rural settings across the Chesapeake Watershed. We are known for creating and delivering innovative and collaborative programs that help support local governments with their restoration efforts, and creating opportunities to educate and support our many partners in their environmental work.

The Alliance will begin to deliver existing educational materials to elected leaders via existing trusted sources, tailored to each of the seven jurisdictions. The Local Government Advisory Committee to the Chesapeake Executive Council (LGAC) will serve as advisors on this project, in order to provide direct feedback from a local government perspective. The Local Leadership Workgroup (LLWG) will assist with project implementation,

particularly with content delivery via trusted sources workshops, conferences, trainings, presentations, meetings and roundtables. Upon completion of this project, the Alliance will have launched strategic watershed outreach programming alongside trusted sources across the watershed targeted towards elected officials, delivered content in the form of at least one training or leadership program in each of the seven jurisdictions, and compiled a report summarizing the work completed during the project, highlighting key lessons learned and outlining recommendations for ensuring the ongoing delivery and expansion of watershed education to local officials.

Proposed Workplan

Task 1: Evaluate findings of the EcoLogix Group report to identify existing best practices for educating elected officials

As the first step in this project, the Alliance will review and evaluate the findings of the EcoLogix Group report to identify the existing educational strategies that will best serve the needs of specific groups of elected officials such as municipal mayors and administrators; municipal councils and other positions that are elected; county executives and administrators; and county councils and commissioners. To supplement the findings from this report, the Alliance will consult with the Local Leadership Workgroup, the Chesapeake Bay Program Communications Team, and the Communications Workgroup. This work will also be guided by surveys of local governments that identified specific needs and will inform the project approach developed for each jurisdiction.

Task 2: Develop the project approach

The Alliance will develop educational strategies based on task 1 and select an approach to implement at least one watershed education and training program in each of the seven jurisdictions. The Alliance will share the approach with the Local Leadership Workgroup at this step in the process to gauge the feasibility and effectiveness of the proposed approach and opportunities for scaling up implementation.

Deliverables:

- *Develop educational strategies and select an approach*
 - *CBP Local Engagement Strategy was approved by Management Board in May 2019 and by the Local Leadership Workgroup in July 2019*

Task 3: Launch strategic outreach education programming with trusted sources

To create a cohesive program, the Alliance will collect and assemble educational content and materials for the seven jurisdictions in accordance with recommendations contained in the EcoLogix Group report, in collaboration with Chesapeake Bay Program Goal Implementation Teams, and with input from LGAC members.

Concurrently, the Alliance will work with trusted sources in the seven jurisdictions to fit the content into existing programming/curriculums being planned by the trusted sources. In order to develop this strategy, the Alliance will reach out to representatives from the following trusted sources that represent the largest collection of communities within each jurisdiction, where relationships already exist:

- Maryland: Maryland Municipal League and Maryland Association of Counties
- Pennsylvania: Pennsylvania State Association of Boroughs and Pennsylvania State Association of Township Supervisors
- Virginia: Virginia Association of Counties and Virginia Municipal League
- West Virginia: Region 9 Eastern Panhandle Regional Planning & Development Council
- Delaware: Delaware Department of Natural Resources, University of Delaware Institute for Local Government Leaders and County Conservation Districts
- New York: New York Association of Regional Councils and the Upper Susquehanna Coalition

- District of Columbia: Advisory Neighborhood Commissions and Metro Washington Council of Governments

In addition to the above sources, the Alliance will work with regional and state entities whose reach may extend beyond those already captured in the traditional municipal organizations, such as the Young Elected Officials Network and Smart Growth Leaders Council, among others. Prior to reaching out to the trusted sources, the Alliance will get feedback on the overall framework from the LGAC to ensure that the educational content and trusted source(s) are appropriate for each jurisdiction. The LGAC will provide input on whether the educational content is relevant, usable, and easily understandable. The Alliance will employ adaptive management to modify the content based on the LGAC's feedback.

With the LGAC's input, the Alliance will finalize the educational content for each jurisdiction, reach out to the trusted sources, and thus begin the development of a strategic watershed outreach education program for elected officials. The Alliance will work with the trusted sources to adapt the educational content to existing programming and secure commitments to deliver content from at least one trusted source in each jurisdiction.

Deliverables:

- *List of existing programming/curriculums being planned by the trusted sources*
 - *Completed April 2019 and updated annually*
- *Collect and assemble existing educational content and materials*
 - *Completed by LLWG members and CBP Coordinators and Staffers with more than 300 potential resources*
 - *Tree Canopy resources vetted by LLWG in November 2019*

Task 4: Deliver educational content across the watershed

The Alliance will coordinate the delivery of content in partnership with the LLWG and trusted sources to identify appropriate venues/mechanisms for delivery of specific content, secure the commitment of trusted sources to help deliver content, and monitor delivery to help ensure the desired goal of increasing knowledge is achieved. The work will include integration in workshops and venues that are already established.

With the assistance of the LLWG and trusted sources, the Alliance will work on the following delivery mechanisms, and will modify the approach during the project as needed:

- *Website:* Transmit key pieces of information on the trusted source's website for educational purposes and information. The Alliance will work with the Chesapeake Bay Program to advertise appropriate educational events on its website.
- *Conferences:* Organize presentations to local officials through the trusted source's annual conferences and through supplementary local elected official meetings. This effort will be coordinated by bringing together the "knowledge bearers" from funding entities, from the State departments and from other municipalities to educate, inform and translate the effectiveness of specific local projects and practices that have been effective.
- *Presentations:* For those municipalities that do not attend the major conferences or attend elected official meetings, work with the trusted sources to schedule presentations and trainings at the local regional meetings that are held on an as needed basis. The technique of peer-to-peer might best serve for sessions at this level so that practical experiences and learnings can be transmitted to those attending.
- *Meetings and Roundtables:* Utilize regionally organized or watershed organized groups that by design have already involved local officials in the process. For example, the Healthy Waters Round Table on Maryland's Eastern Shore and the LGAC's elected official forums across the Chesapeake Bay.
- *News Publications:* The Alliance will garner the writing expertise of one or two environmental writers to disseminate via the web the outcome and information conveyed in the workshops, meetings and forums, in order to transmit key facts and information about the Bay Clean-up effort and reach a broader audience of elected officials.

- *Membership Organizations:* For existing organizations that are comprised partially of local officials as well as other interests, the Alliance will work with them to provide key information pieces that can be shared with their members.

Deliverables:

- *Deliver content from at least one trusted source in each jurisdiction. Recent examples of content delivery, include but are not limited to:*
 - *Website:*
 - *Tree Canopy Video* posted to Eastern Panhandle Regional Planning & Development Council's webpage
 - *Maryland Association of Counties* wrote *a blog post about a Forest Friendly Ordinances* webinar and encouraged members to attend
 - *Conferences/Presentations:*
 - *Building Community Resilience through Better Flood Response: Maryland Municipal League*, June 29, 2020
 - *Understanding Your Community's Stormwater Obligations: Pennsylvania State Association of Township Supervisors*, July 29, 2020
 - *Meetings and Roundtables:*
 - *September 2012 Local Government Advisory Committee Forum: Building Local Community Resilience Against Climate-Related Flooding*
 - *News Publications:*
 - *September 2020 Bay Journal Local Government Edition article* impact of COVID-19 and social unrest on Bay Restoration submitted by Ann Simonetti, Chair of LGAC
- *All content will be aligned with the Cross Outcome Watershed Educational Materials for Local Governments and will involve distribution of part or all of one or more modules. Distribution may include but is not limited to: using the modules as part of a panel, linking to key 'off-ramps' as part of digital communications, or sharing modules as handouts before or after a roundtable discussion.*

Task 5: Report findings from work

The Alliance will compile a report summarizing the work completed during the project, highlighting key lessons learned, and outlining recommendations for ensuring the ongoing delivery and expansion of watershed education to local officials. The final report will include:

- A list and description of the content acquired to date and the recommended means for delivery (mechanisms) of specific content;
- Details regarding all content delivered to date, including number of people reached;
- Any future delivery opportunities identified;
- A preliminary list of content that needs to be developed, noting who should be/is responsible for developing the content;
- The timeline for development of new content, etc.;
- Lessons learned to date; and
- A draft job description for ongoing delivery of watershed outreach education for local officials, including cost estimates.

Timeline

- Task 1: Completed 2017 - 2019
- Task 2: Completed 2017 - 2019
- Task 3: September 2019 – June 2021
- Task 4: January 2020 – December 2021
- Task 5: October 2021 – December 2021

D) Partner Qualifications

Alliance for the Chesapeake Bay

The Alliance for the Chesapeake Bay is a regional nonprofit organization that has focused on building partnerships, connecting people to the Bay, its rivers, and local watersheds, and healing the land and water through hands-on conservation for more than 40 years. The Alliance's Local Government Team Program Coordinator Laura Cattell Noll, will serve as Project Manager for this effort in consultation with the Alliance's Director of Local Government Programs, Jennifer Starr. Laura is the Coordinator of the Chesapeake Bay Program Local Leadership Workgroup. Ola Davis, Local Government Advisory Committee Program Assistant, will provide administrative support.

The Local Government Advisory Committee (LGAC) will serve as advisors on this project. The purpose of LGAC is to advise the Executive Council on how to effectively implement projects and engage the support of local governments to achieve the goals of the Bay Agreement. LGAC's mission is to share the views and insights of the local elected officials with state and federal decision-makers and to enhance the flow of information among local governments about the health and restoration of the Chesapeake Bay Watershed. LGAC members are affiliated with the trusted sources identified in task 3, and the existing relationships members have with sources and local government partners will make them excellent advisors in this effort.

The Local Leadership Workgroup (LLWG) will assist with implementation of the project outcomes. The workgroup is tasked with meeting the Local Leadership Outcome of the Chesapeake Bay Watershed Agreement, which is 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 workgroup is comprised of representatives from state governments, local governments, local government associations, technical assistance providers, funders and other key partner organizations.

The Alliance has demonstrated success working with local government officials throughout the watershed. Specifically, the Alliance has staffed the LGAC for more than ten years, coordinated educational programs for local elected officials and staff, represented local government interests on Chesapeake Bay Program Goal Implementation Teams and Workgroups, and assisted local governments directly with developing and implementing programs to protect and restore local waters. As a Bay-wide organization, the Alliance has developed strong partnerships with local governments, nonprofit organizations, state agencies, and the trusted sources in each jurisdiction, among other stakeholders. In all its efforts, the Alliance strives to work with its partners to simultaneously achieve local objectives, and lead, support, and inspire local action to restore and protect the Chesapeake Bay and its rivers.

E) Partner References

Alliance for the Chesapeake Bay

1. Jennifer Cotting, Director
Environmental Finance Center at the University of Maryland
(301) 405-5495
jcotting@umd.edu
2. James Wheeler, Chief Education Officer/Training Manager
Pennsylvania State Association of Township Supervisors
(717) 763-0930 ext. 128
jwheeler@psats.org
3. Gail Markovitz, Director of Training
Pennsylvania Municipal League
(717) 236-9469 ext. 253
GMarkovitz@pamunicipalleague.org

F) Project Budget

See the attached CBT Budget Form for a breakdown of all costs.

Project Costs

Total Project Cost	\$49,085.00
Total Personnel	\$32,759.75
Total Contractual	\$960.00
Total Travel	\$165.00
Total other (indirect)	\$15,200.25

APPENDIX B: KEY EDUCATIONAL CONTENT

Title	Source	Link to content	Identified as a key resource by:	Recommended delivery mechanism
A Local Government Guide - Module Overview	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/module_overview_(1)_2.pdf	LLWG/LGAC	Presentation, handbook
A Local Government Guide - Module Overview - Fact Sheet	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/module_overview_one_pager_(1).pdf	LLWG/LGAC	Handout
Benefits of Urban Trees	The Nature Conservancy	https://www.chesapeakebay.net/channel_files/39729/benefitsofurbantrees.pdf	LLWG	Web resource, handout
BRIC Grant Program	Federal Emergency Management Agency	https://www.fema.gov/sites/default/files/documents/fema_bric-infographic-fy21.PDF	LLWG	Handout, web resource
Building Alliances for Equitable Resilience	Federal Emergency Management Agency	https://www.fema.gov/sites/default/files/documents/fema_rnpr_building-alliances-for-equitable-resilience.pdf	LLWG	Handbook, web resource
Chesapeake Bay Climate Projections and Stormwater Vulnerabilities	Chesapeake Stormwater Network	https://chesapeakestormwater.net/wp-content/uploads/dlm_uploads/2021/09/C-1-Climate-Projections-and-Vulnerabilities-Fact-Sheet.pdf	LLWG	Handout, web resource
Chesapeake Bay Stewardship Fund Field Liaisons	National Fish and Wildlife Foundation	https://www.nfwf.org/sites/default/files/2020-02/cbsf-field-liaison-flyer-2020.pdf	LLWG	Handout
Chesapeake Healthy Watersheds Assessment	US Geological Survey	https://gis.chesapeakebay.net/healthywatersheds/assessment/	LLWG	Web resource, GIS resource
Chesapeake Stormwater Network	Chesapeake Stormwater Network	https://chesapeakestormwater.net/	LLWG	Web resource, newsletter
Conservation Land-Use Policy Toolkit	The National Center for Smart Growth Research and Education at the University of Maryland	https://www.chesapeakebay.net/channel_files/25323/chesapeake_land_use_policy_report_final_5-31-2017.pdf	LLWG	Handbook, web resource
EJScreen	Environmental Protection Agency	https://www.epa.gov/ejscreen	LLWG	Web resource, GIS resource
Federal Resources for Nature-Based Solutions to Climate Change	Environmental and Energy Study Institute	https://www.eesi.org/files/FactSheet_Nature-Based_Solutions_Funding.pdf	LLWG	Handout, web resource
Financing Urban Tree Canopy Programs: Guidebook for Local Governments in the Chesapeake Bay Watershed	University of Maryland's Environmental Finance Center and the Alliance for the Chesapeake Bay	https://www.chesapeakebay.net/channel_files/39729/financingurbantreecanopyprograms_lowres_040919.pdf	LLWG	Handbook, web resource
Making Your Community Forest-Friendly: A Worksheet for Review of Municipal Codes and Ordinances	Center for Watershed Protection	https://owl.cwp.org/mdocs-posts/making-your-community-forest-friendly-a-worksheet-for-review-of-municipal-codes-and-ordinances/	LLWG	Handbook, web resource
Module 1: How Your Watershed Works	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42983/module_1_-_how_your_watershed_works.pdf	LLWG/LGAC	Presentation, handbook
Module 1: How Your Watershed Works - Fact Sheet	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/how_your_watershed_works_fact_sheet.pdf	LLWG/LGAC	Handout
Module 2: Foundations of Clean Water	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42983/module_2_-_foundations_of_clean_water.pdf	LLWG/LGAC	Presentation, handbook
Module 2: Foundations of Clean Water - Fact Sheet	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/foundations_of_clean_water_fact_sheet.pdf	LLWG/LGAC	Handout
Module 3: Clean Water for the Economy	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42983/module_3_-_clean_water_for_the_economy.pdf	LLWG/LGAC	Presentation, handbook
Module 3: Clean Water for the Economy - Fact Sheet	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/clean_water_for_the_economy_fact_sheet.pdf	LLWG/LGAC	Handout

Title	Source	Link to content	Identified as a key resource by:	Recommended delivery mechanism
Module 4: Capitalizing on the Benefits of Trees	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42983/module_4_-_capitalizing_on_the_benefits_of_trees.pdf	LLWG/LGAC	Presentation, handbook
Module 4: Capitalizing on the Benefits of Trees - Fact Sheet	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/capitalizing_on_the_benefits_of_trees_fact_sheet.pdf	LLWG/LGAC	Handout
Module 5: Preserving Local Character and Landscapes	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42983/module_5_-_preserving_local_character_and_landscapes.pdf	LLWG/LGAC	Presentation, handbook
Module 5: Preserving Local Character and Landscapes - Fact Sheet	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/preserving_local_character_and_landscapes_fact_sheet.pdf	LLWG/LGAC	Handout
Module 6: Protecting Your Infrastructure Through Stormwater Resilience	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42983/module_6_-_protecting_your_infrastructure_through_stormwater_resiliency.pdf	LLWG/LGAC	Presentation, handbook
Module 6: Protecting Your Infrastructure Through Stormwater Resilience - Fact Sheet	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/protecting_your_infrastructure_through_stormwater_resiliency_fact_sheet.pdf	LLWG/LGAC	Handout
Module 7: Building the Workforce of Today and Tomorrow	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/building_the_workforce_of_today_and_tomorrow.pdf	LLWG/LGAC	Presentation, handbook
Module 7: Building the Workforce of Today and Tomorrow - Fact Sheet	Green Fin Studio	https://www.chesapeakebay.net/channel_files/42951/building_the_workforce_of_today_and_tomorrow_fact_sheet.pdf	LLWG/LGAC	Handout
Municipal Online Stormwater Training (MOST) Center	University of Maryland's Environmental Finance Center	https://mostcenter.umd.edu/	LLWG	Web resource, newsletter
Resilient Design Principles for Stormwater Management	Chesapeake Stormwater Network	https://chesapeakestormwater.net/wp-content/uploads/dlm_uploads/2021/09/C-2-Climate-Resilient-Stormwater-Design-Principles-Fact-Sheet.pdf	LLWG	Handout, web resource
The Regional Conservation Partnership Handbook	Highstead Foundation	https://highstead.net/wp-content/uploads/2020/07/RCP-Handbook.pdf	LLWG	Handbook, web resource
Urban Forest Benefits	Virginia Department of Forestry	https://www.youtube.com/watch?v=3FwD_I7QI6k	LLWG	Web resource, newsletter
Water Rising: Equitable Approaches to Urban Flooding	US Water Alliance	http://uswateralliance.org/sites/uswateralliance.org/files/publications/Final_USWA_Water%20Rising_0.pdf	LLWG	Handbook, web resource

APPENDIX C: CONTENT DELIVERED

Date	Jurisdiction	Trusted Source	Event Title	Category	Description/Event link	Approximate Number of People	Content Utilized	Supplemental Funding
1/2/2019	MD	Maryland Association of Counties (MACo)	We're Here to Help: Technical Assistance for the Bay TMDL and MS4 Permits	Conference	https://conduitstreet.mdcountries.org/2018/12/24/need-help-with-bay-tmdl-or-ms4-permits-check-out-macocon/	40		
4/10/2019	VA	Local Government Advisory Committee (LGAC)	Local Government Roundtables - Tappahannock	Meetings and Roundtables	https://www.chesapeakebay.net/channel_files/31051/va_sag_presentation_on_va_roundtables_2.pdf	18		*Virginia Environmental Endowment
4/15/2019	PA	Pennsylvania State Association of Township Supervisors (PSATS)	Understanding Your Community's Stormwater Obligation	Conference	https://www.eiseverywhere.com/ehome/339659/864458/	100	Municipal Online Stormwater Training (MOST) Center	
9/12/2019	All	LGAC	Local Government Forum - 2019	Meetings and Roundtables	https://www.chesapeakebay.net/channel_files/19528/2019_lg_forum_report.pdf	57		*National Fish and Wildlife Foundation
10/7/2019	VA	Virginia Municipal League (VML)	City Section - Chesapeake Bay Panel	Conference	https://vml.org/wp-content/uploads/pdf/19ConfProgram_Glance2.pdf	25		
10/24/2019	VA	VML, Virginia Association of Counties (VACo)	Wandering Virginia's Waterways	P2P	https://www.allianceforthebay.org/2019/11/the-local-government-advisory-committee-wanders-virginias-waterways/	32		*National Fish and Wildlife Foundation
12/5/2019	MD	MACO	2 for 1: Flood Prevention (and Clean Water, too!)	Conference	https://conduitstreet.mdcountries.org/2019/12/10/counties-get-creative-to-avoid-flooding-at-maco/	30		
12/6/2019	WV	Eastern Panhandle Regional Planning and Development Council (Region 9)	Tree Canopy Video on Website	Website	http://www.region9wv.com/chesapeake-bay.html	12	Urban Forest Benefits	
2/24/20	WV	Region 9	NFWF Field Liaison Presented about technical assistance and grant opportunities	Meetings and Roundtables	https://region9wv.com/home	23	NFWF Field Liaison Flyer	
5/6/2020	MD	MACo	Forest Friendly Ordinances Webinar	Membership Organizations	https://conduitstreet.mdcountries.org/2020/05/06/us-forest-service-to-host-webinar-on-local-tree-cover-policies/	10286*	Making Your Community Forest-Friendly: A Worksheet for Review of Municipal Codes and Ordinances	
5/8/2020	DC/MD/VA	Metropolitan Washington Council of Governments (MWCOG)	Chesapeake Bay Awareness Week	Membership Organizations	https://www.mwcog.org/file.aspx?&A=f8bSjK%2F%2fbmgxDKqBhtQSMcgROBWDd2TgM%2bboouo98gk%3d	33	CBP 2020 Chesapeake Bay Awareness Week Toolkit	

Date	Jurisdiction	Trusted Source	Event Title	Category	Description/Event link	Approximate Number of People	Content Utilized	Supplemental Funding
6/5/2020	VA	VML	Chesapeake Bay Awareness	Membership	https://www.vml.org/enews-june-5-	2000*	CBP 2020	
6/29/2020	MD	Maryland Municipal League (MML)	Building Community Resilience Through Better Flood Response	Conference	https://www.md-municipal.org/DocumentCenter/View/7457/Climate-Resilience-Presentation-2020?bidId=	100	Municipal Online Stormwater Training (MOST) Center	
7/29/2020	PA	PSATS	Understanding Your Community's Stormwater Obligation	Conference	https://learn.psats.org/products/understanding-your-communitys-stormwater-obligations-virtual-72920	30	Municipal Online Stormwater Training (MOST) Center	
9/10/2020	ALL	Bay Journal	Let's rise to the challenge of change	News Publications	https://www.bayjournal.com/opinion/forum/let-s-rise-to-the-challenge-of-change/article_9089d656-f20c-11ea-aef7-7fee37077ae5.html	1800*		
9/24/2020	All	LGAC	Local Government Forum - 2020	Meetings and Roundtables	https://www.chesapeakebay.net/channel_files/19528/2020_local_government_forum_report.pdf	74		*National Fish and Wildlife Foundation
10/9/2020	MD	MML	Advancing Race Equity - Environmental Justice Speaker	Conference	https://issuu.com/municipal_maryland/docs/mml_mag_jan-feb-2021_final_art_for_web	2000*		
12/1/2020	MD	MML/MACo	Seeking Stormwater Solutions	Meetings and Roundtables	https://www.allianceforthebay.org/2020/12/local-leaders-seek-stormwater-solutions/	6	Municipal Online Stormwater Training (MOST) Center	*Environmental Protection Agency LGAC/LLWG
12/1/2020	PA	Pennsylvania State Association of Boroughs (PSAB)	Seeking Stormwater Solutions	Meetings and Roundtables	https://www.allianceforthebay.org/2020/12/local-leaders-seek-stormwater-solutions/	5	Municipal Online Stormwater Training (MOST) Center	*Environmental Protection Agency LGAC/LLWG
12/1/2020	VA	VML, VACo	Seeking Stormwater Solutions	Meetings and Roundtables	https://www.allianceforthebay.org/2020/12/local-leaders-seek-stormwater-solutions/	4	Municipal Online Stormwater Training (MOST) Center	*Environmental Protection Agency LGAC/LLWG
4/29/2021	PA	PSATS	Understanding Your Community's Stormwater Obligation	Conference	https://learn.psats.org/products/understanding-your-communitys-stormwater-obligations-virtual-42921	21	Municipal Online Stormwater Training (MOST) Center	
5/1/2021	PA	PSAB	Borough Officials Seek Answers for Stormwater Management	Magazine Article	https://boroughs.org/ckfinder/userfiles/files/2021%20Index%20of%20Articles.pdf	956*	Module 6: Protecting Your Infrastructure Through Stormwater Resiliency	
5/3/2021	All	LGAC	Watershed Currents - modules shared	Membership Organizations	https://us6.campaign-archive.com/?u=f8c6c5815e1e73e0561b6f0f6&id=833a07948e	165	All modules	
5/21/2021	DC/MD/VA	MWCOG	Chesapeake Bay Awareness Week	Membership Organizations	https://www.mwcog.org/file.aspx?&A=0mmkpDQRr6%2b5nFZOby0Tu8NYi9ni4ZEVNueIfwCRCWk%3d	34	CBP 2021 Chesapeake Bay Awareness Week Toolkit	

Date	Jurisdiction	Trusted Source	Event Title	Category	Description/Event link	Approximate Number of People	Content Utilized	Supplemental Funding
5/21/2021	DC/MD/VA	MWCOG	Chesapeake Bay Water Resources and Policy Committee	Meetings and Roundtables	https://www.mwcog.org/events/2021/5/21/chesapeake-bay-and-water-resources-policy-committee/	34	All modules	
5/26/2021	PA	PSATS	Collaborating for Healthier Waters and a Strong Ag. Economy	Conference	https://learn.psats.org/products/collaborating-for-healthier-waters-and-a-stronger-ag-economy-virtual-52621	17		
6/3/2021	All	LGAC	Local Government Forum - 2021	Meetings and Roundtables	https://www.chesapeakebay.net/channel_files/19528/2021_local_government_forum_report_2.pdf	64		*National Fish and Wildlife Foundation
8/3/2021	PA	County Commissioners Association of Pennsylvania (CCAP)	The Outdoor Recreation Economy	Conferences	https://www.grupio.com/events_2/isetschedule2.php?scheduleDate=1627997400&event_id=12912&track=CCAP+Academy+for+Excellence+in+County+Government+Elective	40	Module 5: Preserving Local Character and Landscapes	
8/15/2021	PA	LGAC	Lancaster County Roundtable Breakfast	Meetings and Roundtables	https://www.allianceforthebay.org/2021/12/on-the-road-local-elected-officials-exchange-ideas-on-clean-water/	15	Module 1: How Your Watershed Works	*Campbell Foundation
8/20/2021	MD	MACo	Financing Resilience: New Tools in the Toolbox	Conferences	https://conduitstreet.mdcountries.org/2021/07/03/new-tools-in-the-toolbox-for-financing-resilience/	30		
9/14/2021	ALL	LGAC	Webinar on American Rescue Plan Act	Webinar	https://www.youtube.com/watch?v=YsYpx4c21U4&t=251s	436	Module 1: How Your Watershed Works	
9/24/2021	VA	Rivanna River Basin Commission (RRBC)	Rivanna River Basin Conference	Webinar	https://rivannariverbasin.org/wp-content/uploads/OFFICIAL-RRBC-9.24.21-Conf.-Agenda.pdf	12	Module 6: Protecting Your Infrastructure Through Stormwater Resiliency	
9/29/2021	NY	Upper Susquehanna Coalition (USC)	Chesapeake Bay Program for Local Governments	Webinar	http://www.uppersusquehanna.org/usc/watershed-wednesdays/	20	Module 1: How Your Watershed Works	
11/4/2021	MD	MML/MACo	How Your Watershed Works - Academy for Excellence in Local Governance	Webinar	http://www.mdmunicipal.org/ArchiveCenter/ViewFile/Item/645	19	Module 1: How Your Watershed Works	
12/8/2021	DE	Delaware Natural Resources and Environmental Control (DNREC)	How Your Watershed Works	Website	https://dnrec.alpha.delaware.gov/watershed-stewardship/nps/chesapeake/local-government-guide/	32	Module 1: How Your Watershed Works	
12/31/2021	MD	MML	Seeking Solutions for Addressing Stormwater-related Flooding Challenges	Magazine Article	https://www.mdmunicipal.org/ArchiveCenter/ViewFile/Item/651	2000*	Module 6: Protecting Your Infrastructure Through Stormwater Resiliency	
								*total reach of publication

APPENDIX D: EXAMPLES OF CONTENT DELIVERY

[New post] US Forest Service to Host Webinar on Local Tree Cover Policies

Conduit Street <donotreply@wordpress.com>
To: lnoill@allianceforthebay.org

Wed, May 6, 2020 at 7:11 PM

New post on **Conduit Street**



US Forest Service to Host Webinar on Local Tree Cover Policies

by [Alex Butler](#)

The USDA Forest Service will host a webinar to discuss the importance of local policies in the effort to halt tree cover loss.

The Forest Service will host a free webinar Wednesday, May 13, 2020 from 1:00 – 2:15pm entitled Addressing Loss of Tree Cover in Urban Watersheds: The Importance of Local Codes and Policies. Many State and local jurisdictions have recently been updating their forest conservation laws and targets to stymie the loss of tree cover. Join Karen Capiella from the Center for Watershed Protection and Lydia Scott from the Chicago Region Trees Initiative as they discuss successful strategies local jurisdictions can utilize to meet their tree cover goals.



To sign up and participate in the webinar visit the Forest Service's [announcement](#).

Alex Butler | May 6, 2020 at 7:11 pm | Categories: [Agriculture](#), [Environment](#), [NACo and Federal Issues](#) | URL: <https://wp.me/pGGCP-A42>

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<https://conduitstreet.mdcounties.org/2020/05/06/us-forest-service-to-host-webinar-on-local-tree-cover-policies/>

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eNews June 5, 2020



Friday, June 05, 2020 - 04:49pm

In this issue:

- [Virginia localities speak about the events of the past week](#)
- [VML Newly Elected Officials Conference to be held virtually in July](#)
- [Recent additions to VML COVID-19 Resources page](#)
- [Chesapeake Bay Awareness Week starts tomorrow](#)
- [Virginia Tech survey outlines food forestry opportunities and challenges in small towns](#)

Virginia localities speak about the events of the past week

- **U.S. Treasury Department – Coronavirus Relief Fund** guidance:
 - [Frequently Asked Questions](#)(Updated May 28)
 - [The CARES Act provides Assistance for State, Territorial, Local, and Tribal Governments](#) (website)

VML Contact: Rob Bullington, rbullington@vml.org.

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Chesapeake Bay Awareness Week starts tomorrow

The fifth annual Chesapeake Bay Awareness Week will take place June 6-14, 2020. While this week has been officially designated in Maryland, Pennsylvania and Virginia, organizations and localities will be celebrating rivers throughout the entire watershed to raise awareness about this valuable economic and environmental resource—a national treasure that directly connects over 18 million residents.

This year's theme highlights the many creeks, rivers, and streams that thread through the Chesapeake Bay region. These tributaries send fresh water into the Bay, offer vital habitat to aquatic plants and animals and provide people with public access points where they can fish, boat and swim.

There are nearly 1,800 local governments in the Bay watershed, including towns, cities, counties and townships, and much of the important work to protect and restore the Bay and its tributaries happens at the local level.

Typically, Chesapeake Bay Awareness Week is marked by a wide variety of events spanning the Bay's 64,000 square-mile watershed. This year's celebration will look a bit different, as watershed residents continue to socially distance as a result of the COVID-19 pandemic. Despite not being able to gather together, there are still plenty of ways to enjoy and celebrate the Chesapeake region.

For virtual events throughout the week, visit the Chesapeake Bay Program's [calendar](#).

For more information, [read the full press release here >](#).

VML Contact: Mitchell Smiley, msmiley@vml.org

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Virginia Tech survey outlines food forestry opportunities and challenges in small towns

Sixty-eight mayors of small municipalities (<25,000 residents) in Virginia recently used a survey created by the Virginia Tech Department of Forest Resources and Environmental Conservation to weigh in on the use of food-producing trees and shrubs in public spaces. Food forestry "intentionally integrates food-producing trees and shrubs in built environments to bolster community resilience."

The findings of that survey have now been [made available here >](#)

From the document:

"Ecosystems likely will be strained in coming decades as human population growth continues, thus heightening the need to strengthen local resilience. If the 68 Virginia mayors are a window into the world, then policies promoting food forestry systems in small towns are few and far between, but the potential exists if the right benefits are emphasized and the need transcends the scope and scale of any given project. In that regard, "local" may find greater space in a community's consciousness given our current circumstances, and food forestry could play an important role in the years to come."

Virginia Tech Contact: Sarah Coffey, secoffey@vt.edu

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Comments and questions about this website or the data provided may be addressed to Manuel Timbreza
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Borough Officials Seek Answers *for Stormwater Solutions*

By Laura Cattell Noll, Local Government Projects Manager &
Ola-Imani Davis, Local Government Projects Coordinator
Alliance for the Chesapeake Bay



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

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

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

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

To assist boroughs in addressing these challenges, the Alliance for the Chesapeake Bay, the University of Maryland’s Municipal Online Stormwater

Training (MOST) Center, and the Pennsylvania State Association of Boroughs created a series of stormwater training sessions for local governments entitled Seeking Stormwater Solutions: Getting the MOST for Local Leaders.

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

Oxford Borough, Chester County

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

Photo courtesy of Kathryn Cloyd, Oxford Borough.



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

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

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

continues on page 38...

FEATURE ARTICLE

continued from page 37...

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

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

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

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

Duncannon Borough, Perry County

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

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

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

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

Photo courtesy of Kathy Bauer, Duncannon Borough.



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

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

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

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

Resources:

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



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

Mechanicsburg Borough, Cumberland County

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

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

proven to be challenging.

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

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

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

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

continues on page 40...

FEATURE ARTICLE

continued from page 39...

Lemoyne Borough, Cumberland County

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

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



Photo courtesy of Kasha Griva, Lemoyne Borough.

Pictured is Lemoyne Borough's native plant rain gardens.

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

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


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

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

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



About the authors: *Laura Cattell Noll, is the local government projects manager and Ola-Imani Davis is the local government projects coordinator at the Alliance for the Chesapeake Bay.*

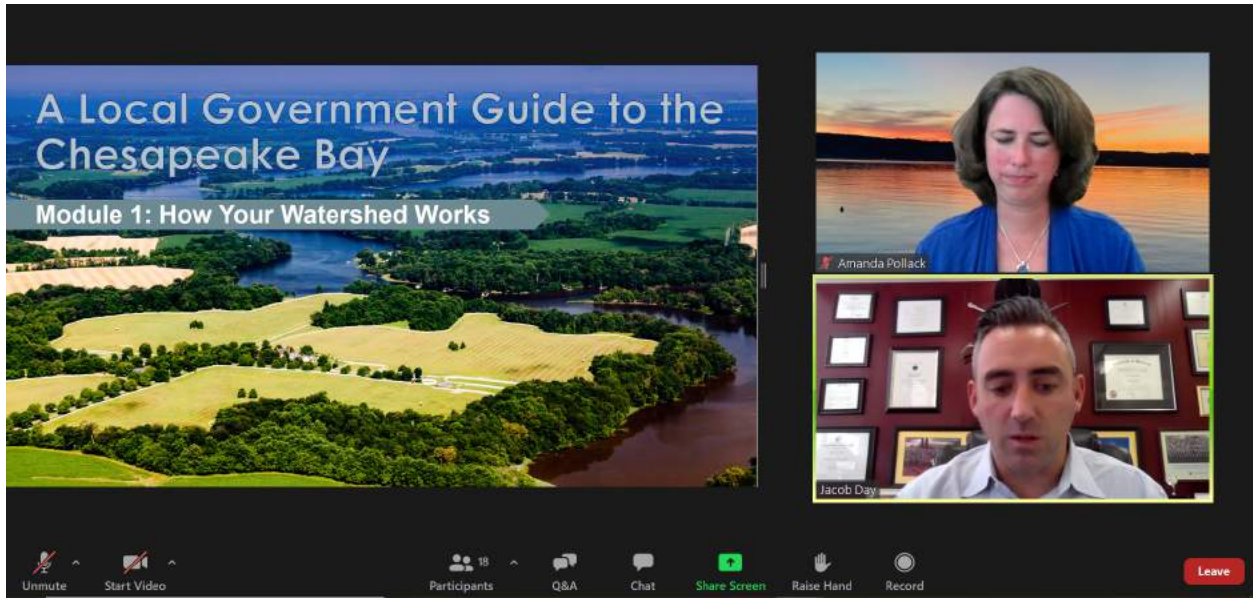
About the Alliance: *Since 1971, we've brought together communities, companies, and conservationists to improve our lands and waters and in 2021, we celebrate 50 years of fighting for the Chesapeake. We strive for clean streams and rivers flowing through resilient landscapes, cared for by the people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

ⁱ Pennsylvania Department of Environmental Protection, 2016 Report.

ⁱⁱ Lemoyne Borough Stormwater Presentation.

County Commissions Association of Pennsylvania Annual Conference panel session on 'The Outdoor Recreation Economy' from August 2021.

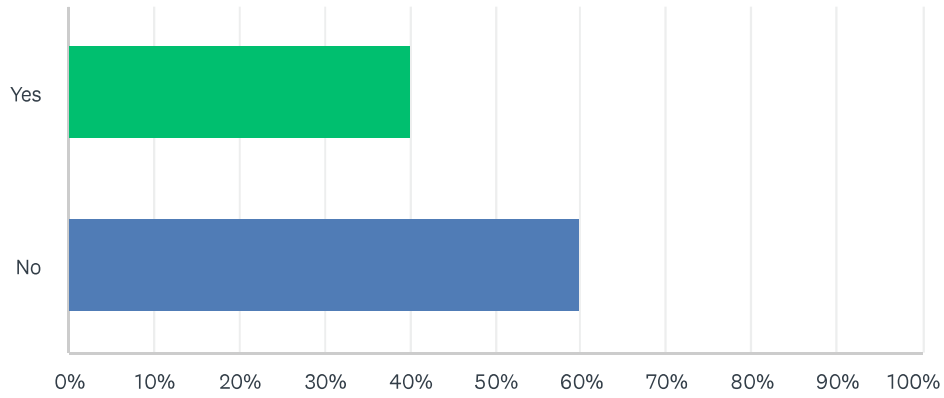




Maryland Municipal League and Maryland Association of Counties co-sponsored webinar on “How Your Watershed Works” from November 2021. The webinar was available as an elective credit in the [Academy for Excellence in Local Governance](#) program. The following pages include the results of the post-webinar survey.

Q2 If you are not currently an Academy Fellow or Graduate, would you be interested in receiving information about the certificate program?

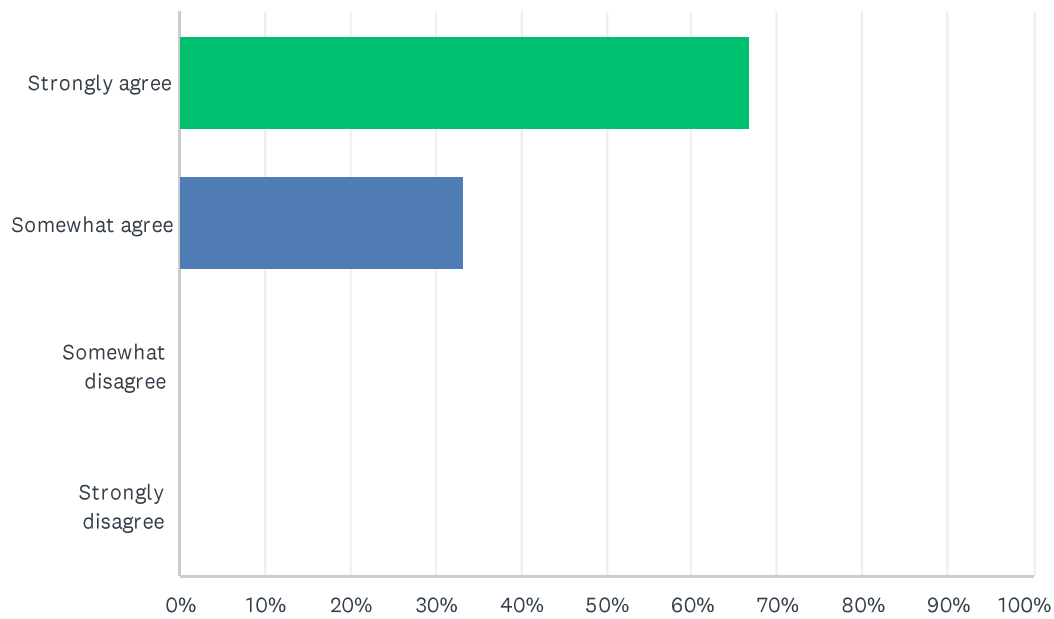
Answered: 5 Skipped: 4



ANSWER CHOICES	RESPONSES	
Yes	40.00%	2
No	60.00%	3
TOTAL		5

Q3 The topics covered met my expectations

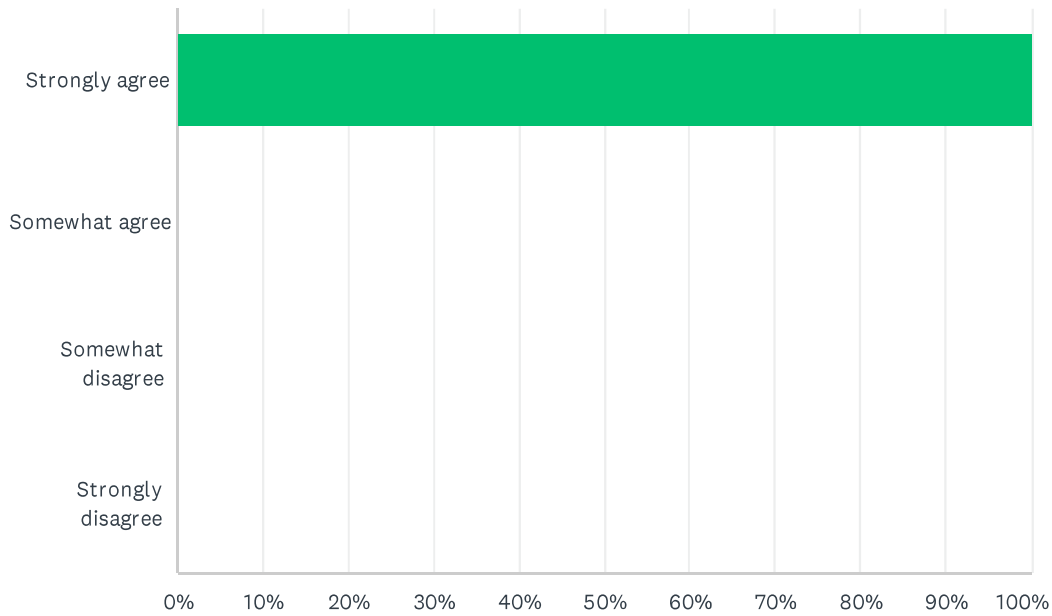
Answered: 9 Skipped: 0



ANSWER CHOICES	RESPONSES
Strongly agree	66.67% 6
Somewhat agree	33.33% 3
Somewhat disagree	0.00% 0
Strongly disagree	0.00% 0
TOTAL	9

Q4 There were sufficient opportunities for participant interaction.

Answered: 9 Skipped: 0

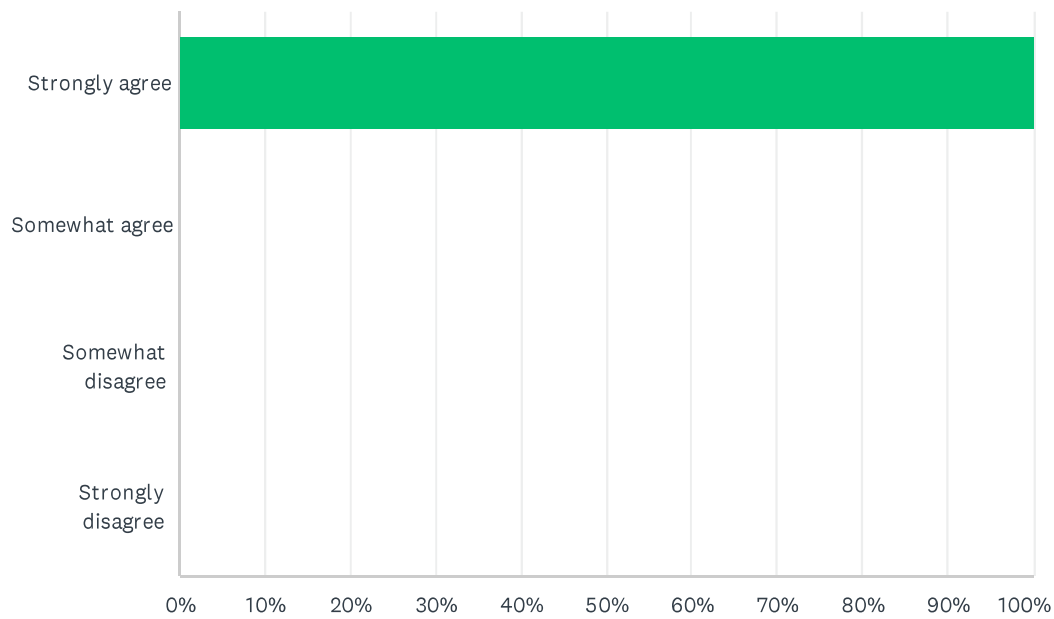


ANSWER CHOICES	RESPONSES
Strongly agree	100.00% 9
Somewhat agree	0.00% 0
Somewhat disagree	0.00% 0
Strongly disagree	0.00% 0
TOTAL	9

#	COMMENTS	DATE
	There are no responses.	

Q5 The instructors were knowledgeable and prepared.

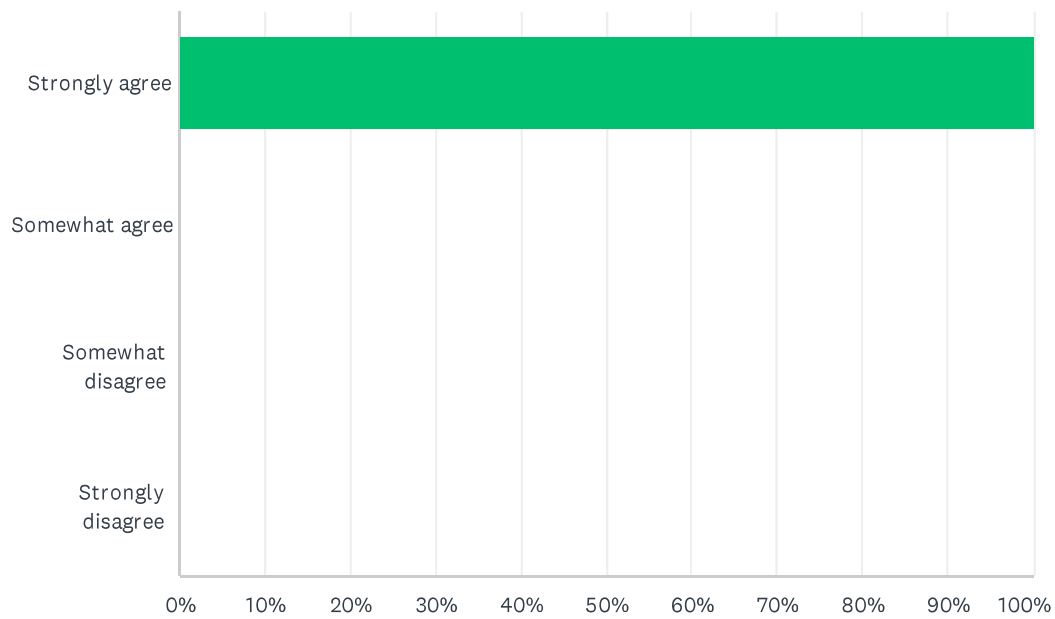
Answered: 9 Skipped: 0



ANSWER CHOICES	RESPONSES	
Strongly agree	100.00%	9
Somewhat agree	0.00%	0
Somewhat disagree	0.00%	0
Strongly disagree	0.00%	0
TOTAL		9

Q6 The instructors were responsive and effective.

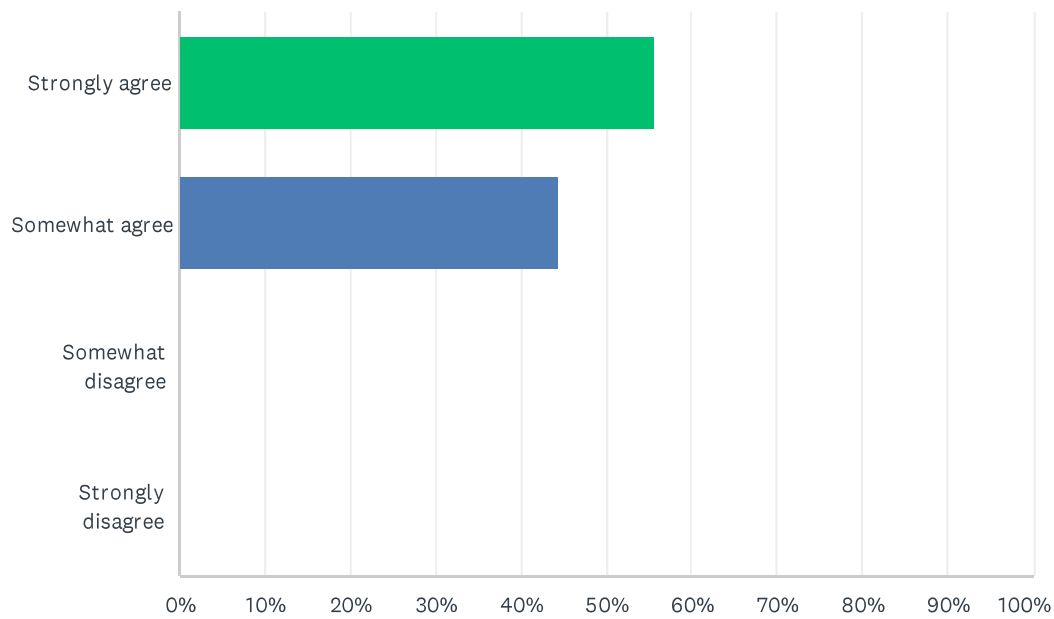
Answered: 9 Skipped: 0



ANSWER CHOICES	RESPONSES	
Strongly agree	100.00%	9
Somewhat agree	0.00%	0
Somewhat disagree	0.00%	0
Strongly disagree	0.00%	0
TOTAL		9

Q7 I can apply what I've learned to my work.

Answered: 9 Skipped: 0

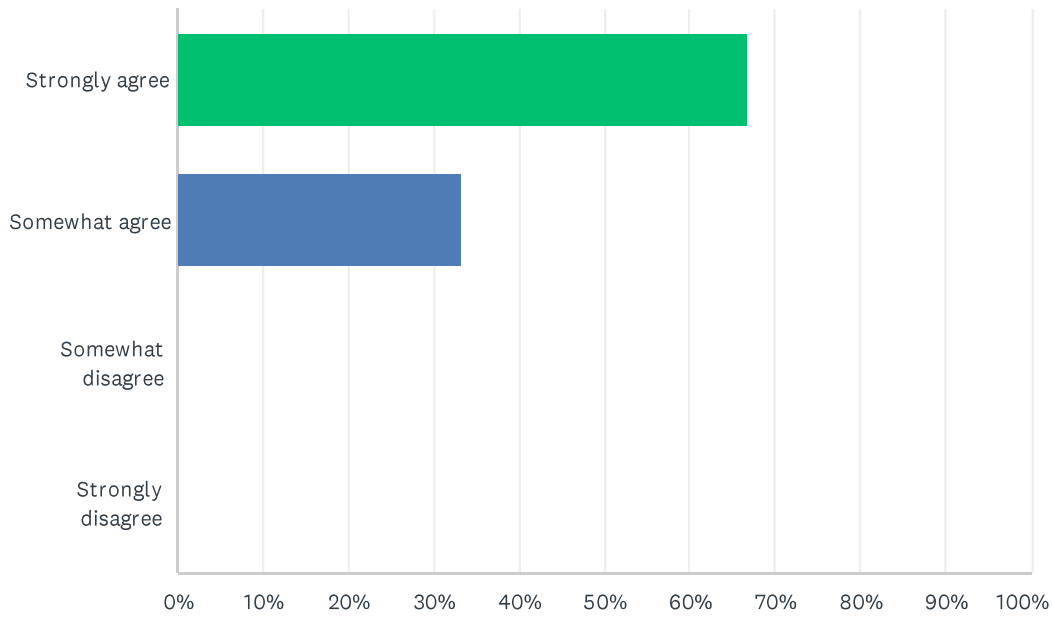


ANSWER CHOICES	RESPONSES
Strongly agree	55.56% 5
Somewhat agree	44.44% 4
Somewhat disagree	0.00% 0
Strongly disagree	0.00% 0
TOTAL	9

#	COMMENT	DATE
	There are no responses.	

Q8 I would recommend this class to others.

Answered: 9 Skipped: 0



ANSWER CHOICES	RESPONSES
Strongly agree	66.67% 6
Somewhat agree	33.33% 3
Somewhat disagree	0.00% 0
Strongly disagree	0.00% 0
TOTAL	9

#	COMMENT	DATE
	There are no responses.	

Q9 The most valuable information gained from the class was:

Answered: 6 Skipped: 3

#	RESPONSES	DATE
1	Scale of watersheds and means of improving watershed health at the local level.	11/4/2021 1:03 PM
2	Outreach opportunities	11/4/2021 12:54 PM
3	the discussion on impervious surface and sw runoff	11/4/2021 12:54 PM
4	Overview of the watershed	11/4/2021 12:53 PM
5	I had no idea our Chesapeake bay had water run off from New York! Scary!	11/4/2021 12:53 PM
6	Concrete examples of application of the principles in a specific community.	11/4/2021 12:45 PM

Q10 This class could be improved by:

Answered: 2 Skipped: 7

#	RESPONSES	DATE
1	N/A	11/4/2021 12:54 PM
2	longer and touch on critical areas law as well	11/4/2021 12:54 PM

Q11 Please share any additional comments.

Answered: 2 Skipped: 7

#	RESPONSES	DATE
1	N/A	11/4/2021 12:54 PM
2	well done for a lunch seminar	11/4/2021 12:54 PM



Delaware's Local Government Guide to the Chesapeake Bay

Module 1: How Your Watershed Works

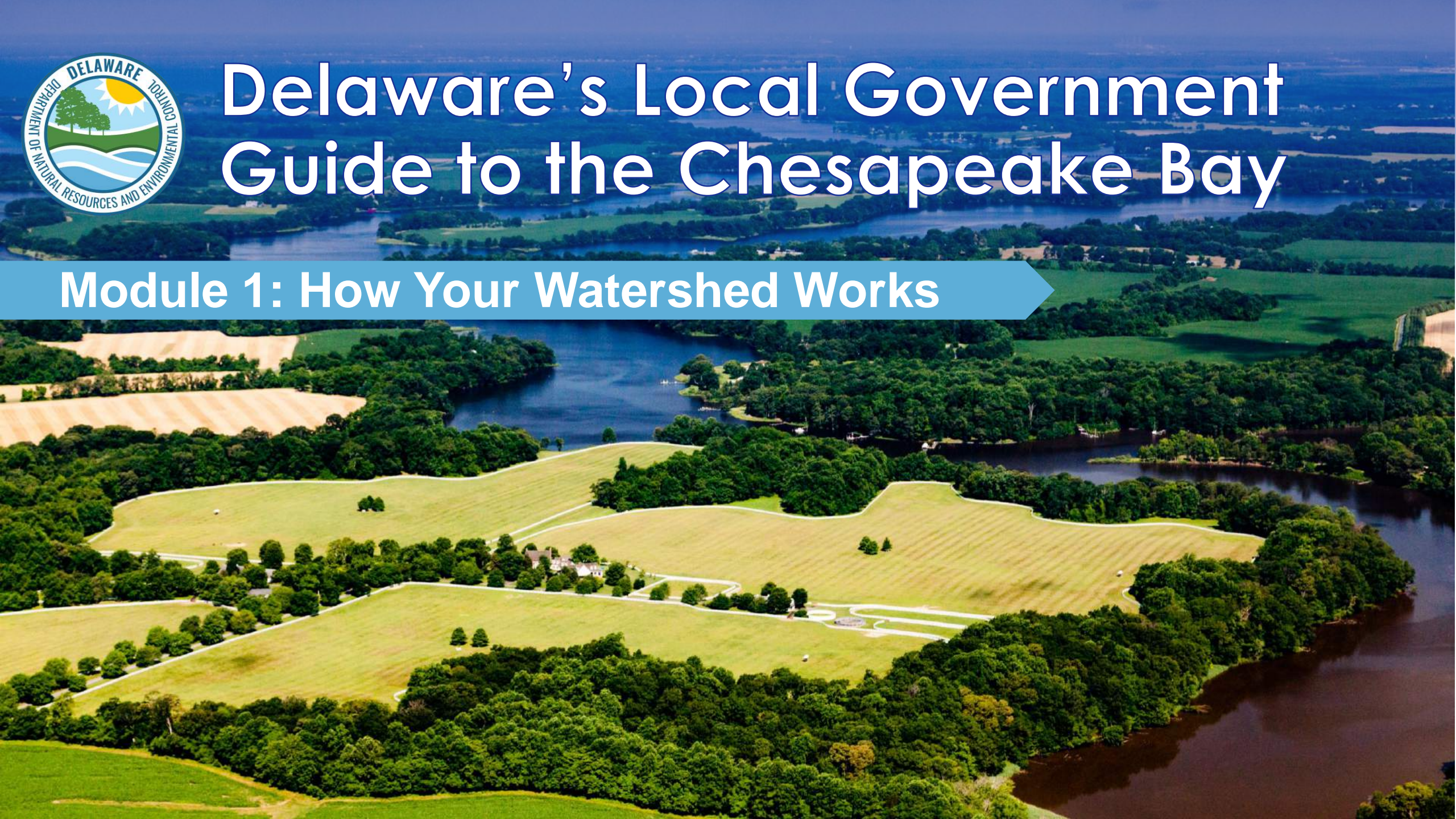


Table of Contents

- 1 Purpose
- 2 What You'll Learn
- 3 Chesapeake Bay Overview
- 4 Go with the Flow
- 5 Back to the Basics
- 6 Protect Your Watershed
- 7 What You Can Do
- 8 To Learn More
- 9 Glossary

***Please refer to individual slide notes for data references and information sources.**

Module 1: How Your Watershed Works



By David Haas

A Guide For Local Governments

As a local leader, your decisions set the course for your community. Your actions determine the health and vitality of your jurisdiction, as well as that of your local waterways and the Chesapeake Bay. You can achieve win-win outcomes by prioritizing local economic development, infrastructure resiliency, public health, and education while also protecting your environment.

This module is one in a series created by the Chesapeake Bay Program to support and inform decision making by local officials. We encourage you to examine the full suite of modules:

1. **How Your Watershed Works**
2. Foundations of Clean Water
3. Clean Water for the Economy
4. Capitalizing on the Benefits of Trees
5. Preserving Local Character and Landscapes
6. Protecting Your Infrastructure Through Stormwater Resiliency
7. Building the Workforce of Today *and* Tomorrow

To help local government representatives better understand how the information in the modules aligns with their priorities, look for these icons:



Economic Development



Public Health & Safety



Infrastructure Maintenance
& Finance



Education

What You'll Learn



How do my community's activities on land impact water quality?

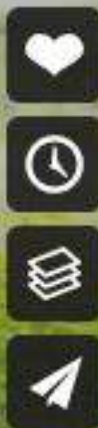


How do precipitation and water flow affect my community?



How do healthy local waterways benefit my community?

A LOCAL GOVERNMENT GUIDE TO THE CHESAPEAKE BAY



00:01



Chesapeake Bay Overview

This section will introduce you to a few important facts about the Chesapeake Bay and its watershed.

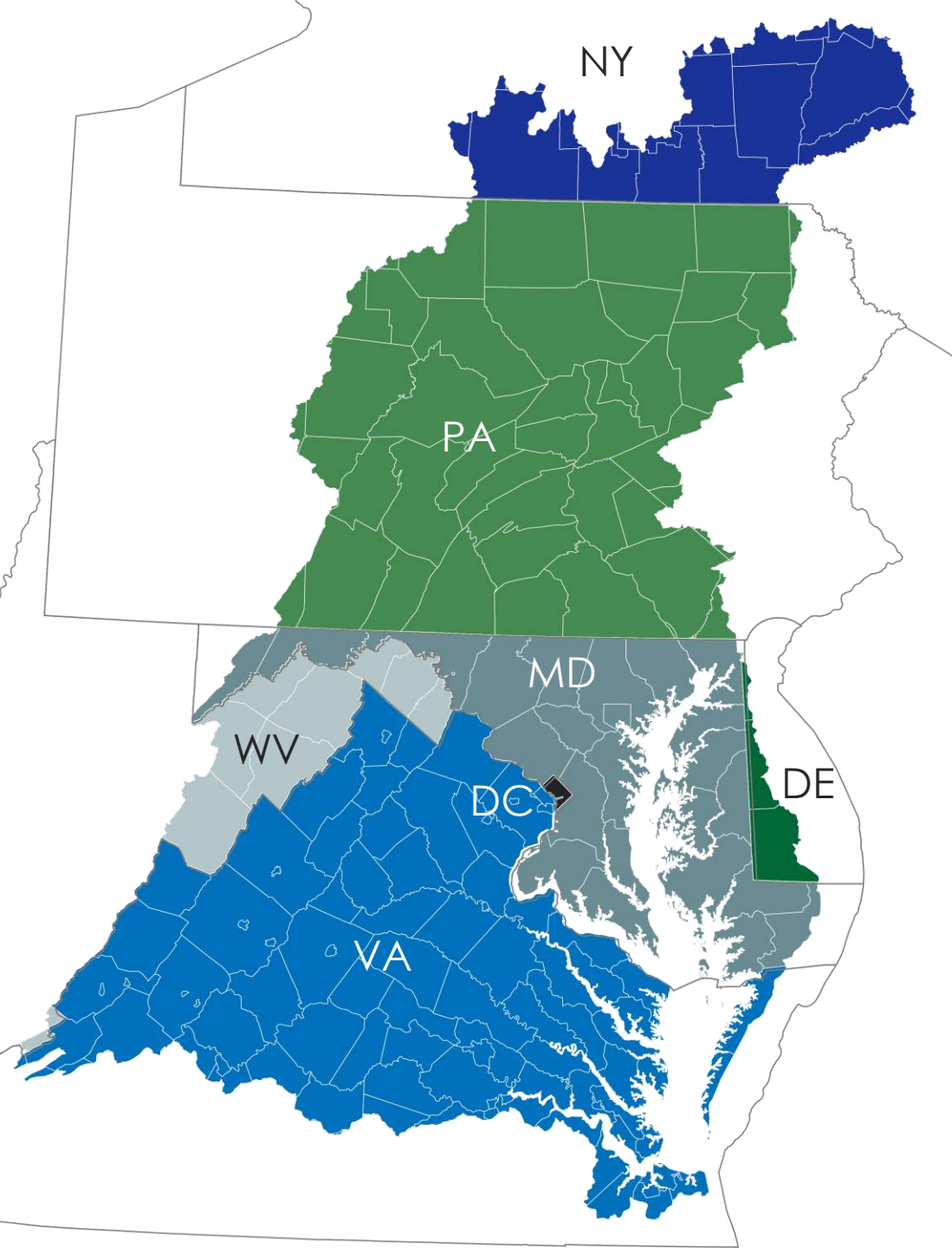


More Than the Bay

The Bay is more than just a body of water: it is a **watershed.**

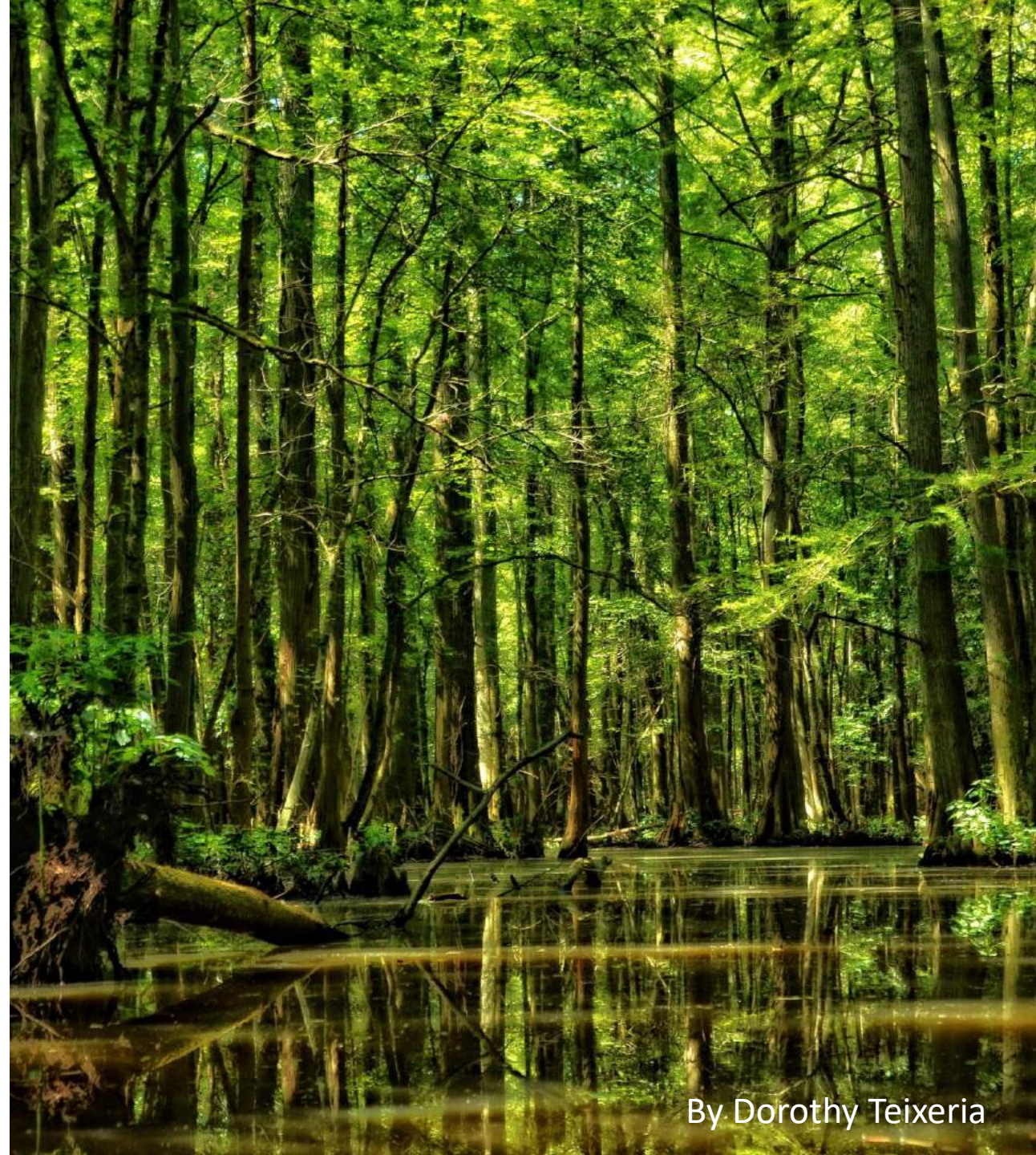
The **watershed** is all the land that drains into the Chesapeake Bay. It begins in Cooperstown, NY with the headwaters of the Susquehanna and stretches down to the mouth of the Bay. A drop of water falling anywhere in the watershed will eventually make its way from land to creek, creek to stream, stream to river, and river to the Chesapeake Bay.

The amount of precipitation that falls in the watershed and how that water is managed has major implications for the health of the whole watershed.



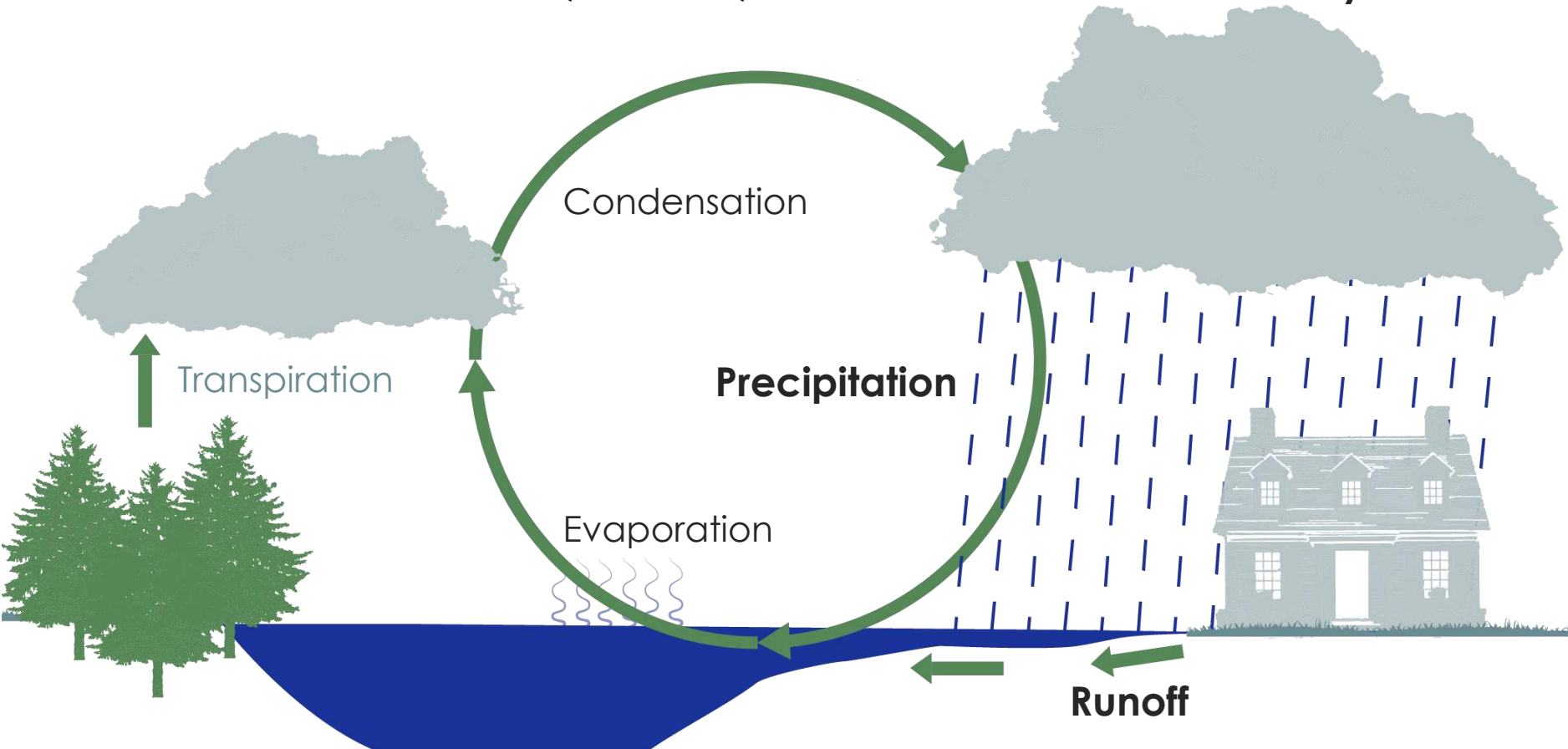
Go With the Flow

You can't really understand how the watershed works until you understand its water cycle.



The Water Cycle

Clean water is essential for people. How water moves, and what it brings with it, is at the heart of community and watershed health. Let's start the water cycle as water evaporates from land and water. The water vapor cools and forms clouds through condensation. **Precipitation then falls on land and drains into the creeks, streams, and rivers that flow into the Bay.**

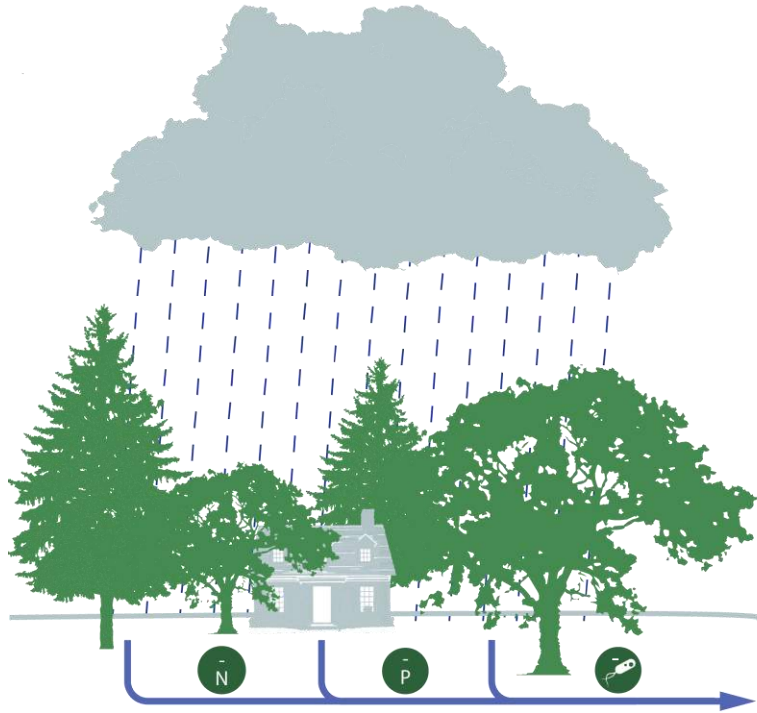


Climate Connection

Warmer air holds more moisture which means more intense and frequent precipitation events as the climate warms. Increased rainfall has the potential to overwhelm waterways and stormwater systems, increasing flood and erosion risks. Rising sea levels and storm surge also increase flood and erosion risks.

Precipitation and Land Use

Natural System



In areas with less development, precipitation is filtered through soil and plant roots before entering streams or local waterways.

Developed System

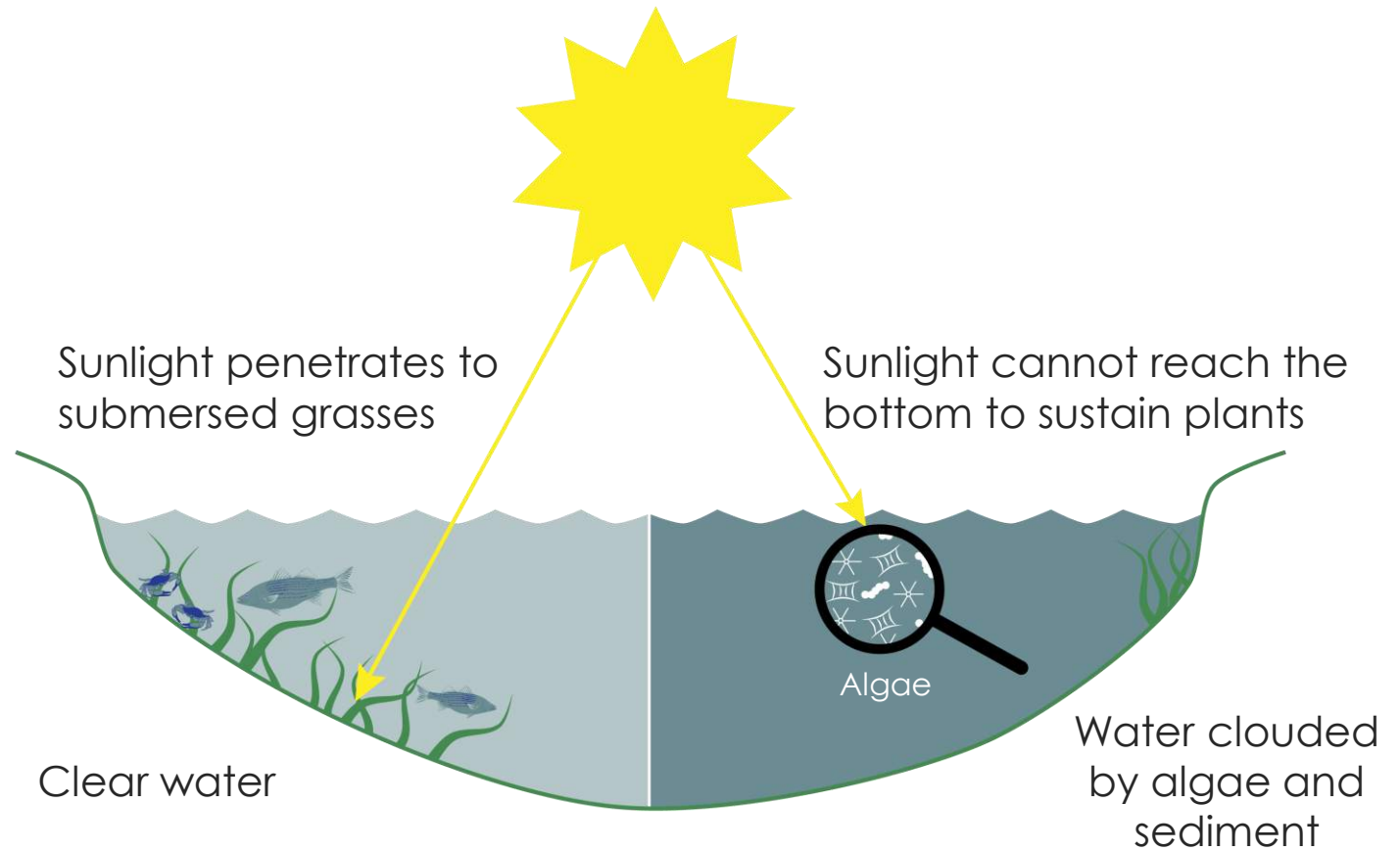


Impervious surfaces, like rooftops and parking lots, create stormwater **runoff** by preventing water from being absorbed. Farm fields, neighborhood lawns, and city streets add pollutants (including **N**itrogen and **P**hosphorus), sediment, and bacteria to local streams, rivers, and the Bay.

Disturbing the Balance

Natural and developed land need to be balanced. When there is too much development, excess nutrients (nitrogen and phosphorous) and sediment from runoff enter local waterways. The nutrients fuel the growth of **algae**; some types of **algae**, but not all, are a threat to public health and safety. When the sun is blocked by **algae** and sediment covers the grasses, they can't grow.

The Bay's underwater grasses are an important habitat for commercially important species like blue crabs.



Back to the Basics

The Bay is an estuary. Let's find out what that means and how the Bay is unique.



Back to the Basics

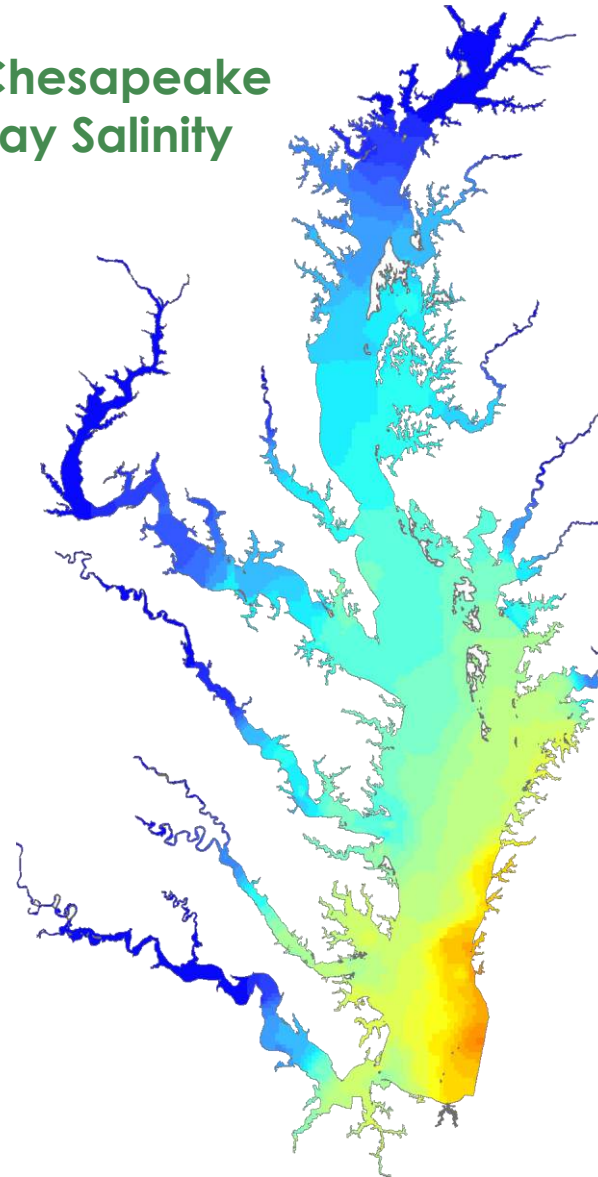
The Bay is an estuary.

An **estuary** is where freshwater from the rivers and saltwater from the ocean mix.

The saltiness of the water, or **salinity**, depends on your location; generally, **salinity** decreases as you move up the Bay and away from the ocean.

The **salinity** of an area determines which plants and animals can live there.

Chesapeake Bay Salinity

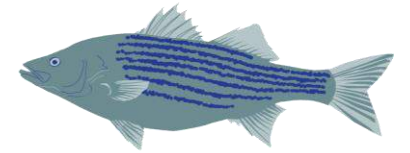


Freshwater

Saltwater



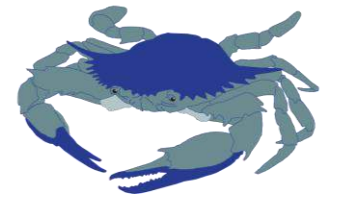
Fresh only



Fresh to somewhat salty



Salty to somewhat fresh



All salinities

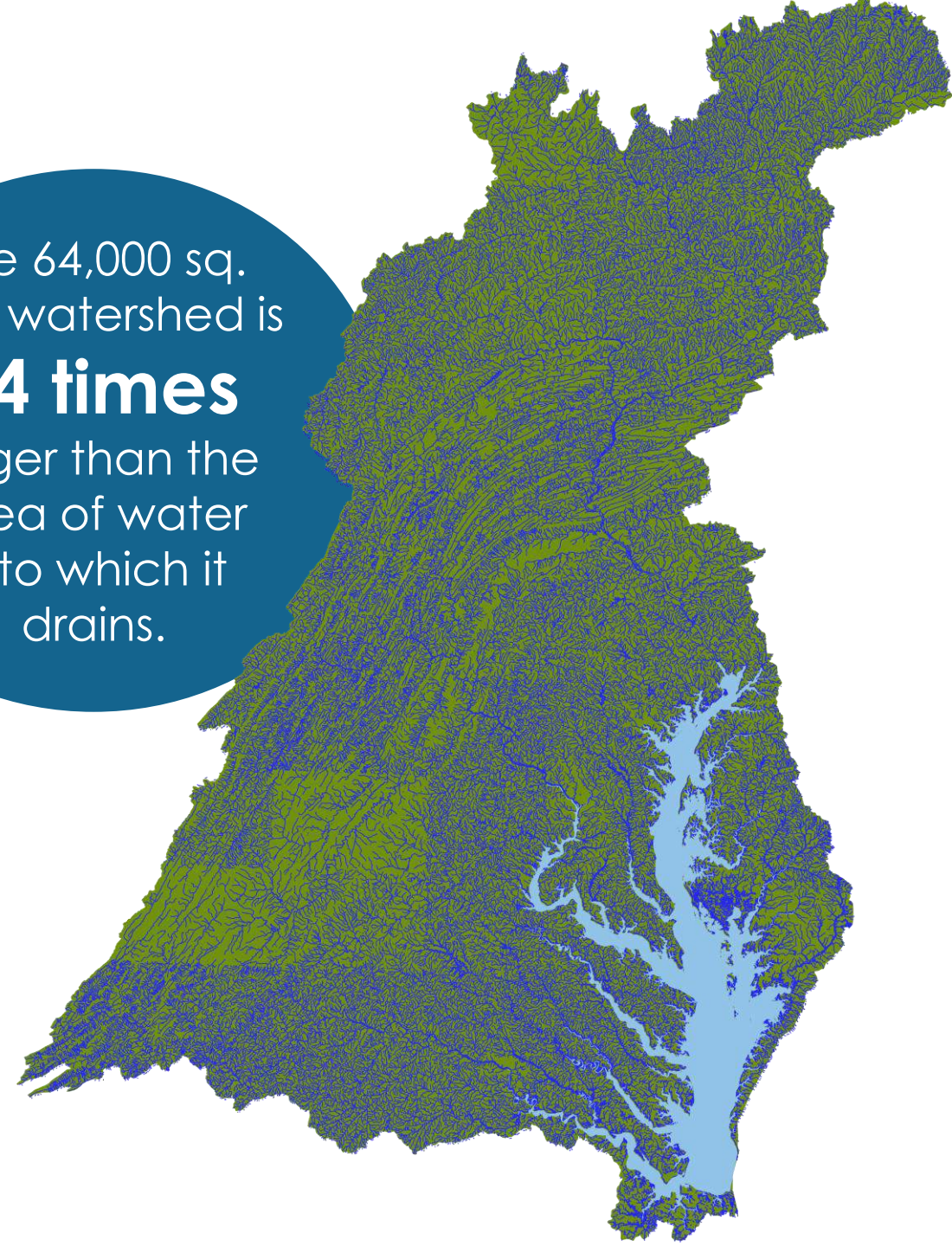
Back to the Basics

The Bay is unique.

What makes it special? The Bay is very shallow – **the average depth is only 21 feet.** This makes it important habitat for blue crabs, oysters, juvenile fish, underwater grasses, and waterfowl.

This also makes it very susceptible to pollution. Compared to other estuaries in the US, **it is very shallow** relative to the land area that drains into it. This means there is less water to handle the pollution that washes in from the land.

The 64,000 sq. mile watershed is **14 times** larger than the area of water into which it drains.



Bay 101

Local communities thrive when the watershed is healthy.



Protect Your Watershed

Clean water and a healthy watershed are critical to:



**Economic
Development**



**Public Health
& Safety**



**Infrastructure
Maintenance &
Finance**



Education

A healthy watershed attracts businesses, creates jobs, and provides safe drinking water and food for our families, which creates and supports thriving communities.

Economic Development: Benefits of Clean Water



The fisheries in the watershed are worth millions of dollars each year.



\$79.1
million



\$45.2
million



\$80.1
million

Recreational fishing by state:

	\$ spent while fishing	# jobs supported
NY	\$1.9 billion	20,030
PA	\$417 million	6,359
MD	\$491 million	5,085
DE	\$90 million	987
WV	\$344 million	4,840
VA	\$998 million	9,786



Clean water can raise the value of a nearby home by up to **25%**.

Access to clean water promotes:



purchase of fishing licenses



increased tourism



visits to local businesses



hunting revenue



local breweries



robust agriculture

Economic Development: Benefits of Trees



The trees of the Chesapeake Bay watershed provide



\$22 billion
in forestry products



\$24 billion

in ecological services (carbon removal, flood control, wildlife habitat, and recreation)

Case study: Pembroke Woods

Developers in Frederick County, MD saved over **\$360k** by leaving trees and wetlands undisturbed in a residential subdivision. The savings primarily came from storm water management benefits and reduced clearing/grubbing costs.



Customers spend **more time** & **11% more money** in well-treed areas.



Homes near natural forests earn **\$10k** in property premiums (more than homes near golf courses or specialty parks).



Well-placed trees can save

- **21-24%** in cooling costs
- up to **25%** in heating costs

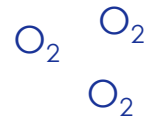
Public Health & Safety: Benefits of Trees



Trees reduce stress and are associated with multiple other community benefits:



reduced urban heat island effects: less heat-related illness and death



clean air and water: lower rates of asthma and cardiovascular disease



reduced crime: higher quality of life



more exercise: better cardiovascular health

Inequities in Public Health

Public health issues disproportionately affect communities of lower socioeconomic status and people of color. Through proper planning, green actions can make your entire community safer and healthier.



See Module 4 for more information about the benefits of trees



What is grey versus green infrastructure?

Grey stormwater infrastructure uses man-made technologies to capture, filter, and convey stormwater.

Green infrastructure uses systems that incorporate natural processes and technology inspired by nature.

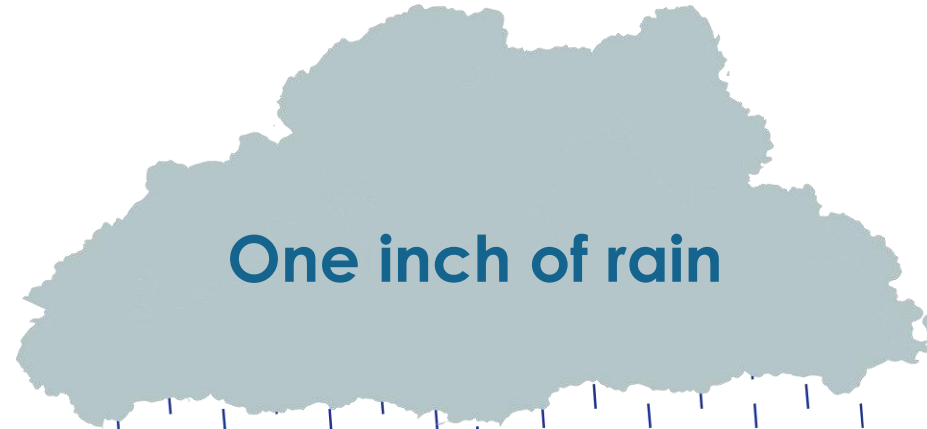
Because green infrastructure works with nature, it is often less costly, less disruptive to the environment, and better for your community's wellbeing. See Module 6 for more information about stormwater infrastructure.

Case study: Lancaster Green Infrastructure

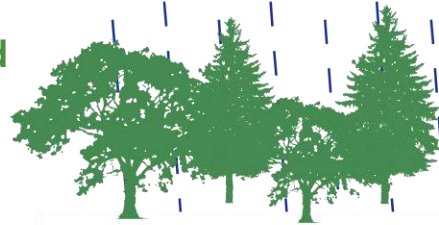


The City of Lancaster in Pennsylvania saved over **\$160 million** by pivoting from a grey stormwater control plan to a green plan.

The entire plan was less than half the cost of installing an underground storage tank for the stormwater, which would require an additional \$750k in treatment annually.



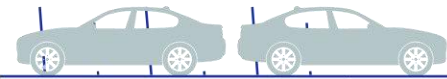
one acre
of forest or wetland



750
gallons
of runoff



one acre of
parking lot



27,000
gallons
of runoff



Even a typical street tree can intercept **760-3000 gallons** of water per year, depending on the species and age.

Runoff can flood neighborhoods, stress storm drainage systems and increase runoff into and the erosion of community creeks.



96% of parents support environmental education



85% want government agencies to support environmental education

40% \$ \$ \$ \$ \$
\$ \$ \$ \$ \$

of total direct general expenditures at the local level are invested in elementary and secondary education. That's more than any other single functional category.

To get the most out of this investment, consider schoolyard projects that teach future generations environmental stewardship and improve community health, including water quality, ecosystem health, and public health & safety.

Education is an indicator of current and future workforce condition and quality of life for employees, making good public education attractive for businesses and workers.

Case study: Camp Hill, PA



A new [aquaponics lab](#) in Cedar Cliff High School provides hands-on learning for students across the school district to develop skills in science, business and leadership as part of a workforce development strategy.

The lab was funded through a grant from the Pennsylvania Department of Labor & Industry for approximately \$250,000 which the District received in collaboration with the South Central Workforce Investment Board.

Case study: Richmond, VA



“Taking a School by Storm” is a schoolyard retrofit project at Binford Middle School. It reduces stormwater runoff using several methods, including a rain garden with a collaboratively-designed rain harvesting sculpture.

The project was funded with \$200,000 awarded by the by National Fish and Wildlife Foundation through the EPA’s Small Watershed Grants Program.

What You Can Do



Reduce impervious surfaces in your jurisdiction to reduce pollutants entering your local waterways. Use these EPA resources to get started:

- [The Green Infrastructure Municipal Handbook](#)
- [Enhancing Sustainable Communities With Green Infrastructure](#)
- [Local Water Policy Innovation: A Road Map for Community Based Stormwater Solutions](#)



Plant trees and preserve forested areas. Trees provide many community and ecosystem benefits.



Invest in environmental education and projects within your school systems to provide dividends in citizen stewardship, community health, and clean water protections.

- EPA provides \$2 to \$3.5 million in environmental education grant funding each year. [Learn more here.](#)



Lead your community to achieve environmental and local government goals by exploring technical and funding resources like grants from the [National Fish and Wildlife Foundation](#), [EPA](#), and your state.



Share this information with others to create an even stronger, more resilient community.

To Learn More

Delaware's Watershed Implementation Plan Information

- [Delaware WIP – Phase I](#)
- [Delaware WIP – Phase II](#)
- [Delaware WIP – Phase III](#)
- [Chesapeake Bay Implementation Grants](#)
- [Two-year Planning Milestones](#)
- [Events and Workshops](#)
- [Chesapeake Bay Projects](#)
- [Verification of Best Management Practices](#)
- [You Can Help Protect Delaware's Waterways](#)

To Learn More

[Visit the Delaware Department of Natural Resources and Environmental Control website](#)



- US EPA's [How's My Waterway](#)
 - Look up the condition of your local waterways and what challenges they face
- Video Series: Chesapeake Bay Program's [Bay 101](#)
 - Learn more about topics ranging from invasive insects to wastewater treatment in bite-sized video clips
- NOAA's [Chesapeake Bay Ecosystem Atlas](#)
 - Learn about the history and current dynamics of the system with this free, interactive iBook that includes in-depth classroom curricula for middle and high school teachers
- Alliance for the Chesapeake Bay's [RiverWise Communities Manual](#)
 - Motivate people to adopt and maintain environmentally friendly practices on their own properties and in their communities
- Stroud Water Research Center's [Model My Watershed](#)
 - Learn about how different conservation or development scenarios could modify your local runoff and water quality with an interactive modeling tool

Glossary

- [Watershed](#)- An area of land that drains into a particular river, lake or other body of water
- [Transpiration](#)- The release of water vapor from plant leaves
- [Runoff](#)- Precipitation that does not evaporate or soak into the ground but instead runs across the land and into the nearest waterway
- [Impervious Surfaces](#)- Paved or hardened surfaces that do not allow water to pass through (e.g., roads, rooftops, sidewalks, pools, patios, and parking lots)
- [Algae](#)- Simple aquatic plants that can be single-celled or grow in clumps or slimy mats
- [Estuary](#)- A partially enclosed body of water where fresh water from rivers and streams mixes with salt water from the ocean (also called bays, harbors, inlets, or sounds)
- [Salinity](#)- Amount of dissolved salt in water; the ocean has more salt, and therefore a higher salinity, than a river.
- [Grey Infrastructure](#)- The traditional, manmade structures that collect water before releasing it into rivers and streams, including pipes, reservoirs, and treatment plants
- [Green Infrastructure](#)- Nature-based solutions that use soil and vegetation to help slow the flow of runoff and manage rainwater where it falls
- [Aquaponics](#)- A combination of growing fish and plants in recirculating water



Seeking Solutions for Addressing Stormwater-related Flooding Challenges

BY OLA-IMANI DAVIS, LOCAL GOVERNMENT PROJECTS COORDINATOR, AND LAURA CATTELL NOLL, LOCAL GOVERNMENT PROJECTS MANAGER, ALLIANCE FOR THE CHESAPEAKE BAY

Proper management of stormwater is essential to ensure your communities' ability to mitigate flood impacts, maintain climate resilience, and protect public health. Accumulations of stormwater magnify flooding caused by sea-level rise and can carry harmful runoff or pollutants from impervious surfaces such as roads, sidewalks and rooftops to nearby waterways. In the long-term, communities without a plan for managing stormwater may see irreversible damage to properties or infrastructure, contamination of drinking water supply, stressed habitats and ecosystems, and missed economic development opportunities such as the ability to recreate in, on, or near water.

Many local and municipal governments have already begun to design and implement green stormwater infrastructure into their communities. However, with climate change, Maryland has seen an overall increase in rainfall and in powerful storm surges over the years. To best protect their communities, local elected officials are responsible for supporting current stormwater systems while identifying innovations in best management practices that will continue to support the unique needs of their communities into the future.

With the goal of connecting Maryland's local leaders with experts in stormwater, the [Alliance for the Chesapeake Bay](#) in partnership with the [Chesapeake Bay Program's Local Government Advisory Committee](#), [University of Maryland's Environmental Finance Center](#), and the [Maryland Municipal League](#) developed a series of blended learning workshops and networking opportunities for local governments entitled, [Seeking Stormwater Solutions: Getting the MOST for Local Leaders](#). Given their shared vulnerability to stormwater-related flooding, representatives from Maryland's coastal communities on either side of the [Chesapeake Bay](#) were invited to attend the educational sessions.

A series of virtual educational sessions was designed over the course of three months. The series helped local governments address their local stormwater needs by facilitating discussions around stormwater best management practices. Sessions offering opportunities to network with local communities who faced similar stormwater challenges as well as identifying technical resource providers to further assist with implementing these practices.

Following are some learning summaries about the challenges



A bioretention installation on Chestnut Street, St. Michaels, MD. Photo provided by Kimberly Kudha



A rain garden at Long Wharf Park captures and filters storm water pollution before it reaches the Choptank River in Cambridge, MD. Photo by Will Parson/Chesapeake Bay Program

and solutions to stormwater management from the municipal leaders who participated in these sessions.

TOWN OF ST. MICHAELS

Kymerly Kudla, Planning and Zoning Officer

St. Michaels, nestled between the Miles River and San Domingo Creek, is significantly impacted by stormwater-related flooding. According to Kymerly Kudla, Planning and Zoning Officer for the Town, local riverside businesses have struggled to maintain operation with regular flood disruptions by shuttling patrons to and from their parking lots and establishing multiple entrances to contend with flood surges. “With rising sea levels, increases in stormwater are elevating beyond just being a ‘nuisance,’ says Kudla.

To mitigate the impacts of flooding and runoff, St. Michaels has several initiatives including a stormwater ordinance that establishes the minimum requirements and procedures for runoff mitigation in projects affecting over 5,000 square feet of land. In addition, the town has installed submerged gravel wetlands and bioretention areas near impervious structures. St. Michaels was also awarded a grant from the Maryland Department of Natural Resources (DNR) to conduct a [harbor and stormwater infrastructure assessment](#) which identified areas of tidal flooding and the impacts to stormwater infrastructure, businesses, community assets, and residential properties now through 2050.

Reflecting on her experience with the *Seeking Stormwater Solutions* education sessions, Kudla said, “Objective one was to listen and learn from other municipalities who are faced with similar obstacles and how they have overcome those issues, and objective two was to learn of other opportunities for assistance on implementing stormwater solutions.” She has also connected with several technical assistance providers from the sessions who have helped build recommendations for additional stormwater projects in St. Michaels into the future.

CITY OF CAMBRIDGE

Brian Roche, Commissioner

The City of Cambridge experiences higher risks of stormwater-related flooding due to its location along the Choptank River and Cambridge Creek. During acute rainfalls or high tides, low elevation areas like Water Street or Great Marsh tend to flood significantly.

Commissioner Brian Roche reported that the city has continued multi-year efforts which include partnering with state and federal agencies and local nonprofits to address challenges around green infrastructure, saltwater intrusion, and sewer upgrades. “The most exciting aspect of stormwater solutions are that they allow us to transition back to a more natural and green infrastructure, beautifying and making our city more livable and enhancing our citizens’ quality of life now and into the future,” exclaimed Roche.

In September 2020, [Cambridge was awarded a grant](#) from the Federal Emergency Management Agency (FEMA) to address these critical flooding impacts due to sea-level rise and stormwater. This grant led to the establishment of the “[Cambridge Shoreline Resilience Plan](#)” which identified areas of high flood risk and developed strategies and design concepts to mitigate flooding occurrences and build long-term resilience. Potential strategies include progressive improvements to the city’s shorelines and implementing infrastructure that supports and protects recreational accessibility. The City is also reassessing inadequate or outdated stormwater management systems and promoting community and stakeholder outreach.

“A critical component of stormwater solutions is educating our city employees and residents to understand the need for and how to properly maintain these improvements,” states Commissioner Roche. As challenges around stormwater are always evolving and unique to each community’s environment, according to the Commissioner, the ability to participate in educational opportunities like the *Seeking Stormwater Solutions* workshops is needed.

ST. MARY'S COUNTY

Eric Colvin, Commissioner

St. Mary's County uniquely borders the Chesapeake Bay and two of its largest tributaries, the Potomac and Patuxent Rivers. Flooding is easily one of the County's largest stormwater threats.

"There are a variety of factors that have led to [flooding] including record rainfall last year and new development areas and runoff," explained County Commissioner Eric Colvin. "Many of these affected areas are historic flood zones along natural waterways, but the frequency and impact of the flooding has increased." For example, within the County, stormwater-related flooding from McIntosh Run, a winding river that feeds into Breton Bay before flowing into the Potomac, has led to substantial property damage to neighboring Leonardtown.

Although St. Mary's County does not have a stormwater program, it has taken multiple actions to ensure necessary monitoring and compliance occur. The County Public Works and Emergency Services Departments work closely in monitoring known areas of flooding, applying for grants, and identifying solutions to improve stormwater drainage systems and repairing culverts. The County has also begun revising its Comprehensive Plan to ensure that it maintains a realistic assessment of stormwater requirements now and into the future. "It is a lot cheaper and a lot easier, in the long run, to prevent stormwater issues before they happen



US Geological Survey Weather Gage installed on a bridge over McIntosh Run, St. Mary's County, MD. Photo provided by Eric Colvin.

than to fix them after they occur. Preventing mistakes now will pay dividends in the future," adds Colvin.

Commissioner Colvin also noted the importance of collaboration wherever possible, "It requires a lot of cross-department teamwork to implement any kind of fix, so the vision and mission needs to be shared with all involved." Stormwater-related flooding requires both towns and counties to partner with state agencies to work toward mitigation and prevention and further protect residents and local waterways. "The key is getting all of the stakeholders on the same page, rowing to the same beat and working toward the same goal," he continued.

Participating in the *Seeking Stormwater Solutions* sessions with an eagerness to learn more about stormwater issues and best practices, Commissioner Colvin emphasized his ability to learn from local leaders around Maryland who experienced similar challenges and from experts who can address these challenges. He was inspired by examples of innovative stormwater projects currently implemented by both.

Local officials understand that Maryland communities depend on clean water and that effective stormwater management is an important piece of that puzzle. As Commissioner Colvin mentioned, "Our history and heritage are tied to the water and we want to ensure that our local waters remain safe to swim, boat, fish, and crab in."

Additional Resources:

1. Municipal Online Stormwater Training (MOST) Center: mostcenter.umd.edu
2. A Local Government Guide to the Chesapeake Bay:
 - a) https://www.chesapeakebay.net/who/group/local_leadership_workgroup
 - b) https://www.chesapeakebay.net/channel_files/42983/module_6_-_protecting_your_infrastructure_through_stormwater_resiliency.pdf
3. Chesapeake Stormwater Network: chesapeakestormwater.net/bay-stormwater/ms4-portal

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/>

**APPENDIX E: DRAFT JOB DESCRIPTION FOR ONGOING DELIVERY OF
WATERSHED EDUCATION**

Job Description - DRAFT

Position: Project Coordinator

Job Description: Independently coordinates ongoing delivery of watershed outreach education for local officials, including but not limited to trusted source publication articles, peer to peer learning exchange tours, trusted source conference sessions, county or regional meetings/trainings, local elected official certification programs, trusted source webinars and more.

Specific Duties of the Position:

- Lead delivery of watershed educational programming for local elected officials in all seven watershed jurisdictions
- Coordinate trusted source publication (magazine, blog, podcast etc) articles highlighting watershed restoration best practices, local champions, resources and more
- Organize peer to peer learning exchange tours in close collaboration with trusted sources, the Local Government Advisory Committee and state agencies. Includes itinerary planning, logistics, attendee recruitment, follow-up and more.
- Coordinate the submission of trusted source conference panel proposals and the execution of accepted proposals
- Engage local officials at county or regional meetings via presentations and/or trainings
- Lead a watershed education component of local officials certification programs
- Coordinate trusted source webinars on watershed education topics

Minimum Qualifications & Experience:

- Bachelor's degree in environmental science, environmental studies, water quality, biology, communications, education, social science, public relations or a related field.
- 2+ years relevant professional experience (may substitute 1 year for advanced degree)
- Exceptional written and verbal interpersonal communication skills.
- Basic understanding of environmental issues related to local waterways and the Chesapeake Bay.
- Ability to work independently on multiple projects as well as part of a team.
- Quick learner, well-organized, possess strong attention to detail, and excellent time management skills.
- A valid driver's license with the ability to transport self around Chesapeake Bay Watershed for peer to peer tours, conferences, meetings and more.
- Software proficiency desired: Google Drive Suite, basic Microsoft Office; Zoom and other virtual meeting platforms.

Salary: \$45,000+, competitive benefits