

Delaware Riparian Forest Buffer Action Strategy 2022

Presented to the Chesapeake Bay Program

Department of Natural Resources and Environmental Control (DNREC)

Division of Watershed Stewardship

Conservation Programs Section

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Our Partners: Delaware Department of Agriculture (DDA) Forestry Service (DFS), USDA Natural Resources Conservation Service (NRCS), Delaware Urban and Community Forestry, USDA Farm Service Agency (FSA), US Fish & Wildlife Service (FWS), US Forest Service (USFS), Delaware Conservation Partnership and the States three county conservation districts in New Castle, Kent, and Sussex.

Background

The Chesapeake Bay watershed (CBWS) covers about one third of Delaware's land area, approximately 769 square miles, and includes half of Sussex County, a third of Kent County, and 10 percent of New Castle County. Some of the state's most prized waterways lie within the CBWS. This includes the Broad and Marshyhope Creeks; and the Nanticoke, Chester, and Choptank Rivers. Many of these watersheds are considered Most Effective Basins (MEBs). Nearly half of the land area is used for agriculture, primarily row crop production. About 10 percent of the land in the watershed is considered developed. Forests and wetlands make up another 37 percent. The rivers, streams, creeks, and wetlands are used for transportation, recreation, tourism, and commercial fishing. Delaware is relatively flat with widespread ditching.

The purpose of the Riparian Forest Buffer (RFB) Management Strategy for the CBWS is to identify how the partnership plans to restore 900 miles per year of RFB and conserve existing buffers until at least 70 percent of riparian areas in the watershed are forested (CBP 2015); however, this goal is not being met. This RFB Action Strategy outlines updated plans for Delaware to meet its RFB goals for the Chesapeake Bay watershed.

Delaware's Phase II Watershed Implementation Plan (WIP) goal was to increase its forest buffers acreage by 7,020 acres. By 2017 only nine percent, 623 acres of that goal, had been achieved and it was determined that the Phase II WIP goal was unrealistic. Limitations to the implementation of RFBs led to the reduction of the Phase II WIP RFB goal. The new Phase III WIP goal is 65 acres of forest buffers in addition to the 623 acres seen in 2017 progress across the three counties (DNREC 2019).

Barriers to Implementation

Three main barriers have led to the lack of RFB implementation to meet Chesapeake Bay WIP goals in Delaware and have led to the reevaluation of the RFB strategy – tax ditches, the Conservation Reserve Enhancement Program (CREP), and verification.

A unique feature of Delaware is the more than 2,000 miles of tax ditches. The ditches' purpose is to convey water. Therefore, they require routine maintenance to remove sediment. The tax ditches have permanent rights of way (ROW) for heavy equipment to maneuver and perform this maintenance. Delaware's original RFB strategy planned to install forest buffers in these ROW; however, it has since been found that much of the ROW surrounding the tax ditches cannot be planted with trees because they cause obstructions during maintenance.

In the previous strategy, a lack of consistent, secure state funding for CREP was listed as a major concern. Additionally, landowners find the application process for CREP to be rigid, complicated, and lengthy. RFBs are often unattractive to farmers and producers for a variety of reasons, including row crop shading and taking land out of production. As commodity prices increase it's difficult to entice landowners to plant trees. The length of contracts for these programs can also be an issue, with landowners considering whom will need to take over the maintenance of these practices in the future.

Due to lack of verification and access to United States Department of Agriculture (USDA) records and to database issues, the number of forest buffer acres has decreased in the CBWS portion of Delaware. Additionally, only the practice CP22 (RFB) within the CREP program is currently being credited as an RFB. However, it has been determined that practice CP3A (hardwood tree planting) also meets the

requirements to be credited as an RFB. Being able to account for the CP3A CREP installations would provide additional RFB acreage. Delaware's Department of Natural Resources and Environmental Control (DNREC) will work with USDA to determine if CP3A acres can be counted as RFB.

Desired Outcomes

Delaware's RFB goal continues to be the Phase III WIP goal of 65 acres in addition to the 623 existing RFB acres in 2017 Progress. Since 2017 Progress, 14 acres of RFB and 2 acres of urban forest buffers have been implemented. In the 2022-2023 milestone report, DNREC and DDA identified an RFB project of 24 acres in the Cypress Creek watershed. Ideally, an annual rate of 13 acres/year should be implemented to meet the Phase III WIP goal.

To support these implementation goals, Delaware will continue with current efforts and develop a new RFB strategy that focuses on the following actions:

- Implement a new state cost-share program,
- Provide training for staff on available programs and how to effectively communicate with landowners regarding the available programs,
- Provide funding and training for maintenance,
- Use a GIS desktop analysis to verify existing non-CREP RFB plantings that were not previously credited, and
- Support the Tree for Every Delawarean Initiative (TEDI) to reach its goal of planting one tree for every Delawarean resident.

Current Efforts

Delaware relies heavily on CREP for the installation of RFBs. The state provides a 20 percent match for CREP through the state budget and supports a CREP coordinator. There is no dedicated state funding source for non-CREP buffers. This means that there is currently no state cost share specifically for buffers. There have been some buffers installed that were not funded via USDA, but those opportunities have been limited. These non-CREP buffers have been implemented using the Section 319 Grant (319), Chesapeake Bay Implementation Grant (CBIG), and other federal funding sources.

RFB implementation can be targeted using several tools available to practitioners. The Delaware Forest Service (DFS) created a [Community Tree Canopy](#) online tool that makes it easy for communities to see their current canopy and areas that can be improved by planting trees. In addition to municipal tree canopy, the tool provides tree canopy information for homeowner associations, which make up much of the landscape in Delaware.

Delaware, the Environmental Protection Agency (EPA), and other state partners developed a [Watershed Resource Registry](#) (WRR). The WRR is a state-specific interactive online mapping tool that hosts a series of high-quality datasets to aid professionals in environmental planning and regulatory work. The WRR contains eight analyses to specifically target areas for preservation and restoration. Specifically, for RFB purposes, the Riparian Zone Preservation analysis scores areas near but not in streams that are contributing positively to stream health (i.e., areas that are heavily wooded, or have other woody vegetation near the stream that would prevent erosion) and should be preserved. The Riparian Zone Restoration analysis scores areas where wooded or vegetated strips could be recreated to improve stream health, prioritizing potential sites for restoration.

EPA's Chesapeake Bay Program Office (CBPO) conducted an analysis to determine the most effective basins (MEBs) to reduce the effects of excess nutrient loading to the Bay. They were determined by considering two factors: cost effectiveness and load effectiveness. Cost effectiveness was considered as a factor to assure additional funds, provided by the EPA, resulting in state-based implementation of practices that achieve the greatest benefit to water quality overall. It was evaluated by looking at what the jurisdictions have reported in their Phase III WIPs as the focus of their upcoming efforts, and by looking at the average cost per pound of reduction for best management practice (BMP) implementation by sector.

Additionally, the EPA developed an environmental justice (EJ) mapping and screening tool called [EJScreen](#). It is based on nationally consistent data and an approach that combines environmental and demographic indicators in maps and reports. In the most recent MEB analysis, data layers were identified for agricultural MEBs and underserved areas as identified by EJScreen.

CBPO has also developed a [Chesapeake Bay Environmental Justice and Equity Dashboard](#), which provides access to spatial data layers that are key to addressing environmental issues in areas with underrepresented populations. The Dashboard's Environmental Module includes a series of Bay Program Outcome-specific sections with commonly used planning datasets. The [Forest Buffer Outcome](#) includes 1-meter riparian land use data, WRR riparian restoration and preservation scores for all WRR states, percent people of color, percent low income, and percent in linguistic isolation. The [Tree Canopy Outcome](#) includes tree canopy by census block group, land cover, percent people of color, percent low income, and percent in linguistic isolation.

New State Buffer Cost Share Program

There is a desire for a program that can provide funding that is available on demand, funding that is sustainable, and a program that is simple to navigate and has no upfront cost for the installation/implementation of the practice. The idea of funding available "on-demand" exists with the Forest Stewardship Program/state cost-share program, but it does not have dedicated program funding. A new state cost share program could be developed to meet these desires, contingent upon funding. If developed, a new program would have a shorter lifespan than the current CREP contracts. Instead of a 10-year initial commitment the state program would be 5 years at the initial signing and would be renewable for an additional 5 years. No payments would be made after 10 years. It would also cover all the costs for implementation and installation, with maintenance provided as part of the program. The program would initially be piloted in the CBWS and eventually be made available for use statewide, should funding be available.

Developing a new state buffer cost share program would restore or create forest buffers that improve the quality of local waterways by working with landowners and local entities across the CBWS. Landowners in both urban and rural settings with abutting waterways, private ditches or wetlands would be able to apply to the program. A buffer installed on a private lawn or golf course will need to cover a minimum of 0.5 acres. Farmers and landowners who are responsible for the management of eligible lands would be eligible to apply. Applicants would need to agree to keep the areas in buffers for a minimum of 5 years, with a possible renewal for up to 10 years. The installation of the buffers will be covered at 100%. The incentive payment will be paid to the landowners for the first 5 years, made in a one-time incentive payment. Maintenance will also be provided through use of contracted landscapers. Trained landscapers or hired green infrastructure interns will verify that practices are still in place while

also keeping the practices maintained. Upon approval, funding for Delaware's Conservation Buffer Program will be provided by the EPA's Chesapeake Bay Implementation Grant or the Bipartisan Infrastructure Law/Infrastructure Investment and Jobs Act funding, depending on location. See Appendix A for further information on the state cost share program.

Outreach, Education and Technical Assistance Programming under Delaware's New RFB Strategy

Should a new statewide cost share program become available, this could renew interest in RFB implementation with landowners. It has been identified previously through outreach efforts that there is a need for trained staff who can relay buffer information with an understanding of landowners' goals, particularly farming practices. Staff will be trained on the program and address working with landowners on objectives for their land. Staff with the county conservation districts could be utilized for outreach and to promote the program as well as members of DDA Forestry Service, Master Naturalists/Gardeners, and the Nanticoke Watershed Alliance. All of these partners have strong ties to their communities and already have established relationships with the landowners. See Appendix B for further information on the outreach strategies for agricultural landowners, urban landowners, and municipalities.

Geographic Information System Mapping (GIS) will be used to assess areas for buffer promotion. GIS will be used to identify landowners along waterbodies in the CBWS for targeted promotional mailings. Mailings will be followed by calls or invitations to informational meetings. One of the best ways to promote a program is by word of mouth. Identifying one landowner could increase program participation among other landowners.

A new policy that could be used to accelerate tree plantings is Governor Carney's Tree for Every Delawarean Initiative (TEDI), which was launched in November 2021. TEDI is a partnership between DNREC and the DFS with the goal of planting at least one tree for every Delawarean. TEDI provides an opportunity for everyone to contribute to the statewide effort to improve air and water quality, preserve soil, and support wildlife. TEDI also directs some funding to partners throughout Delaware, with projects in both urban and rural areas.

Plan for Maintenance under Delaware's New RFB Strategy

The CREP program does not require any maintenance on the CREP practices CP3A and CP22 during the initial contract and only requires maintenance should the practice be re-enrolled. There is currently no funding available for maintenance costs through CREP and landowners have found that maintenance practices often require a specific skill set, knowledge, and ability. Finding reasonably priced skilled labor with the necessary equipment can also be a challenge.

Recognizing the need for maintenance, the DNREC plans to offset maintenance costs to landowners that enroll in the state RFB cost share. Private landscaping crews contracted through the state could be made available to help with maintenance while also acting as an inspection and verification resource. These crews would be available for both urban and agriculture RFB plantings. Additionally, green infrastructure interns could be hired and trained to assist with maintenance and verification. Landowners will be given the choice to perform maintenance work themselves and receive a cost share payment or have the landscaping crews perform the work instead. Agreements will need to be in place prior to the commencement of work so that the crews will have permission to access the lands.

Landowner assistance is also available through the DFS to develop forest management plans and for general assistance with forest management. Cost share is available to landowners' seeking assistance with tree plantings or timber stand improvement.

Measuring Implementation and Metric Tracking under Delaware's New RFB Strategy

Success can be measured using multiple tools or metrics. For example, the TEDI program has an online tracking service, [the TEDI tracker](#), which allows the user to see where trees have been planted anywhere within the state. When trees are planted, including rural and urban spaces, they can be added to the TEDI tracker using a desktop or mobile phone. Since 2020, TEDI has tracked the planting of over 100,000 trees statewide. The replanting of trees does not grow the number of RFB acres. Acres of RFB that are planted will be reported in annual progress reports by partners.

There is a large loss of RFB within the State due to inadequate verification. Land that was previously planted in CREP CP22 and CP3A that was not reenrolled is no longer accounted for. While the practice is no longer enrolled in CREP that doesn't mean that the practice is not still in place. Members of the DDA Forest Service are available to assist with verification on active contracts but must be given access to the locations of the current plantings that need to be verified. An effort to verify these plantings will need to be made as it could potentially be a source of significant RFB acreage.

Through a collaborative effort between the Chesapeake Bay Program, US Geological Survey, the Chesapeake Conservancy Conservation Innovation Center, and University of Vermont Spatial Analysis Lab, 1-meter resolution land cover datasets have been derived from aerial imagery (National Agriculture Imagery Program, NAIP), above-ground height information derived from LiDAR, and other ancillary data. This land cover represents surface characteristics such as impervious cover, tree, canopy, herbaceous, and barren areas. With the use of ancillary datasets and spatial rules this land cover information was further categorized into land use to better represent how we use and manage the land. High resolution land cover and land use/land cover datasets were developed for the CBWS for 2013/2014 and 2017/2018, providing detailed spatial data on conditions. With the completion of the 2017/2018 data, a change product was also developed which will more easily show where there have been gains and losses of land categories, including tree canopy and forests. These datasets will allow for more accurate geospatial analyses of RFB acres over time when on-the-ground verification may not be possible.

[Delaware's Quality Assurance Project and Verification Plan](#) ensures that all BMPs installed in Delaware's portion of the Chesapeake Bay Watershed are implemented correctly and are, in fact, effectively reducing nutrient and sediment pollution as expected. Should the state cost share program be instated, data will be reported to the National Environmental Information Exchange Network for annual progress. Additionally, trained maintenance crews will verify the practices installed and, in the future, potentially use a phone application for the collection of buffer data. This data could include photographs of the practice and GPS location. Appendix C provides details on BMP reporting.

Climate Change

Delaware's Phase III Chesapeake Bay WIP (DNREC 2019) presents a summary of existing documentation, technical support, funding support, and projects related to climate change in Delaware. The Phase III WIP also and intended to assist with accounting for changing conditions caused by climate change. Forest buffers are one of the BMPs identified in the Phase III WIP as providing a co-benefit for climate resiliency/adaptation. The co-benefits of riparian forest buffers, including that they are a cost-effective

water quality practice, is further described in [Forest Buffers: Principles for Phase III Watershed Implementation Plans](#).

Since the development of the Phase III WIP, Governor John Carney released [Delaware's Climate Action Plan](#) (DNREC 2021a). The main goals of the plan are to guide state efforts to reduce greenhouse gas emissions and maximize resilience to climate change impacts through prioritizing clean and efficient energy, providing support to state agencies in resilience efforts, and increased research and monitoring.

The Climate Action Plan was developed to support the state goal of reducing greenhouse gas emissions by 26 – 28% from 2005 levels by 2025. While much of the plan focuses on the direct reduction of greenhouse gasses, it does acknowledge that forests and other green spaces to offset carbon emissions through the ability of trees to absorb (or sequester) carbon dioxide from the atmosphere. The support of conservation and restoration of forest lands, such as forest buffers, is specifically mentioned in the plan as an implementation strategy to offset carbon emissions while also providing the co-benefit of nutrient reductions from runoff to protect water quality.

The Climate Action Plan lays out several strategies to meet the 2025 goal through the natural offsetting of greenhouse gas emissions in Delaware's natural and working lands such as forests, croplands, wetlands, and urban greenspaces. Three strategies in the plan specifically related to forests and forest buffers include the support of BMPs on agricultural lands that provide greenhouse gas reductions, protection of existing forests, and enhancement of urban green spaces. Each of these strategies is described below.

Strategy: Support BMPs on agricultural lands that provide greenhouse gas emissions co-benefits – This strategy supports BMPs on agricultural lands including the increased use of forest buffers adjacent to croplands. The goal is to reach a total of 1,000 acres by 2025 in the Inland Bays and Chesapeake Bay watersheds. Funding sources include the Natural Resources Conservation Service's (NRCS's) Environmental Quality Incentive Program (EQIP), the Farm Service Agency's (FSA's) Conservation Reserve Program (CRP) or the CREP, 319 funds from EPA Non-Point Source (NPS) Program, and Chesapeake Bay Program funding (DNREC 2021b).

Strategy: Support conservation and restoration of forest lands – This strategy includes goals that align with the Delaware Statewide Forest Strategy (DFS 2020). The goal is to permanently protect 2,500 acres of forest areas by 2028 and 1,000 acres of headwater forests by 2025, through conservation easements or fee simple acquisition. Conservation easement funding comes from the Forestland Preservation Program, Forest Legacy Program, Open Space, county, and nongovernmental funding sources. The Statewide Forest Strategy identifies high priority rural landscape areas at the HUC 12 level as well as urban priority landscape areas. Four of the 15 high priority urban areas are in the CBWS. Those municipalities are Georgetown, Seaford, Laurel, and Middletown.

Strategy: Support local communities' enhancement of urban greenspaces – The actions for this strategy include increasing urban tree planting throughout the state by 371 acres by 2025, establishing five miles of urban riparian buffers along impaired waterways and isolated wetlands by 2025, and planning and implementing Governor Carney's TEDI through coordination with state and local governments, homeowner associations, and nonprofit partners. Additional examples of funding for urban greenspaces include the [Delaware Urban and Community Forestry](#) Program, which provides financial and technical assistance to municipalities, community associations, nonprofit organizations,

and individual homeowners and the [Community Water Quality Improvement Grant](#) offered to non-profit organizations, conservation districts, community organizations and/or homeowner's associations.

Support Needed and the Role of State Leadership

State leadership in Delaware supports RFB implementation through several efforts including the Chesapeake Bay WIP, the Delaware Climate Action Plan, and the TEDI program. The goals of the Chesapeake Bay WIP and the Climate Action Plan align with each other and TEDI can also be leveraged to meet those goals.

To implement the new strategies and to further promote the current programs, dedicated funding sources specifically earmarked for tree plantings and forest buffers are needed. There is some funding available through TEDI but, with anticipated increases in participation, additional funding will be required. Additionally, financial assistance for maintenance of RFBs is extremely important. Currently much of the available funding is used for the implementation of RFBs. There is no funding for maintenance costs included in projects. To be sustainable, maintenance funding or cost share needs to be built into grant programs. Funding for training is also necessary for staff to learn about buffers, communicate with landowners adequately, and promote the state's programs. CREP is still the primary mechanism for buffer implementation in the state; however, it has been noted that the program needs an overhaul due to its lengthy process that is often too difficult for landowners to manage. The state's federal partners could work with USDA at the national level to simplify the process.

Support from local governments is needed to preserve and expand existing buffers. There has been success within the state at planting trees in public spaces through the TEDI program. Engagement by local governments is important in expanding the program's efforts, especially to include urban buffers.

Local Government Legislative Opportunities and Recommendations

Land use decisions in Delaware occur at the local level and any requirements for the implementation of riparian forest buffers must be made at that level. Local land use authorities are instrumental partners in buffer initiatives at the watershed and state scale if the RFB management practice is intended to be regulatory.

Some of the challenges to maintaining or establishing riparian buffers in the developed sector are often related to viewsheds, demarcation, and encroachment by property owners. Lot line placement and enforcement are critical. County Codes and ordinances related to buffers are important to assist in offsetting new and future growth within the CBWS and across the state. New Castle County's code has been established for quite some time and could be used as a model statewide to be adopted by other areas in the state.

New Castle County has established environmental and resource protection standards in Chapter 40 of the [New Castle County Code: Unified Development Code](#). Standards include requirements for riparian forest buffers and open space, as well as the protection of wetlands. The Code requires riparian buffers to be left in their natural state, or if newly established to be planted in accordance with planting plans "prepared jointly by a landscape architect in consultation with other professionals having a practical knowledge of riparian ecosystems (including wetlands specialists, wildlife biologists or ecologists from the U. S. Fish and Wildlife Service, DNREC, or the Natural Heritage Program). All planting plans shall

include a planting schedule that summarizes the quantity, type, size, and root condition of all plantings. State agencies conducting or supervising wetlands plantings are exempt from submitting plans” ([Section 40.10.125 and .126](#)). Riparian buffer management plans are also included in the overlay ordinance.

Kent County currently requires vegetative buffers within the Coastal Zone Overlay district within Kent County. Expansion of this requirement county-wide would be beneficial. According to the [Kent County Code Section 205-397.3](#) a vegetative buffer is defined as “a buffer which must be planted according to a landscape plan approved by the Planning Staff, Regional Planning Commission or the Kent County Levy Court. The use of fencing or an earthen berm in conjunction with this type of buffer is not permitted within the Coastal Zone Protection Overlay. This type of buffer must be designed by a landscape architect or certified nursery professional.” A one-hundred-foot vegetative buffer is required from the mean high-water line of any tidal or nontidal water body, stream, marsh, lake, pond, or blue line stream as depicted on the most recent version of the United States Geological Survey Topographic Quadrangle maps. For new plantings, a diversity of indigenous species shall be utilized with the intention of replicating natural ecosystems. Both canopy trees and understory vegetation are required. Areas within this one-hundred-foot vegetative buffer where trees or shrub buffer have not existed five years prior to any land use requiring Regional Planning Commission or Levy Court approval shall be maintained as a warm and cool season grass meadow buffer to comply with the performance standards adopted for this practice by the Delaware Field Office of the NRCS/USDA. Vegetation must be selected to minimize erosion, provide bank stability, and filter pollutants from runoff. Buffer areas are not allowed within lot lines and are managed as part of the community open space. Other types of buffers are also required which should be further evaluated for tree -related practices.

Sussex County recently passed a [new ordinance](#) related to buffers. The ordinance addresses all types of buffers, not only riparian forest buffers. The ordinance applies to new residential development only and does not impact commercial development. The benefit of this ordinance is the conversation around buffers. The ordinance will require perpetual easements for buffers and buffers will be part of open space, not contained in individual lots. Additionally, Sussex county has a [landscape/forested buffer strip requirement](#) for all major subdivisions constructed after 2008. This regulation requires a 20-foot-wide forested buffer surrounding a subdivision. This buffer must include a minimum of 15 trees for every hundred-foot length. Developers are required to ensure the trees survive for at least two years after planting and must replace any dead trees. After the two-year period maintenance becomes the responsibly of the Homeowners Association. Due to lack of personnel and training, verification of the survival of these buffers has not occurred. While not all these forested buffers are RFB, verification via GIS mapping can be used to identify those that are. After which, staff can perform site visits to account for them.

Future Actions

In addition to Delaware’s new RFB Strategy, which will be driven by the implementation of a new state cost-share program as described above, Delaware has also identified seven future actions to support the increased implementation of RFBs. These future actions include the review of existing riparian buffer-related ordinances and associated opportunities; continuing education on RFBs through existing CBP outreach materials and future workshops; a desktop analysis to identify existing RFBs and opportunities for new RFBs; the expansion of current incentive programs; promotion of the economic and environmental co-benefits of RFBs; train landscapers in Sussex County to support forest buffer

verification; and the development of a Riparian Forest Buffer Coordinating Committee to support the implementation of these future actions. Each of the seven future actions is described in greater detail below.

1. **RFB Coordinating Committee** – Develop a Riparian Forest Buffer Coordinating Committee to assist with focusing on the future actions outlined in the RFB strategy. The RFB Coordinating Committee will consist of approximately 10-15 members from partnering agencies/organizations including TEDI, Department of Forestry, Nanticoke Watershed Alliance, CREP, the conservation districts, and local government/municipalities. The goal is to have the committee meet every two months to evaluate the progress of the RFB strategy and the future action items, listed below, as well as provide guidance on the best ways to move forward.
2. **Incentive Programs** – The RFB Coordinating Committee will consider current incentive programs available through state and federal sources, evaluate how current programs can be expanded to homeowner’s associations and developers to install and/or enhance riparian forest buffers, and evaluate if/how revolving funds can be used at the municipal/developed sector level to implement, restore, enhance, or protect riparian buffers.
3. **Desktop Analysis** - Utilizing GIS, Delaware will conduct a desktop analysis of buffers to determine opportunities and impacts at the local level as well as assist in assessing existing established buffers meeting Chesapeake Bay definitions. DNREC will work with counties and municipalities to utilize existing subdivision layers, land use layers, etc. Once existing buffers are identified, staff will follow up with onsite verification. Support for this task will likely occur through CBIG funding, in 2023, using a contractor.
4. **Co-Benefits** - DNREC and DFS will work with municipalities to better understand the economic benefits of resource protection and valuation of natural assets, such as trees. Every dollar spent on forest buffers reduces the need for costlier urban practices and less effective agricultural practices. Further consideration will need to be given to developing policies and/or opportunities to take advantage of other co-benefits of trees/buffers, such as climate markets, and MS4 compliance.
5. **Ordinance Review** - Coordinate with local planning managers/directors/staff to determine the full extent of current riparian buffer related ordinances and standards within the watershed. In 2012, DNREC reviewed local ordinances in eight towns and two counties in the Chesapeake Bay watershed and provided model ordinance language to address barriers to implementing BMPs in the watershed; however, additional guidance and/or updated guidance on riparian buffers may be beneficial. Attention and details should also be provided regarding additional climate benefits, how buffers and/or trees will address permitting issues such as MS4s, and the value of buffers as natural capital assets. Funding for the ordinance review will be through the CBIG and private contractors can help to establish and verify buffers. See Appendix B for details regarding Delaware’s outreach campaign.
6. **Continuing Education** – DNREC will utilize existing training and education materials developed by the Chesapeake Bay Local Government Workgroup ([Local Government Guide to the Chesapeake Bay](#)) to include local planning authorities such as technical and enforcement staff, in addition to elected and appointed officials. DNREC will also provide additional continuing education related to riparian forest buffers, tree identification, and maintenance needs through workshops. DNREC will potentially partner with the Department of Agriculture Forestry program and others such as the Chesapeake Tree Stewards Program. The recommended timeframe to

implement this activity is fall/winter 2022-2023. See Appendix B for more information on technical assistance.

7. **Landscape Training** - Provide training to staff and private landscaping providers to help them with identification of native trees and landscaping. This is necessary for them to verify trees that should be in place in the forested buffer strips surrounding housing developments. DNREC will need to work in conjunction with Sussex County zoning to obtain records for the location of developments that should have these buffers in place. See Appendix B for more information on outreach and technical assistance.

Conclusion

A strong commitment of federal, state, and local leadership is needed to support the program efforts and to provide adequate resources in Delaware and throughout the CBWS. RFBs are one of the most cost-effective means to achieve nitrogen reductions, but strong and consistent interagency cooperation and prioritization of resources is needed. Failure to achieve desired program goals in the WIP may mandate more expensive nutrient reduction options, such as enhanced nitrogen removal or urban storm water retrofits. To meet these goals, Delaware needs to get the maximum return for state investment in CREP and utilize in-state cost share and easement programs. Buffer implementation in Delaware is currently opportunistic in nature rather than a targeted approach. There has not been enough interest in RFB statewide to target specific areas for plantings. Renewed buffer interest could be created by simplifying the process for access to cost share programs and making the program more accessible. Technical staff will be needed that are able to reach landowners and promote the available programs. Staff will also need to be able to advise on and assist with maintenance practices. The TEDI program will continue to plant trees throughout the state, but it will require additional support and funding to accomplish its goals.

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Appendix A:

State Buffer Cost Share Program

Goal: Work with landowners and local entities across the Chesapeake Bay watershed to restore or create forest buffers that improve the quality of local waterways.

Criteria

- Land must be within the [Chesapeake Bay watershed](#).
- Proximity to waterway; land to be forested must be next to a stream or ditch.
- Minimum acreage or linear feet requirement: Private lawns and golf courses will need enough area to accommodate a minimum of ½ acre of one of the buffer types.
- Tax ditches are not eligible to establish woody conservation buffers. Buffers are only allowed with the approval of the tax ditch manager.
- Farmers and landowners who are responsible for the management of eligible lands may apply.
- Farmers who lease agricultural lands must certify an active lease for the term of the buffer or provide an agreement from the landowner or landowner needs to supply a signed notification from the farmer leasing the land to acknowledge the presence of a buffer will be put in and not to crop the newly planted area.
- Farmers and landowners must be in good standing with the Nutrient Management Program and the Delaware Agricultural Land Preservation Foundation Program, if applicable.
- Must agree to keep the areas forested for a minimum of 5 years, with renewal for up to 10 years.

Project Specifics

- One hundred percent of project costs are covered for qualifying landowners.
- Incentive payment paid to landowner for 5 years. Receive incentive in one-time payment.
- Allow fruit/nut trees, and herbaceous vegetation.
- Maintenance will be provided in the form of State contracted landscaping crews or trained staff. Maintenance crews will manage the upkeep of the buffers as well as provide verification of the practices.
- RFB coordinating partners will help provide free technical assistance and assistance with buffer installation.
- Outreach and promotion of the program will be provided through the County Soil Conservation Districts, DNREC, members of DDA Forestry Service, Master Naturalists/Gardeners, and the Nanticoke Watershed Alliance among other partners.

Tiered approach

- >5 years; 50% incentive payment paid.
- >10 years; eligible for easement program.

How to Apply

- Complete an application, no contact sign-up an option.
- Submit a map that shows the location and acreage of the buffer.

- The application is assigned to a forester/service provider.

Funding

- Funding will be provided by the EPA’s Chesapeake Bay Implementation Grant or the Bipartisan Infrastructure Law/Infrastructure Investment and Jobs Act funding, depending on location.

2022 CBWS Buffer Payment Options*				
Practice Name	Adjacent Land Use	One-Time Payment (New)	Renewal One-Time Payment (Existing)	Agreement Term (years)
Narrow Forested Buffer (10-35 feet)	Pasture/Cropland	\$500/acre	\$250	5
Forested Buffer (>35 feet)	Pasture/Cropland	\$1,000/acre	\$500/acre	5
Narrow Urban Forest Buffer (10-35 feet)	Urban/Developed	\$500/acre	\$250	5
Urban Forested Buffer (>35 feet)	Urban/Developed	\$1,000/acre	\$500/acre	5

*Contingent upon funding approval through Chesapeake Bay Infrastructure Investment and Jobs Act funding

Appendix B:

Outreach Timelines

Agriculture Landowners

Activity	Description	Timeline			
		Fall-Winter (October 22 - January 23)	Spring (February 23 - April 23)	Summer (May 23 - August 23)	Fall (September 23 - October 23)
Targeted Strategy Development	Determine which methods for contact bring in the most interest to the program. Utilize new mapping info to target audience.	-GIS analysis to identify landowners within the CBWS that have waterfront property.	-Use info from targeted analysis to determine preferred methods for contact.	-If possible, identify landowners that have expired CREP installations or those that applied but were not eligible.	-Use info from the last year to determine what are our most effective methods were for generating interest. If we need to change something for next year work on that.
Outreach Campaign	Includes mailings, handouts, direct contact, workshops, and meetings. Promotion by NGO's and other cooperating agencies.	-Develop a handout to provide to landowners at meetings. This will provide program details and all contact info. -Promote the program at Agronomy Days and DE Ag Week. -Have signup sheets available at all events for those interested to provide their contact info. Signups will detail preferred method of contact. - Advertise in the Delmarva Farmer. -Social media promotion.	-Contact those individuals that have provided their info on sign ups. -Promote program at the Women in Ag Conference (Dover, DE). - Direct mailing or email to waterfront properties in CBWS. Followed this up with a meeting/program for them to attend. -Ask the Conservation Districts to promote and offer signups for the program alongside the programs they are offering. - Advertise in the Delmarva Farmer. -Social media promotion.	-Send a mailing to anyone that has given their contact info but has not signed up (either email or snail mail). Remind them of the program. -Advertise at the DE State Fair. -Advertise the program along with the cover crop programs promoted by NRCS, DDA and the Conservation Districts. - Advertise in the Delmarva Farmer. -Social media promotion.	-Continue to utilize UDEL extension and the Conservation Districts for promotion. - Reach out to people that have been turned down or were not eligible for other programs, like CREP. Or those that were interested but did not apply due to the complexity of that program. - Advertise in the Delmarva Farmer. -Social media promotion.
Technical Assistance	Provide technical assistance to support the establishment of RFB's. As well as training on the installation of RFB's and verification of practices.	-Educate NGOs and state agencies on the programs so they can share the opportunity with landowners. Keep everyone up to date on the program and promotional info.	-Work shop with UDEL and Conservation Districts so that they are familiar with the program and are able to promote at their events.	-Training for those that will need to be doing any verification and identification of the tree plantings. (conservation districts or private landscapers).	-Follow up with NGOs and state agencies on the program so they can share the opportunity with landowners for the following spring.
Implementation	Installation of RFB.		Agricultural lands installation of RFB.	Maintenance of buffers or preparation for fall plantings.	Agricultural lands installation of RFB.

Urban Landowners

Activity	Description	Timeline			
		Fall-Winter (October 22 - January 23)	Spring (February 23 - April 23)	Summer (May 23 - August 23)	Fall (September 23 - October 23)
Targeted Strategy Development	Determine which methods for contact bring in the most interest to the program. Utilize new mapping info to target audience.	-GIS analysis to identify landowners within the CBWS that have waterfront property.	-Use info from targeted analysis to determine preferred methods for contact.	-Undergo County landscape buffer analysis to verify buffers in Sussex County developments. Follow up, with the County, buffers not in compliance.	-Use info from previous year to determine what methods are most effective to generate interest. Employ an adaptive management framework, when necessary.
Outreach Campaign	Includes mailings, handouts, direct contact, workshops, and meetings. Promotion by partners and other cooperating agencies.	-Develop a handout to provide to landowners with program details and all contact info. -Provide signup sheets for all events for those interested. -Advertise in local publications. -Social media promotion.	- Direct mailing or email to waterfront properties in CBWS. Followed this up with a meeting/program for them to attend. -Promote program at the Women in Ag Conference (Dover, DE). -Utilize Master Gardener/ Naturalists or Tree Stewards to promote the program at any of their events. -Promote TEDI plantings. -Social media promotion.	-Send a mailing to anyone that has given their contact info but has not signed up. -Promote at the Water Family Fest. -Advertise at the DE State Fair. -Social media promotion.	-Social media promotion. -Advertise in local publications. -Plantings with local 4-H clubs, boys/girls clubs, YMCA, FFA, boy/girl scouts.
Technical Assistance	Provide technical assistance to support the establishment of RFB's. As well as training on the installation of RFB's and verification of practices.	Educate NGOs and state agencies on the programs so they can share the opportunity with landowners. Keep everyone up to date on the program and promotional info.	Workshop with practitioners, Tree Stewards, or Master Gardener/Naturalists so they are familiar with the program and can promote at their events.	-Training Green Infrastructure interns that will be conducting buffer verification and/or maintenance/ identification of the tree plantings.	Follow up with partners on the program so they can share the opportunity with landowners for the following spring.
Implementation	Installation of RFB and urban tree plantings.		Urban homeowner installation of RFB and urban tree plantings.	Maintenance of buffers or preparation for fall plantings.	Urban homeowner installation of RFB and urban tree plantings.

Municipalities

Activity	Description	Timeline			
		Fall-Winter (October 22 - January 23)	Spring (February 23 - April 23)	Summer (May 23 - August 23)	Fall (September 23 - October 23)
Targeted Strategy Development	Determine which methods for contact bring in the most interest to the program. Utilize new mapping info to target audience.		-Work with Sussex County zoning to access records of the property buffers in Sussex County.		-Use info from the last year to determine what are our most effective methods of generating interest. If we need to change something for next year work on that.
Outreach Campaign	Includes mailings, handouts, direct contact, workshops, and meetings. Promotion by NGO's and other cooperating agencies.	-Develop a handout to provide to local government staff at meetings. This will provide program details and all contact info. -Meet with local governments to help promote the program to them.	-Plantings at local parks or business. - Advertise the events in local publications prior to event.	- Advertise program and Fall planting events in local publications.	-Plantings at schools with promotion of the programs to students.
Technical Assistance	Provide technical assistance to support the establishment of RFB's. As well as training on the installation of RFB's and verification of practices.	On-site meetings with town managers/public works to discuss possible planting locations/future opportunities.	- Workshop/trainings for local government staff that will be conducting maintenance. Specifically for Sussex County staff, provide tree identification training for verification of the privacy buffers. -Train Green Infrastructure interns to verify RFB installations.		On-site meetings with town managers/public works to discuss possible planting locations/future opportunities.
Implementation	Installation of RFB and urban tree plantings.		Municipalities installation of RFB and urban tree plantings.	Maintenance of buffers or preparation for fall plantings.	Municipalities installation of RFB and urban tree plantings.

Appendix C:
BMP Tracking

Buffer Type	Data Measurement	Data Reporting	Lifespan
Narrow Forested Buffer (10-35 feet)	Acreage	State Buffer Cost Share Program (DNREC)	10 years
Forested Buffer (>35 feet)	Acreage	State Buffer Cost Share Program (DNREC)	10 years
Narrow Urban Forest Buffer (10-35 feet)	Acreage	State Buffer Cost Share Program (DNREC)	10 years
Urban Forested Buffer (>35 feet)	Acreage	State Buffer Cost Share Program (DNREC)	10 years
CP3A Hardwood Tree Planting*	Acreage	NRCS-CREP, USDA	10 years
CP22 Riparian Buffer	Acreage	NRCS-CREP, USDA	10 years
Urban Tree Planting	Number of trees planted, converted to acreage	TEDI Tracker and Urban and Community Forestry Program	10 years
Sussex County RFB and forested/landscape buffers	Acreage	High Resolution mapping for verification of out of installations. Site verification by trained staff.	10 years

*DNREC reports all BMPs in accordance with [Delaware's Quality Assurance Project and Verification Plan](#)