

**Enabling Coastal Resilience Projects in Mean Low Water States:
Addressing Challenges to the Use of Public Funds in the Privately-Owned
Intertidal Zone**

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Photograph of offshore breakwater built with rocks. Image Credit: Laura J. Whitaker.



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The Institute for Engagement & Negotiation (IEN) is a nationally recognized leader in fostering collaborative change across a broad range of environmental, social and economic issues. Founded in 1980, its mission is to facilitate shared solutions through effective collaboration, research and training. It is part of the Weldon Cooper Center for Public Service at the University of Virginia.

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Executive Summary

Virginia is what is known as a “Mean Low Water” state – meaning, the jurisdictional line that establishes the landward limit of state-owned bottomlands is the mean low water (MLW) line, so the intertidal zone between the mean high water and mean low water lines can be privately owned. This can pose a challenge when attempting to use public funds for resilience projects that encroach upon that space or that benefit private property owners. This paper provides further background on that challenge; describes living shoreline designs, including ones that can be installed beyond the MLW line and thus avoid encroachment onto privately owned intertidal zones; highlights examples of successful resilience projects that have encroached upon the intertidal zone in Virginia; and provides case studies of resilience projects conducted in the other MLW states (Delaware, Maine, Massachusetts and Pennsylvania), including information on those states’ legal frameworks establishing the MLW jurisdictional line and the public trust doctrine. Finally, the paper offers some recommended methods to address challenges in using public funds for shoreline resilience projects in MLW states, including recommendations concerning the design and permitting of living shorelines in Virginia, alternative funding sources, and legal instruments that could be used to gain permission to access private property for resilience projects.

I. Introduction

Shoreline stabilization is an important concern in all coastal states facing erosion, but it is particularly important in the Commonwealth of Virginia. The State is experiencing one of the highest rates of relative sea level rise on the East Coast, and also is subject to the sediment discharge caps of the Chesapeake Bay Total Maximum Daily Load (TMDL) issued in 2010 by the U.S. Environmental Protection Agency (EPA).¹ Both gray infrastructure, such as seawalls and riprap revetment, and green infrastructure, such as living shorelines and other natural or nature-based features, are important stabilization measures to protect coastal property and water quality in high erosion areas. Living shorelines provide additional benefits such as retaining natural habitat and enabling the upward migration of wetlands in the face of sea level rise; so in 2020, the Virginia General Assembly adopted two important amendments to the Virginia Tidal Wetlands Act: a requirement that only living shorelines shall be used for shoreline management unless the best available science says that their use is not suitable, and a requirement that the Virginia Marine Resources Commission (VMRC) protect wetlands in a manner consistent with any standards adopted by the State to ensure protection of shorelines and sensitive coastal habitats from sea level rise and coastal hazards.²

In order to help homeowners with eroding shorelines to meet that requirement, the Middle Peninsula Planning District Commission (MPPDC) operates a loan and grant program to provide funding assistance to property owners who wish to install living shorelines.³ The PDC applied for a grant from the Building Resilient Infrastructure and Communities (BRIC) program of the Federal Emergency Management Agency (FEMA)⁴ to provide funding for living shoreline projects. Concerns were raised by FEMA staff during the grant review process because Virginia is one of a few states that delineates state-owned bottomland as extending waterward from the Mean Low Water (MLW) line on the shore.⁵ This delineation means that shoreline stabilization projects that include the intertidal zone on privately owned parcels encroach upon private property and require some form of access permission. According to the MPPDC staff, FEMA also expressed concern about this use of public funds to protect private property.

¹ See U.S. Env't Prot. Agency, Chesapeake Bay Total Maximum Daily Load (TMDL), [Chesapeake Bay TMDL Document | US EPA](#).

² Va. Code Ann. § 28.2-104.1 (2020) and Va. Code Ann. § 28.2-1301.B (2020).

³ See Middle Peninsula Planning Dist. Comm'n, MPPDC Living Shoreline Incentive Program, [MPPDC Living Shoreline Incentive Program](#) (last visited Nov. 8, 2025).

⁴ See Fed. Emergency Mgmt. Agency, Building Resilient Infrastructure and Communities, [Building Resilient Infrastructure and Communities | FEMA.gov](#) (last visited Nov. 8, 2025).

⁵ Email from Tanya Graham-Simms, Grants Management Specialist, Hazard Mitigation Branch I, Region III, Fed. Emergency Mgmt. Agency, to Alexander Krupp, Va. Dep't of Emergency Mgmt. (August 5, 2022) (on file with MPPDC and the author).

The FEMA BRIC program was discontinued⁶ before a final decision was made concerning the MPPDC’s grant application, but general questions remain concerning the use of public funds and the acquisition of access permission for shoreline stabilization projects that include privately-owned intertidal zones. The Virginia Coastal Zone Management Program provided grant funding to research the following issues:

- Whether and how other MLW states have used federal funding for coastal projects that encroach upon privately owned property
- How coastal shoreline projects in Virginia that encroach upon privately owned intertidal zones have obtained access, and whether they used federal funding
- How the public trust doctrine has been enacted in other MLW states and applied in the coastal area, specifically in a coastal resilience framework

This paper addresses those questions and provides some recommendations to overcome the challenges posed by trying to use public funding for shoreline stabilization projects on private property in an MLW state.

II. An Explanation of the Mean Low Water Line and the Intertidal Zone

Mean Low Water (“MLW”) is the average measurement of low water heights, which are measured over a roughly 19-year period known as the National Tidal Datum Epoch (NTDE).⁷ Similarly, Mean High Water (“MHW”) is the average of all high-water heights observed during the NTDE period.⁸ The VMRC website notes that state water bottoms are the submerged lands that begin at the MLW mark, “which is the average low water mark over the past 20 years.”⁹ In addition, the Code of Virginia defines the Territorial Sea as “the waters within the belt, three nautical miles wide, that is adjacent to Virginia’s coast and seaward of the mean low-water mark.”¹⁰

Virginia law sets forth the MLW mark as the jurisdictional boundary of submerged lands in the Commonwealth.¹¹ As shown in Figures 1 and 2, the intertidal zone is the area “where the

⁶ See Fed. Emergency Mgmt. Agency, FEMA Advisory, Update on FEMA Ending the Building Resilient Infrastructure and Communities Program (April 16, 2025), [FEMA-Advisory-Update-on-FEMA-Ending-the-Building-Resilient-Infrastructure-and-Communities-Program-April-16-2025.pdf](#).

⁷ Nat’l Oceanic & Atmospheric Admin. (NOAA), Tides and Currents, *Tidal Datums*, https://tidesandcurrents.noaa.gov/datum_options.html (last visited Nov. 8, 2025).

⁸ *Id.*

⁹ Va. Marine Resources Comm’n, [Habitat Management Overview](#), *Habitat Management Frequently Asked Questions* (last visited Nov. 8, 2025).

¹⁰ Va. Code Ann. § 28.2-100, Definitions (1950).

¹¹ See Va. Code Ann. § 28.2-1202 (1950):

Rights of owners to extend to mean low-water mark.

ocean meets the land,” existing between the MLW line and the MHW line.¹² As this area is submerged during high tides and exposed during low tides, it is an ecosystem rich in biodiversity which also provides essential protection against shoreline erosion.

A. Subject to the provisions of § 28.2-1200, the limits or bounds of the tracts of land lying on the bays, rivers, creeks and shores within the jurisdiction of the Commonwealth, and the rights and privileges of the owners of such lands, shall extend to the mean low-water mark but no farther, except where a creek or river, or some part thereof, is comprised within the limits of a lawful survey. ...

C. Notwithstanding any provision of law to the contrary, where sand or other material is placed upon state-owned beds of the bays, rivers, creeks, or shores of the sea channelward of the mean low-water mark as part of the performance of a properly permitted beach nourishment, storm protection, or dredging project undertaken by a public body, and the public has an established right of use and maintenance upon the adjacent land above the mean low-water mark, whether such public right is established before or after the sand or other material is placed, such placement shall not be deemed a severance or taking of, or otherwise to have impaired, an adjacent landowner's riparian or littoral rights, and the newly created land channelward of the former mean low-water mark shall be deemed natural accretion for purposes of ownership, but such ownership shall be subject to the public's same right of use and maintenance upon the newly created land as previously existed on the adjacent land above the mean low-water mark. This subsection is retroactively effective beginning January 1, 2009.

Note that, in 2023, the General Assembly passed SB 1074 and HB 2181, with the result that VMRC is no longer requiring permits for activity conducted in nontidal waters, provided that the activity is covered by a Virginia Water Protection Permit and complies with all requirements of the Virginia Water Resources and Wetlands Protection Program. Va. Marine Resources Comm'n, Subaqueous Guidelines, Sec. VII, *Activities in non-tidal areas*. The Guidelines explain that state jurisdiction within nontidal waterways extends landward to the MHW mark:

The Commission will continue to require permits for encroachments over or under jurisdictional State-owned submerged lands. The Commission has defined the minimum size of non-tidal waterways as those perennial streams with a drainage area of 5 square miles or with a mean annual instream flow of 5 cubic feet per second. Activities within waterways with characteristics below these threshold attributes do not require authorization from this agency. **The Commission has determined the extent of jurisdiction within non-tidal waterways to extend no further landward than the ordinary high water mark.** While the State of Virginia has not adopted a legal definition of ordinary high water, the Federal definition represents an informative explanation of the term. The Army Corps of Engineers defines ordinary high water in 33 CFR Part 329 "Definition of Navigable Waters of the US" Section 329.11a.1. This regulation states that the "ordinary high water mark" on non-tidal rivers is the line on the shore established by the fluctuations of water and indicated by the physical characteristics such as a clear, natural line impressed on the bank, shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding area.

Id. at 15 (emphasis added). [GetFile.cfm.https://law.lis.virginia.gov/vacode/title33.2/chapter18/](https://law.lis.virginia.gov/vacode/title33.2/chapter18/).

¹² Nat'l Oceanic & Atmospheric Admin., Nat'l Ocean Service, Ocean Facts, *What Is The Intertidal Zone?*, <https://oceanservice.noaa.gov/facts/intertidal-zone.html> (last visited Nov. 8, 2025).

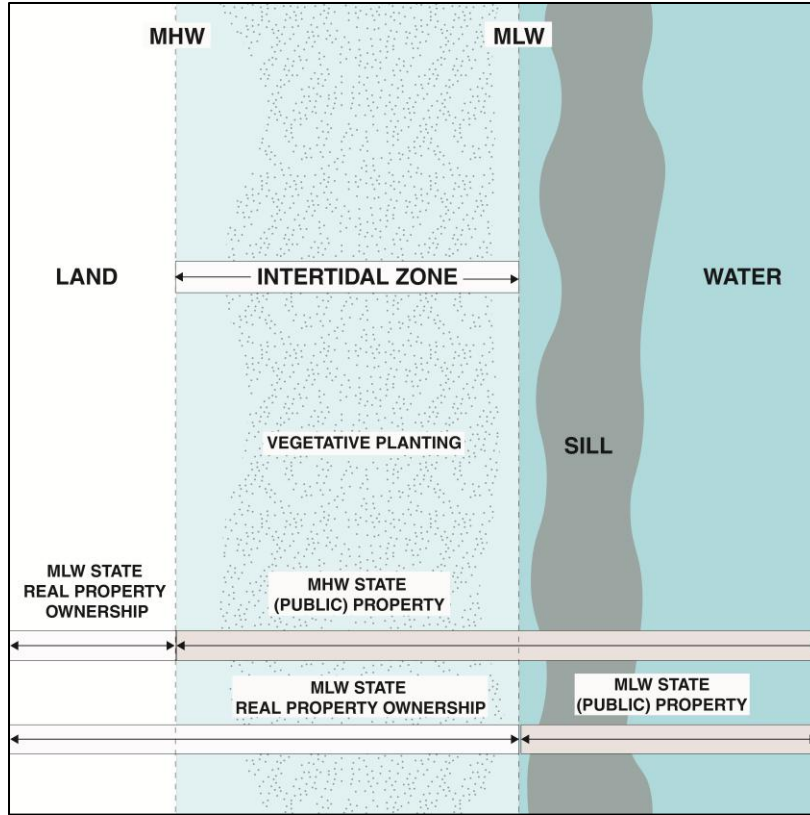


Figure 1. Diagram of Delaware, Maryland and Virginia jurisdictional boundaries between upland real property and waterward public lands on a parcel with a living shoreline. Image Credit: Laura J. Whitaker

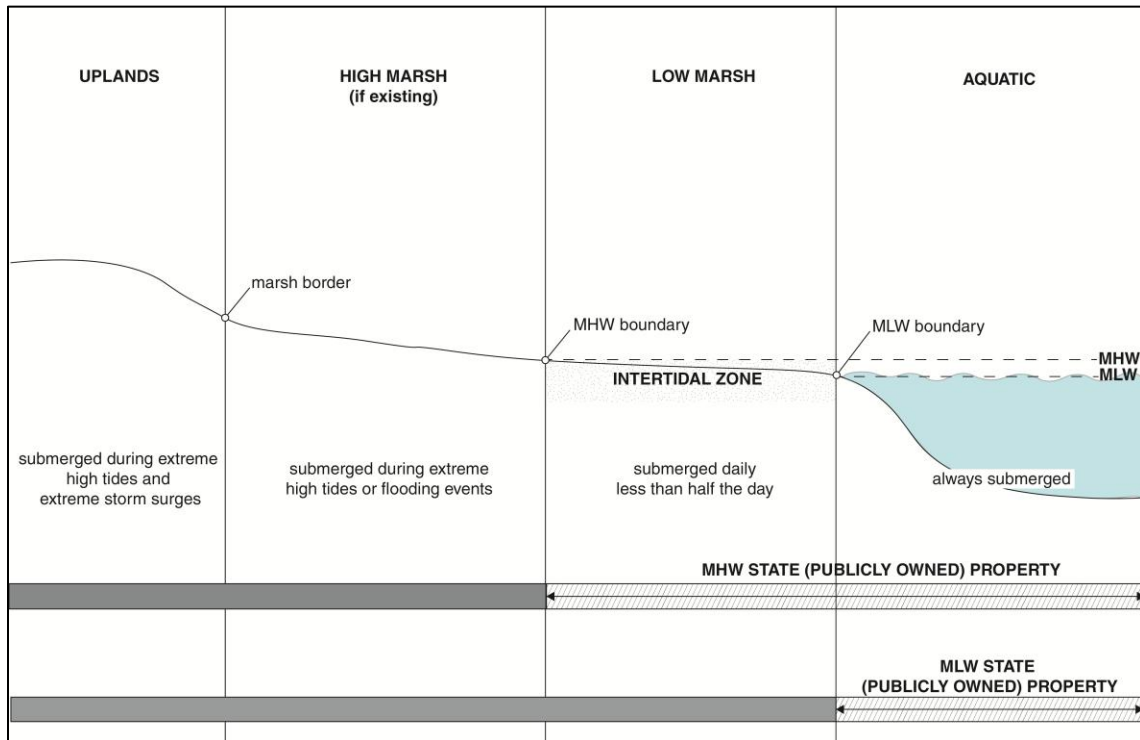


Figure 2. Cross-sectional diagram of uplands, marsh and submerged lands. Image Credit: Laura J. Whitaker

The MLW line may not be legally or factually clear in some instances, which can complicate an assessment of which areas are privately owned intertidal zones and which are state-owned bottomland.¹³ Additionally, the intertidal zone width can vary in different areas of the Virginia shoreline, which may impact the likelihood of encroachment upon privately owned property when installing shoreline stabilization projects. Students in a Fall 2023 Virginia Institute of Marine Science Coastal Science and Policy Practicum class conducted a sample GIS analysis of public lands and the width of the intertidal zone in vulnerable counties in the Virginia coastal plain that have properties on marine/estuarine deep water and marine/estuarine wetlands. They found that those shoreline properties are predominantly privately owned, with approximately 67% privately owned and 33% government (federal/state/locality) owned.¹⁴ That public/private distribution will differ in various coastal regions of Virginia; for example, Hampton Roads is host to many federal facilities and much of the coast of the Eastern Shore is owned by federal agencies or The Nature Conservancy. However, the sampled area of the Middle Peninsula exemplifies the challenge posed by trying to install shoreline stabilization measures on predominantly privately held lands. The students also found that the width of the intertidal zone was highly variable within the region, with wide zones tending to be found on the high energy shorelines that may be areas highly susceptible to erosion. They noted that, in these areas, it will be hard to build effective resilience projects that do not encroach on privately owned intertidal zone lands.¹⁵

III. Living Shorelines

As noted above, Virginia mandates the installation of living shorelines for all shoreline stabilization efforts unless the best available science deems them unsuitable.¹⁶ If a living

¹³ Baseline vertical datums, the standards against which geographic elevations are measured, are maintained by NOAA. The agency currently is updating the information on which vertical datums are based, leading to the expected issuance of new baseline standards in the next year. The Virginia Coastal Zone Management Program, with support from NOAA Grant # NA23NOS4190255, has funded the Virginia Coastal Resilience Collaborative at William & Mary to catalog references to vertical datums in the Virginia Code, Virginia Administrative Code, and two sets of representative local government documents as the first step in evaluating the potential impacts in Virginia of updating vertical datums, including making recommendations to address latent policy changes if necessary.

¹⁴ Mary Beth Armstrong, Nikole Beck, Lilly Blume, Emma Dodsworth, Natalie Klesch, Ann Jacob Woodson, *Review of considerations concerning the use of public funding to protect private property in Virginia 8* (Fall 2023) (unpublished white paper) (on file with Va. Institute of Marine Science).

¹⁵ *Id.* at 8-10.

¹⁶ Va. Code Ann. § 28.2-104.1.D (2020) (“The Commission shall permit only living shoreline approaches to shoreline management unless the best available science shows that such approaches are not suitable. If the best available science shows that a living shoreline approach is not suitable, the Commission shall require the applicant to incorporate, to the maximum extent possible, elements of living shoreline approaches into permitted projects.”). Additionally, in 2020 the General Assembly amended the Virginia Tidal Wetlands Act to require the VMRC to “preserve and prevent the despoliation and destruction of wetlands ... in a manner consistent with wetlands preservation and any standards set by the Commonwealth to ensure protection of shorelines and sensitive coastal habitats from sea level rise and coastal hazards,” including guidelines and minimum standards promulgated by VMRC to assist counties, cities, and towns in regulating wetlands. Va. Code Ann. § 28.2-1301.B (2020). Shoreline

shoreline is determined to be unsuitable, the design for the installation which is appropriate for the site must contain as many of elements of living shorelines as possible, such as sand and plants.¹⁷ Encroachment upon the intertidal zone is often necessary to install living shorelines, particularly ones that are designed to take into account projected sea level rise, but other shoreline stabilization interventions also may require it, including beach restoration projects and groins that extend from the intertidal zone out into state-owned bottomlands. Such encroachment is challenging in an MLW state such as Virginia, where permission may be required because the intertidal zone may be privately owned.

A) Types of Shoreline Stabilization Measures

In considering encroachment of shoreline stabilization measures into the intertidal zone, it is important to understand the types that are available in order to determine whether such encroachment is avoidable. Shoreline stabilization measures can range from highly fortified gray infrastructure, such as bulkheads or seawalls, to natural or nature-based features, such as living shorelines, thin layer placement of dredged material to stabilize wetlands, or beach renourishment, also known as green infrastructure.¹⁸ Heavier stabilization components (*i.e.*, gray infrastructure) are typically appropriate in high wave energy environments or in locations having a steep drop-off where the land meets the water. Bulkheads and sea walls are hardened vertical walls that buttress the uplands and are often made from concrete, steel, or wood. While they offer the benefit of being familiar, durable, and relatively easy to repair, they prevent sediment migration, cause wave energy to refract off the wall surface, and can cause erosion on the waterside ground surface.¹⁹ In barrier islands, or similar locations where tidal waters exist on multiple sides, the installation of sea walls on the seaward side of a property can increase vulnerability for other nearby properties, as water is merely redirected, consequentially surging through on the bay side of the barrier island.²⁰ Additionally, as the ground erodes in front of a seawall or bulkhead, it potentially eliminates land that could provide public access for fishing, fowling, and other activities authorized by the Public Trust Doctrine.²¹

protection strategies that take into account sea level rise are essential for proactive adaptation planning, but also more likely to extend into the intertidal zone beyond the MLW line and potentially encroach upon private property. The VMRC adopted Tidal Wetlands Guidelines ([Final-Wetlands-Guidelines-Update_05-26-2021.pdf](#)) in 2021 that include minimum standards for protection of shorelines and sensitive coastal habitat from sea level rise. The Virginia Coastal Zone Management Program subsequently funded the nonprofit Wetlands Watch to develop a guide, "[Designing Living Shorelines for Sea Level Rise in Virginia](#)," for shoreline professionals seeking detailed adaptive design examples and practical solutions to combat the challenges posed by rising sea levels and coastal hazards.

¹⁷ *Id.*

¹⁸ For more information, see Nat'l Oceanic & Atmospheric Admin., Nat'l Marine Fisheries Service, Understanding Living Shorelines, <https://www.fisheries.noaa.gov/insight/understanding-living-shorelines> (last visited Nov. 8, 2025).

¹⁹ See *id.* See also NOAA, Guidance for Considering the Use of Living Shorelines 10 (2015), <https://repository.library.noaa.gov/view/noaa/71191>.

²⁰ See Catherine Seavitt Nordenson, Guy Nordenson, Julia Chapman, *Structures of Coastal Resilience* 172-74 (Washington: Island Press 2018).

²¹ See the public trust doctrine discussion, *infra* Section V, and the Public Trust Doctrine set forth in Va. Code § 28.2-1200 (1950):

Revetments, breakwaters, and groins are all comprised of large armor stones.²² In revetments, the stones are positioned along the coastal edge in the intertidal zone and can be supplemented with marsh plantings on the landward side. Breakwaters are typically constructed parallel to and offset from the coastline and can be located completely outside of the intertidal zone. Living breakwaters are a type of hybrid living shoreline and may include vegetation or oyster reefs.²³ They are akin to a rock island and do not encroach upon the intertidal zone, as they are located offshore.²⁴ Groins run perpendicular to the coastline and jut out into the water, stretching from the intertidal zone to the bottomlands.²⁵ Groins are especially effective at trapping longshore sediment transfer²⁶ and can be commonly found on East Coast beaches.

In calm tidal water settings, living shorelines or some combination of plants and sand placed adjacent to or within the intertidal zone can more effectively absorb wave energy over a wide, gradual slope increasing from waterside to landside. This stretch of slope provides an opportunity for the sediment being transported by the moving water to settle out of the water column.²⁷ As the sediment accumulates it increases the overall landmass, known as vertical accretion, which buffers the shoreline and creates new habitat.²⁸ Edging and sills are two common intervention options that utilize a coir (edging) or armor stones (sills) placed parallel to the coast typically along the MLW line. Sand and native plants are then installed on the landward side of these structures, providing a zone for wave energy absorption and water filtration. The vegetation also stabilizes the structure as the plant roots secure the mix of soil, sand, and peat.²⁹

Ungranted beds of bays, rivers, creeks and shores of the sea to remain in common.

All the beds of the bays, rivers, creeks and the shores of the sea within the jurisdiction of the Commonwealth, not conveyed by special grant or compact according to law, shall remain the property of the Commonwealth and may be used as a common by all the people of the Commonwealth for the purpose of fishing, fowling, hunting, and taking and catching oysters and other shellfish. No grant shall be issued by the Librarian of Virginia to pass any estate or interest of the Commonwealth in any natural oyster bed, rock, or shoal, whether or not it ebbs bare.

²² See Nat'l Oceanic & Atmospheric Admin., *Dynamic Revetments Provide A Nature-Based Approach to Control Erosion in High Wave Energy Environments*, <https://coast.noaa.gov/digitalcoast/training/high-wave-energy.html> (last visited Nov. 8, 2025).

²³ For an example of a living breakwater, see Scape Studio, *Living Breakwaters*, Staten Island, NY, [Living Breakwaters - SCAPE](#) (last visited Nov. 8, 2025).

²⁴ See Nat'l Park Service, *Breakwaters, Headlands, Sills, and Reefs*, <https://www.nps.gov/articles/breakwaters-headlands-sills-and-reefs.htm> (last visited Nov. 8, 2025).

²⁵ See Nat'l Park Service, *Groins and Jetties*, <https://www.nps.gov/articles/groins-and-jetties.htm> (last visited Nov. 8, 2025). See also for diagram (Living Shoreline Typologies) Maine Dept. of Agriculture, Conservation & Forestry, Maine Geological Survey, [Maine Geological Survey: Living Shorelines](#).

²⁶ Longshore sediment transfer is also referred to as "littoral drift", which is defined as "the sedimentary material moved or transported in the littoral zone parallel to the shoreline under the influence of waves and currents." Nordenson *et al.*, *supra* n. 20, at 203.

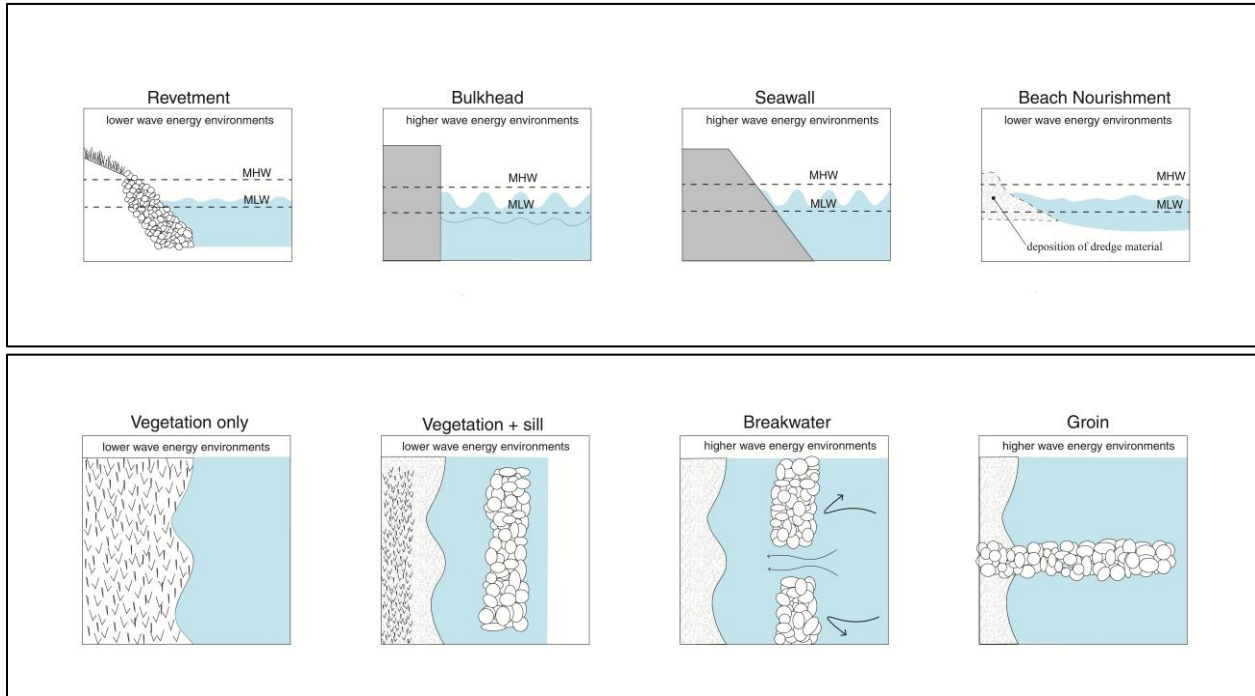
²⁷ See, e.g., Tosin A. Gaskin *et al.*, *Living Shoreline in USACE Projects: A Review* 9 (U.S. Army Corps of Eng'rs, Eng'r Research & Devt. Ctr., ERDC/EL TR-25-6, April 2025), <http://dx.doi.org/10.21079/11681/49678>.

²⁸ See *id.*

²⁹ Daniel Hayden, *Restore America's Estuaries, Living Shorelines: A Sound Investment*, Nat'l Oceanic & Atmospheric Admin. Office of Response & Restoration (April 1, 2021, 2:09 p.m.), <https://blog.response.restoration.noaa.gov/living-shorelines-sound-investment>.

In areas with very low wave energy, simply planting marsh vegetation can be a very effective solution to combat erosion from tidal waters, absorb wave energy, create habitat, and filter water.³⁰ See Figures 3 and 4 below for diagrams of various types of living shorelines:

Living Shoreline Typologies:



Figures 3 and 4. Diagrams of various living shoreline types, seen from above. Image Credit: Laura J. Whitaker

B) Benefits of Living Shorelines

Living shorelines are preferred to hardened infrastructure where feasible because they provide benefits beyond shoreline erosion control. As opposed to stabilizing the shoreline with concrete or impervious materials, the components of living shorelines create ideal conditions in which an array of species can live, feed, and nest. These species in turn provide myriad environmental benefits, such as aerating the soil and filtering toxins, making the habitat created by living shorelines an ecological kick starter in forming a robust ecosystem.³¹ Virginia's location within the Atlantic Flyway means coastal marshes also provide essential habitat for migratory birds.³² Additionally, the marshes created by living shorelines reduce toxins from tidal

³⁰ Nat'l Oceanic & Atmospheric Admin.: *Understanding Living Shorelines*, <https://www.fisheries.noaa.gov/insight/understanding-living-shorelines>.

³¹ Heather Clarkson & Katherine Saylor, *Exploring Atlantic Salt Marshes from the Ground Up*, Defenders of Wildlife (May 27, 2025), <https://defenders.org/blog/2025/05/exploring-atlantic-salt-marshes-ground>. See also S.C. Dep't of Nat. Res., Marine Res. Division, Sea Science, *Dynamics of the Salt Marsh*, <https://www.dnr.sc.gov/marine/pub/seascience/dynamic.html> (last visited Nov. 8, 2025).

³² Ecosystem Land Change Science Program, *Managing Marsh Loss Using Sediment Enhancement to Preserve Habitat for Waterfowl*, U.S. Geological Survey, News (Earth Science Matters Newsletter, May 30, 2016),

waters, overland stormwater runoff, and groundwater, thus improving the overall water quality for the surrounding community.³³ Oyster shell reefs not only absorb wave energy and mitigate coastal erosion, but by repopulating oyster communities, a type of living shoreline, they bolster the filtration of the water, thereby improving overall water quality.³⁴

Living shorelines also provide the noteworthy benefit of storing carbon within their biomass.³⁵ According to a National Institutes of Health study, it is estimated that “sill-based living shorelines in North Carolina (roughly 6 miles in total length) offset the equivalent of 7,525 gallons of gasoline consumption each year.”³⁶ As marshes grow, they not only increase their overall size in spatial plane area but increase in depth as well. It is this thickness of the marsh, typically comprised of plant roots, peat, water, muck and clay, that helps sequester carbon deep below the surface, preventing it from entering the atmosphere.³⁷ In light of these carbon sequestration benefits, as well as their provision of habitat and water quality filtration, there is increasing interest in stabilizing coastal marshes that are facing inundation due to sea level rise. Thin layer placement of sediment in marshes potentially can address that need, while also providing the Commonwealth with an opportunity for beneficial use of dredged material -- but such projects again face the challenge posed by potential encroachment into privately-owned intertidal zones.

Living shorelines are powerful tools for coastal resiliency. Through careful site analysis, customized design interventions, and thoughtful consideration to the unique qualities and needs of the site, living shorelines can continue to be an ecologically sound approach to reducing erosion, increasing habitat, sequestering carbon, and improving water quality. Living shorelines are the required approach under Virginia law wherever suitable due to their multifaceted

<https://www.usgs.gov/news/managing-marsh-loss-using-sediment-enhancement-preserve-habitat-waterfowl>.

³³ Gaskin *et al.*, *supra* n. 27. For more information on the benefits of natural and nature based features (NNBFs), see Hayden, *supra* n. 29; Nat’l Oceanic & Atmospheric Admin. Office for Coastal Mgmt., Digital Coast, *Hurricane Sandy and the Value of Trade-Offs in Coastal Restoration and Protection*, [Hurricane Sandy and the Value of Trade-Offs in Coastal Restoration and Protection](#); the NNBF benefits chart and definitions of NNBFs in Virginia Coastal Policy Center, A Quick Guide to Resilience 8-9 (2021), [A Quick Guide to Resilience](#); and the shoreline protection methods comparison chart in Christopher Antoine, *Increasing Living Shoreline Implementation in Virginia: Legal and Policy Recommendations* 6 (Virginia Coastal Policy Center 2018), [Increasing Living Shoreline Implementation in Virginia: Legal and Policy Recommendations](#).

³⁴ Hayden, *supra* n. 29.

³⁵ See Jenny L. Davis, Carolyn A. Currin, Colleen O’Brien, Craig Raffenburg, Amanda Davis, *Living Shorelines: Coastal Resilience with a Blue Carbon Benefit*, Nat’l Institutes of Health, Nat’l Library of Medicine (Nov 16, 2025), <https://pmc.ncbi.nlm.nih.gov/articles/PMC4646691/#:~:text=Implications%20for%20the%20Blue%20Carbon,and%20small%20in%20linear%20extent>. In recognition of the high carbon sequestration potential of coastal marshes, the Virginia Department of Environmental Quality received \$150 million in Climate Pollution Reduction Grants from the U.S. Environmental Protection Agency in 2024 to reduce greenhouse gas emissions, of which \$50 million will be distributed to protect and restore high-carbon coastal habitats and peatlands and manage and restore forestland. [CPRG Project Implementation Grants | Virginia DEQ](#).

³⁶ *Id.*

³⁷ Nat’l. Oceanic & Atmospheric Admin. Media Release, NOAA Study Finds ‘Living Shorelines’ Can Lessen Climate Change’s Effects (Dec. 16, 2015), <https://www.noaa.gov/media-release/noaa-study-finds-living-shorelines-can-lessen-climate-change-s-effects>.

environmental benefits, but in certain situations, alternative designs and intervention methods may be more appropriate, including ones that are installed in the near shore or further offshore that avoid encroachment upon privately owned intertidal zones. Understanding the full range of shoreline stabilization options, the site conditions that inform their selection, and the potential implications associated with each option is essential for responsible coastal management. Equally important is the transparency and adaptability of regulatory frameworks, which must allow for expert judgment, evolving science, and the nuanced application of policy. If Virginia is to continue its encouragement of resilient and ecologically sound coastlines, maintaining clear requirements regarding shoreline stabilization measures, while leaving room for nuanced interpretation by regulators and encouraging thoughtful innovation, will help ensure long-term sustainability and sound environmental stewardship.

C) Living Shorelines in Virginia

In Virginia, a living shoreline is defined in Code as:

"Living shoreline" means a shoreline management practice that provides erosion control and water quality benefits; protects, restores, or enhances natural shoreline habitat; and maintains coastal processes through the strategic placement of plants, stone, sand fill, and other structural and organic materials. When practicable, a living shoreline may enhance coastal resilience and attenuation of wave energy and storm surge.

"Other structural and organic materials" means materials or features that provide added protection or stability for the natural shoreline habitat components of a living shoreline that attenuate wave energy and do not interfere with natural coastal processes or the natural continuity of the land-water interface. "Other structural and organic materials" may be composed of a variety of natural or man-made materials, including rock, concrete, wood fiber, oyster shells, and geotextiles; however, structural features shall be free from contaminants and shall be adequately secured to prevent full or partial dislodging or detachment due to wave action or other natural forces.³⁸

There have been various discussions among stakeholders as to the exact interpretation of this definition, and how much ecological function a project must provide in order to be considered a living shoreline. As noted above, Virginia law requires that living shorelines must be implemented unless the best available science deems they are not appropriate in the existing site conditions.³⁹ For situations where they cannot be used, VMRC issued guidance stating that rock revetment is the preferred alternative for shoreline stabilization.⁴⁰

³⁸ Va. Code Ann. § 28.2-104.1(A) (2022), [§ 28.2-104.1. Living shorelines; development of general permit; guidance.](#)

³⁹ *Id.* Subsection D.

⁴⁰ Va. Marine Resources Comm'n, Tidal Wetlands Guidelines 9-11 (2021), [Final-Wetlands-Guidelines-Update_05-26-2021.pdf](#) (noting that when living shorelines cannot be used, rock revetments are the preferred alternative; and erosion control structures such as seawalls and bulkheads are not permitted unless the VMRC or local wetlands board determines they are necessary and no other approach is suitable).

In 2011, the Virginia General Assembly set forth a requirement that a General Permit be established to streamline the implementation of living shorelines in tidal wetlands.⁴¹ In the subsequent years, VMRC developed and issued regulations creating the Group 1 General Permit for Certain Living Shoreline Treatments Involving Tidal Wetlands (2015)⁴² and the Group 2 General Permit for Certain Living Shoreline Treatments Involving Submerged Lands, Tidal Wetlands, or Coastal Primary Sand Dunes and Beaches (2017).⁴³ The advantage of the Group 1 Permit is that it permits a faster overall process with no fees and no requirement for notification of adjacent property owners.⁴⁴ The key factor distinguishing qualification between the two permits is the siting of the proposed living shoreline. The Group 2 Permit provides opportunities to utilize an array of materiality and, most significantly, allows living shorelines to be constructed outside of the intertidal zone on the bottomlands.⁴⁵ Regulations set forth the mandatory qualifications for a project to be considered for each type of permit and the process by which to do so, including factors to consider when designing such as fetch calculations, the ideal composition of sand, vegetation selection, and a permittee's obligation to minimize impacts on wetlands, oysters, and shellfish.⁴⁶

Understanding the rules of design and placement for permitting, such as avoiding impacts to fisheries, navigation channels, wetlands, submerged aquatic vegetation (SAV) populations, and neighboring properties,⁴⁷ allows designers and permit applicants to design the best possible intervention and complete a quality application prior to submitting it for permit approval. Permit applications for installation of living shorelines in the nearshore must also take into consideration SAV beds, in quantity and quality, as SAV is in shorter supply than marshes.⁴⁸ It is important to consider the health and abundance of the SAV population, as this serves as a critical indicator of

⁴¹ Ch. 885 of the 2011 Acts of Assembly, <https://legacylis.virginia.gov/cgi-bin/legp604.exe?111+ful+CHAP0885>.

⁴² 4 VAC 20 Chapter 1300 (2017), [Virginia Administrative Code - Title 4. Conservation And Natural Resources - Agency 20. Marine Resources Commission - Chapter 1300. Living Shoreline Group 1 General Permit for Certain Living Shoreline Treatments Involving Tidal Wetlands.](#)

⁴³ 4 Va. Admin. Code 20-1330, Living Shoreline Group 2 General Permit for Certain Living Shoreline Treatments Involving Submerged Lands, Tidal Wetlands, or Coastal Primary Sand Dunes and Beaches, [Virginia Administrative Code - Title 4. Conservation And Natural Resources - Agency 20. Marine Resources Commission - Chapter 1330. Living Shoreline Group 2 General Permit for Certain Living Shoreline Treatments Involving Submerged Lands, Tidal Wetlands, or Coastal Primary Sand Dunes and Beaches.](#)

⁴⁴ 4 Va. Admin. Code 20-1300-30(C) (2017), Applicability and procedures, <https://law.lis.virginia.gov/admincode/title4/agency20/chapter1300/section30/>.

⁴⁵ 4 Va. Admin. Code 20-1330-30.

⁴⁶ See 4 Va. Admin. Code 20-1300-40, Living Shoreline Group 1 General Permit for Certain Living Shoreline Treatments Involving Tidal Wetlands, Specific criteria, [4VAC20-1300-40. Specific criteria](#) and 4 Va. Admin. Code 20-1330-40, Living Shoreline Group 2 General Permit for Certain Living Shoreline Treatments Involving Submerged Lands, Tidal Wetlands, or Coastal Primary Sand Dunes and Beaches, Specific criteria, <https://law.lis.virginia.gov/admincode/title4/agency20/chapter1330/section40/>.

⁴⁷ *Id.*

⁴⁸ Meeting with Mark Luckenbach, Assoc. Dean of Research & Advisory Services, Professor of Marine Science, Va. Institute of Marine Science, William & Mary, August 6, 2025.

overall ecosystem health (particularly in the Chesapeake Bay).⁴⁹ SAV provides vital habitat and food for numerous aquatic species, improves water quality, and helps stabilize shorelines.⁵⁰ Tracking its abundance and distribution also is essential for evaluating the effectiveness of restoration and protection efforts, so VMRC has issued guidance reflecting the need to avoid existing SAV beds when constructing measures that extend over bottomland so as not to encroach or cause unacceptable impacts.⁵¹ If a permit application or pre-application meeting identifies either SAV or leased bottomland in the area proposed for a living shoreline sill, VMRC, with VIMS' input, will work to minimize the project impacts on those habitats by reducing its footprint to the smallest size practicable before issuing a permit.⁵² There currently is no SAV mitigation banking authorized in Virginia, and the lack of such a regulatory framework for compensating for SAV impacts can pose a challenge for installation of living shorelines that extend beyond the MLW line. VIMS' preference in cases where erosion is taking place and a living shoreline would significantly impact SAV is to recommend that the property owner place a stone revetment along the eroding scarp adjacent to the upland.⁵³

As discussed above, the requirements for living shoreline design and installation in Virginia are contained in multiple VMRC regulations and guidance. Understanding the criteria by which something is determined to provide a public benefit is essential to knowing whether or not a project can be justified as such. For living shorelines, this can be evaluated on a case-by-case basis, factoring in geographic location, risk assessment, and the value of the benefit or relief provided. However, it would be helpful to have a baseline standard transparently shared with the public explaining how a living shoreline design is evaluated and deemed to serve the greater good. Once there is an understanding of how that public interest is measured, it can be determined whether or not various living shoreline approaches provide sufficient public benefit to justify the investment of public dollars on privately owned property.

⁴⁹ *Id.*

⁵⁰ Nat'l Oceanic & Atmospheric Admin. Fisheries, News, *Submerged Aquatic Vegetation: A Habitat Worth SAV-ing* (July 27, 2020), <https://www.fisheries.noaa.gov/feature-story/submerged-aquatic-vegetation-habitat-worth-sav-ing> (last visited Nov. 8, 2025).

⁵¹ Va. Marine Resources Comm'n, *Submerged Aquatic Vegetation (SAV) Guidance: Criteria Defining SAV Beds and Delineating Areas Where There is Potential for SAV Restoration 2* (2017), [Guidance for SAV beds and restoration final approved by Commission 7-22-17.pdf](#):

It shall be the Commission's policy to avoid authorization of any new structure, including aquaculture structures on unleased bottoms, and any new activity, or leasing oyster planting grounds on any SAV bed annually mapped by VIMS during at least 1 of the previous 5 years. Proposed encroachments or activities in SAV beds may be authorized by permit, if deemed acceptable, however, all mitigation measures to reduce impacts to SAV must be considered and compensation of SAV losses may be required. When projects and activities, or leasing, are deemed unacceptable to Commission staff considering the impacts on SAV beds or potential SAV restoration areas, the project and activity, or lease request, may be considered by the Commission at a public hearing. ... When determining whether to authorize a project and activity or lease oyster planting grounds in potential SAV restoration areas the Commission Staff shall consult with VIMS regarding the potential for the project and activity, or leasing to affect SAV restoration.

⁵² Email from Mark Luckenbach, Associate Dean, Va. Institute of Marine Science, Sept. 26, 2025 (on file with the author).

⁵³ *Id.*

IV. The Question of Using Public Funds for Coastal Resilience Projects that Protect Private Property

It is a commonly recognized principle that public funds, collected from the public at large, should not be used for projects intended to directly benefit private citizens or entities. For example, Article I, Section 11 of the Constitution of Virginia provides,

That the General Assembly shall pass no law whereby private property, the right to which is fundamental, shall be damaged or taken except for public use. No private property shall be damaged or taken for public use without just compensation to the owner thereof. A public service company, public service corporation, or railroad exercises the power of eminent domain for public use when such exercise is for the authorized provision of utility, common carrier, or railroad services. In all other cases, a taking or damaging of private property *is not for public use if the primary use is for private gain, private benefit, private enterprise, increasing jobs, increasing tax revenue, or economic development, except for the elimination of a public nuisance existing on the property.*⁵⁴

[Emphasis added.]

Further, Article VIII, Section 10 of Virginia’s Constitution provides that “No appropriation of public funds shall be made to any school or institution of learning not owned or exclusively controlled by the State or some political subdivision thereof...”⁵⁵ And Article I, Section 16 states that “[T]he General Assembly shall not ... pass any law requiring or authorizing any religious society, or the people of any district within this Commonwealth, to levy on themselves or others, any tax for the erection or repair of any house of public worship, or for the support of any church or ministry...”⁵⁶, while Article IV, Section 16 requires that “The General Assembly shall not make any appropriation of public funds ... to any church or sectarian society, or any association or institution of any kind whatever which is entirely or partly, directly or indirectly, controlled by any church or sectarian society. Nor shall the General Assembly make any like appropriation to any charitable institution which is not owned or controlled by the Commonwealth...”⁵⁷

The notion that tax revenue should not be used for the direct benefit of an individual or private entity seems fair and straight forward, but finding a uniform codified definition of “public benefit”, “public interest” or “public purpose” for federal funding programs proves surprisingly difficult. There is no definition of those terms included in the Office of Management and Budget’s

⁵⁴ Va. Const., art. I, Bill of Rights, § 11.

⁵⁵ Va. Const., art. VIII, Education, § 10.

⁵⁶ Va. Const., art. I, Bill of Rights, § 16.

⁵⁷ Va. Const., art. IV, Education, § 16.

Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.⁵⁸

The Federal Grant and Cooperative Agreement Act, which established criteria to enable federal agencies to distinguish between federal contracts, grants and cooperative agreements, requires:

Use of Grant Agreements.

Each executive agency shall use a type of grant agreement as the legal instrument reflecting a relationship between the Federal Government and a State or local government or other recipient whenever (1) the principal purpose of the relationship is the transfer of money, property, services, or anything of value to the State or local government or other recipient **in order to accomplish a public purpose of support or stimulation authorized by Federal statute**, rather than acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government and (2) no substantial involvement is anticipated between the executive agency, acting for the Federal Government, and the State or local government or other recipient during performance of the contemplated activity. [Emphasis added.]⁵⁹

That requirement is also applied in Section 6 of the Act to cooperative agreements where substantial involvement between the agency and recipient is anticipated during the period of performance.⁶⁰ The requirement has been codified in 31 U.S. Code 61:

§ 6101 – Definitions. “In this chapter - **(3)**“assistance”—

(A)means the transfer of anything of value **for a public purpose of support or stimulation authorized by a law of the United States**, including—

⁵⁸ 2 C.F.R. Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements For Federal Awards (89 Fed. Reg. 30136, Apr. 22, 2024). Those terms also are not included in the list of definitions on the Grants.gov federal website, but that website does include the following definition:

Grant Agreement - A legal instrument of financial assistance between a Federal awarding agency or pass-through entity and a non-Federal entity that, consistent with 31 U.S.C. 6302, 6304:

Is used to enter into a relationship the principal purpose of which is to transfer anything of value from the Federal awarding agency or pass-through entity to the non-Federal entity **to carry out a public purpose authorized by a law of the United States** (see 31 U.S.C. 6101(3)); and not to acquire property or services for the Federal awarding agency or pass-through entity's direct benefit or use.

Is distinguished from a cooperative agreement in that it does not provide for substantial involvement between the Federal awarding agency or pass-through entity and the non-Federal entity in carrying out the activity contemplated by the Federal award.

Does not include an agreement that provides only: (1) **Direct United States Government cash assistance to an individual**; (2) A subsidy; (3) A loan; (4) A loan guarantee; or (5) Insurance.

[Emphases added.] [Grant Terminology | Grants.gov.](#)

⁵⁹ Federal Grant and Cooperative Agreement Act § 5, 41 U.S.C. 504, Public Law No. 95-224 (02/03/1978), [Text - H.R.7691 - 95th Congress \(1977-1978\): Federal Grant and Cooperative Agreement Act of 1977 | Congress.gov | Library of Congress.](#)

⁶⁰ *Id.* Sec. 6.

- (i) financial assistance;
 - (ii) United States Government facilities, services, and property; and
 - (iii) expert and technical information; and
- (B) does not include conventional public information services or procurement of property or services for the direct benefit or use of the Government.
[Emphasis added.]⁶¹

The federal Bureau of Land Management expressed this notion well in a standard attachment to its financial assistance agreements:

Attachment 2 Justification for Use of Financial Assistance and Public Purpose (Financial Assistance versus Contract)

The Federal Grant and Cooperative Agreement Act (FGCAA) requires that a cooperative agreement must have a “public purpose of support or stimulation authorized by a law of the United States.” The concept of public purpose is the distinguishing factor between financial assistance programs and procurement contracts. This concept of public purpose is a critical element in financial assistance. The primary purpose must be to promote the general welfare, security, public health, safety, education, prosperity, or public convenience as authorized by a Federal Law.⁶²

The permissibility of the use of federal funds for resilience projects on privately owned property depends upon the terms of the authorizing statute and regulations: whether they restrict such use of the funds, or allow the exercise of discretion by the fund administrators in determining a public purpose, considering the grant program’s overall objectives, regulatory guidelines, and any special conditions.⁶³ There are numerous federally funded coastal resilience projects that include privately owned land and involve a variety of funding programs, such as the construction of sea walls or beach renourishment projects conducted by the U.S. Army Corps of Engineers and the elevation of houses in flood-prone areas funded by FEMA grants. Such projects often can be justified as generating broader community benefits, such as improved water

⁶¹ 31 U.S.C. 61 § 6101 (3).

⁶² U.S. Dept. of Interior, Bureau of Land Mgmt., [Attachment 2 Justification for Use of Financial Assistance and Public Purpose.pdf](#).

⁶³ See 2 CFR Part 200, *supra* n. 58, Subpart A—Acronyms and Definitions, § 200.202 Program planning and design (“(a) The Federal agency [the agency that provides a federal award directly to a recipient] must design a program and create an Assistance Listing before announcing the Notice of Funding Opportunity. A program must be designed: (1) With clear goals and objectives that provide meaningful results and *be consistent with the Federal authorizing legislation of the program...*” (emphasis added)). See also 2 C.F.R. § 200.205, Federal agency review of merit of proposals (“*Unless prohibited by Federal statute*, the Federal agency must design and execute a merit review process of applications for discretionary Federal awards. The objective of a merit review process is to select recipients most likely to be successful in delivering results *based on the program objectives* as outlined in section § [200.202](#). A merit review is an objective process of evaluating Federal award applications *in accordance with the written standards of the Federal agency.*” (Emphases added.)). See also Cong. Rsch. Serv., Conditioning Federal Grant Awards: Understanding Grant Agreements, Amendments, and Terminations (Feb. 21, 2025), https://www.congress.gov/crs_external_products/IF/PDF/IF12926/IF12926.30.pdf IF12926.30.pdf.

quality, avoidance of the loss of human life, and reduction in the number of repeated rebuilding projects funded by the National Flood Insurance Program (NFIP).

An example of the use of federal funding for resilience projects involving private property is the grant programs of the National Fish and Wildlife Foundation (NFWF), a nonprofit organization created by Congress. NFWF receives appropriations through federal agencies⁶⁴ and donations from individuals, corporations and foundations,⁶⁵ which they distribute through various grant programs to support fish, wildlife, plant and habitat conservation projects.⁶⁶ These grants can be spent on private property in certain circumstances; for example, in 2021, the Virginia Department of Conservation and Recreation’s (DCR) Shoreline Erosion Advisory Service (SEAS) received a \$1 million grant from NFWF for installation of living shorelines in rural areas,⁶⁷ and in 2024 the Colonial Soil and Water Conservation District received an almost \$1 million NFWF grant to design and construct approximately 5,200 linear feet of living shorelines on agricultural lands located in Charles City County, Virginia.⁶⁸

Another example is the NOAA National Marine Fisheries Service (NMFS) “Transformational Habitat Restoration” grant program. In 2024 the NMFS’ Office of Habitat Conservation funded a living shoreline project, *Transforming the Scale and Equity of Living Shorelines in South Carolina*.⁶⁹ The grant was awarded to the South Carolina office of The

⁶⁴ See U.S. Fish & Wildlife Service, Grants and Other Financial Support, 903 FW 2 (Jan. 4, 1994), [Grants and Other Financial Support | U.S. Fish & Wildlife Service](#) (last visited Nov. 8, 2025); and Nat’l Oceanic & Atmospheric Admin., Partnerships, *All Federal & State Partners* ([National Oceanic and Atmospheric Administration | NFWF](#)) (last visited Nov. 8, 2025).

⁶⁵ See, e.g., the Shell Marine & Wildlife Habitat Program, funded by a NFWF-Shell Oil partnership created in 1998 “to conserve priority habitats and species in the communities where Shell USA lives and operates.” Nat’l Fish & Wildlife Found., All Corporate Partners, Shell USA, [Shell USA | NFWF](#) (last visited Nov. 8, 2025). See also Nat’l Fish & Wildlife Found., All Programs, the ConocoPhillips SPIRIT of Conservation Program, [ConocoPhillips SPIRIT of Conservation Program | NFWF](#) (a program focused on improving habitat for migratory and non-migratory bird populations) (last visited Nov. 8, 2025).

⁶⁶ For more information, see Nat’l Fish & Wildlife Found., *Financial Statements, Report of Independent Certified Public Accountants and Reports on Compliance in Accordance with the Uniform Guidance* (September 30, 2024 and 2023), [Microsoft Word - 2024 National Fish and Wildlife Foundation UG.docx](#).

⁶⁷ See Va. Dept. of Conservation & Recreation Media Center-Press Release, *DCR receives \$1 million grant to spur implementation of living shorelines across Rural Coastal Virginia* (July 22, 2021), [Press Releases](#) (“The grant was awarded by NFWF and the U.S. Environmental Protection Agency through the Innovative Nutrient and Sediment Reduction Grant Program, a core program under NFWF’s Chesapeake Bay Stewardship Fund promoting community-based efforts to protect and restore the diverse natural resources of the Chesapeake Bay.”).

⁶⁸ Robyn Woolsey, Colonial Soil & Water Conservation Dist., *Request for Proposals: Design Services for Shoreline Stabilization / Living Shoreline Projects in Charles City County, Virginia* (Dec. 12, 2024), [Request for Proposals: Design Services for Shoreline Stabilization / Living Shoreline Projects in Charles City County, Virginia](#).

⁶⁹ See Nat’l Oceanic & Atmospheric Admin. Fisheries, News, *Ambitious Living Shoreline Project Combats Coastal Land Loss in South Carolina* (July 1, 2024), [Transforming the Scale and Equity of Living Shorelines in South Carolina](#) (“This project will expand and significantly scale up the use of nature-based solutions along the entire coastline of South Carolina. The project will accelerate existing efforts to implement living shoreline projects in underserved communities and develop a plan to address statewide coastal risks in using large-scale nature-based solutions. It will also construct a living shoreline demonstration project at Marine Corps Air Station Beaufort. The project will collaborate with the Gullah Geechee Cultural Heritage Commission to support a community ambassador program for living shorelines.”). As part of this TNC project, there also is a homeowner living shoreline assistance program offered by the South Carolina Office of Resilience. *Id.*

Nature Conservancy to install a large living shoreline on a federal air force base and provide assistance for low-income landowners in implementing living shorelines on their properties, including members of the Gullah Geechee community.⁷⁰ Another 2024 NMFS grant, *Oyster Reef Restoration on Sapelo Island for Coastal Hazard Protection and Multiple Benefits*, was awarded to the University of Georgia in partnership with local community organizations and is focused on restoration of oyster reefs and salt marshes around a Gullah Geechee community.⁷¹ Discussions with NFWF and NOAA staff indicate that staff administering these grants exercise discretion in assessing the public benefit of applicants' projects and there is not a specific definition of "public benefit" that they apply.⁷²

Another NMFS-funded project involving private property was the Hennepin Marsh restoration project in the Detroit River in Michigan, which occurred on a property selected for its very productive wetlands in "one of the most important remaining habitats for fish and wildlife in Michigan waters of the Detroit River."⁷³ The funding came to NMFS from the U.S. Environmental Protection Agency's Great Lakes Restoration Initiative, a multi-year regional partnership with the Friends of the Detroit River.⁷⁴

In addition, state living shoreline assistance programs that are funded with federal Clean Water Act Section 319⁷⁵ funds can provide funding to individual property owners.⁷⁶ These grant funds are distributed by the U.S. EPA to states, territories and tribes to support their nonpoint

⁷⁰ *Id.*

⁷¹ See Institute for Resilient Infrastructure Systems, Univ. of Ga., *Collaborative Coastal Restoration on Sapelo Island, Oyster Reef Restoration on Sapelo Island for Coastal Hazard Protection and Multiple Benefits* (last visited Nov. 8, 2025) ("This project will work with community members and local partners to restore oyster reefs and salt marshes around the Gullah Geechee community of Hogg Hummock on Sapelo Island, Georgia. Using natural and nature-based features, this work will both restore essential fish habitat and increase community flood protection. Engagement with community members in collaborative habitat restoration design will help to improve the multiple benefits to the community.").

⁷² Email correspondence with Jake Reilly, Director of Chesapeake Bay Programs, Nat'l Fish & Wildlife Found., Aug. 1, 2025 (noting that all projects, especially those occurring on private lands, must provide a clear public benefit but there is no official definition or NFWF guidance on the concept of public benefit) (on file with the author); and meeting with NOAA Office for Coastal Management staff, Aug. 12, 2025 (noting that all NOAA-funded projects must provide a greater public benefit, but there is no official or singular definition or guidance for what is deemed to be "public benefit" if a project occurs on private land; and that if there is not a statutory prohibition about the use of NOAA program funds for specific purposes, there may be policies applicable to the specific funding program - for example, the Coastal Zone Management 306(A) grant program has written guidance that has some discretion written into it for some related activities).

⁷³ Friends of the Detroit River, Our Work, *Hennepin Marsh*, [Hennepin Marsh — Friends of the Detroit River](#) (last visited Nov. 8, 2025) ("This project was identified in the 2002 Habitat Protection and Remediation, Detroit River: Final Completion Report for U.S. Environmental Protection Agency by Dr. Bruce Manny. It ranked 5th among 20 functional candidate sites under private ownership that could benefit from habitat protection in the Detroit River.").

⁷⁴ *Id.*

⁷⁵ 33 U.S.C. 26 § 1329, [USCODE-2010-title33-chap26-subchapIII-sec1329.pdf](#).

⁷⁶ For more information, see U.S. Eno't Prot. Agency, 319 Grant Program for States & Territories, [319 Grant Program for States and Territories | US EPA](#); CWA §319 Grant: Current Guidance, [CWA §319 Grant: Current Guidance | US EPA](#); and Nonpoint Source Program and Grants Guidelines for States and Territories, EPA 841-R-24-009 (May 4, 2024), [Nonpoint Source Program and Grants Guidelines for States and Territories \(EPA 841-R-24-009\)](#) (all last visited Nov. 8, 2025).

source pollution programs, for purposes including “technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects.”⁷⁷ Although the funds can be provided to individual landowners, there is arguably a general public interest involved in reducing nonpoint source pollution that is difficult to track because it is not discharged by a point source. In Delaware, staff of the Department of Natural Resources and Environmental Control (DNREC) noted that they have used these funds for an educational living shoreline demonstration project, which provides an even greater public benefit. The program distributes funds through a soil and water conservation district or a local nonprofit organization to the landowner, who gets the appropriate permit and hires the contractor. DNREC normally uses a landowner agreement to obtain temporary access to check that the living shoreline was installed properly, and then notifies the conservation district or nonprofit that they can release the funds; in the case of the demonstration project, they used the agreement to obtain a five-year right to inspect the project.⁷⁸ See **Appendix I**, Template Delaware Grant Agreement Between DNREC and Project Partner and Living Shoreline Cost Share Program Guidelines.

In another example, in Louisiana, wetlands restoration and protection projects on private property are conducted using various federal funding sources, including pursuant to the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA).⁷⁹ Funding for CWPPRA comes from the federal Sport Fish Restoration and Boating Safety Trust Fund, which is supported by a portion of the gasoline tax attributable to motorboats and small engines and taxes on a variety of sport fishing-related goods.⁸⁰ The Louisiana Coastal Protection and Restoration Authority serves as the local cost-share partner that matches 15% of CWPPRA’s federal funding for approved projects,⁸¹ and the U.S. Army Corps of Engineers administers the accounting and tracks project status of all CWPPRA projects.⁸²

Finally, Coastal Zone Management Act Section 306A⁸³ Resource Management Improvement Grants can be used for, among other things, the preservation or restoration of

⁷⁷ U.S. Env’t Prot. Agency, [319 Grant Program for States and Territories | US EPA](#).

⁷⁸ Meeting with Alison Rogerson, Environmental Scientist, Watershed Assessment and Management Division, Delaware Dept. of Natural Resources & Env’t Control (DNREC), August 6, 2025; and meeting with Tyler Brown, Environmental Program Administrator, DE DNREC Div. of Watershed Stewardship, Conservation Programs Section, Aug. 26, 2025. Mr. Brown noted that Section 319 grant funds are used for several hundred projects a year, 80-90% of which are on private lands. The projects include installation of living shorelines and agricultural best management practices that help to meet the State’s Chesapeake Bay Total Maximum Daily Load Watershed Improvement Plan goals, such as cover crop programs and stream restoration projects.

⁷⁹ Coastal Wetlands Planning, Protection and Restoration Act, Pub. Law 101-646, Title III (1990), [16 U.S. Code Chapter 59A - WETLANDS | U.S. Code | US Law | LII / Legal Information Institute](#).

⁸⁰ U.S. Geological Survey Wetland & Aquatic Research Center, [About CWPPRA](#) (last visited Aug. 27, 2025).

⁸¹ *Id.*

⁸² U.S. Army Corps of Engineers, Coastal Wetlands Planning, Protection and Restoration Act, [New Orleans District > Missions > Environmental > CWPPRA](#) (last visited Nov. 8, 2025).

⁸³ 16 U.S.C. § 1455a, Coastal Resource Improvement Program, [The National Coastal Zone Management Program](#).

specific coastal areas that are recognized for their conservation, recreational, ecological, or aesthetic values, or contain one or more coastal resources of national significance, or provide access to public beaches and other public coastal areas and to coastal waters.⁸⁴ In contrast to some other federal grant programs, the applicable NOAA program guidance⁸⁵ does contain Public Benefit Standards, which include:

2.4.1 Publicly Owned Land

Section 306A funds should only be used for projects on publicly owned or leased land, or public land for which an easement is obtained. For projects that are partially or fully undertaken in submerged or tidal public trust lands, adjacent uplands should be publicly held and accessible to the public, in most situations.

2.4.2 Private Property Restriction

Section 306A funds are for public benefit and may not be used to improve private property or for other private enterprises (including non-profit property or enterprises).

2.4.7 Incidental Private Benefits. Secondary or incidental benefits to commercial, private, or non-profit entities that accrue from Section 306A projects may be allowed so long as the secondary or incidental commercial, private, or non-profit benefits do not interfere with the primary purpose of the project or requirements of this guidance, and public uses and benefits are not diminished.

And NOAA's §306(a) grant Checklist Questionnaire⁸⁶ states:

3. Public Benefit

The project must meet all of the following criteria to be eligible for 306A funding:

a. The project will be for public benefit. YES NO

b. The project will be located on a property that is publicly owned or accessible via a publicly held easement. In the case of acquisition, the property will become publicly owned and accessible as a result of the project. YES NO

c. The project will not improve private property and will not have a primary purpose of private or commercial gain. YES NO

If the answer to any of the above questions is "NO," the project is not eligible for Section 306A funding.

d. The state or sub-recipient will need to secure an easement or lease to conduct the project because the state or sub-recipient does not own the property. YES NO

If the answer to the above question is "YES," attach a copy of the easement or lease to this questionnaire and answer questions 3e and 3f below; if "NO," go on to 3g.

⁸⁴ 16 U.S.C. § 1455(b)(1), Protecting Coastal Waters.

⁸⁵ Nat'l Oceanic & Atmospheric Admin., Final Section 306A Guidance (April 2025), [Final Section306A Guidance Updated April 2025](#).

⁸⁶ *Id.*, Appendix I.

e. What is the term of the easement or lease? (Provide date of expiration or specify if in perpetuity): Click to enter text.

f. The easement or lease contains a reversionary clause. YES NO N/A
If yes, attach a copy of the reversionary clause to this questionnaire.

g. The project will be open to the general public. YES NO N/A

If the answer to 3g is “NO,” the project is not eligible for Section 306A funding unless access is to be limited for a legitimate reason, such as public safety, resource restoration or protection, or scientific research. **Attach an explanation for why the project will not be open to the public and describe the public benefits that would be provided by the project in absence of the project being open to the general public. For example, a rain garden or living shoreline may provide water quality and ecosystem benefits, but not be “open” to the public for the purposes of access or recreation.**

[Emphases added.]

This guidance makes it clear that providing a public benefit is a requirement for CZMA 306A grant funded projects. Even when discussing other grant programs that may not include such clear requirements, agency staff interviewed for this project often referred to a “greater benefit” gained from shoreline stabilization projects constructed on individual properties. Although it is difficult to find specific, uniform definitions or minimum criteria for the “public benefit” that is sufficient to justify the use of public funds for coastal resilience projects occurring on private property, the public trust doctrine may provide additional rationale for the use of public funds in these settings.

V. The Public Trust Doctrine as Potential Justification for Use of Public Funds for Shoreline Stabilization Projects that Benefit Private Property

The Public Trust Doctrine is a very old concept, inherited from Roman civil law. It states that the natural resources – the air, the water, and the shoreline or beach - are held in common by the people for use by all, not owned by individuals. It was adopted into English Common law but altered such that the Crown held the resources in trust for the people.⁸⁷

There is common law at the federal and state level establishing the concept of the public trust doctrine. In Virginia, the doctrine was adopted from English Common Law with the General Assembly as the entity holding natural resources in trust for the people.⁸⁸ It is set forth in

⁸⁷ See generally Cornell Law School Legal Information Inst., Public Trust Doctrine, [public trust doctrine | Wex | US Law | LII / Legal Information Institute](#) (last visited Nov. 8, 2025), and Nat’l Agricultural Law Ctr., *The Public Domain: Basics of the Public Trust Doctrine*, [The Public Domain: Basics of the Public Trust Doctrine – National Agricultural Law Center](#) (last visited Nov. 8, 2025).

⁸⁸ See *Martin v. Waddell*, 41 U.S. 367 (1842) (noting that, when the American Revolution took place, the people of each state became themselves sovereign and held title to submerged lands formerly owned by the Crown for their own common use). For more information on application of the public trust doctrine in Virginia, see, e.g., Reeana Keenen, *Riparian Rights and Public Trust: Enforcement Authority* (Va. Coastal Policy Ctr. 2018), ["Riparian Rights and Public Trust: Enforcement Authority" by Reeana Keenen](#).

the state constitution, statute and common law (case law). Article XI of the Constitution of Virginia, Section 1, Natural resources and historical sites of the Commonwealth, states:

To the end that the people have clean air, pure water, and the use and enjoyment for recreation of adequate public lands, waters, and other natural resources, it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources, its public lands, and its historical sites and buildings. Further, it shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment, or destruction, *for the benefit, enjoyment, and general welfare of the people of the Commonwealth.*⁸⁹ [Emphasis added.]

The doctrine is also set forth in Article XI, Section 3, Natural oyster beds:

The natural oyster beds, rocks, and shoals in the waters of the Commonwealth shall not be leased, rented, or sold *but shall be held in trust for the benefit of the people of the Commonwealth, subject to such regulations and restriction as the General Assembly may prescribe*, but the General Assembly may, from time to time, define and determine such natural beds, rocks, or shoals by surveys or otherwise.⁹⁰ [Emphasis added.]

In addition, the public trust doctrine has been codified concerning state-owned bottomland:

§ 28.2-1200. Ungranted beds of bays, rivers, creeks and shores of the sea to remain in common.

All the beds of the bays, rivers, creeks and the shores of the sea within the jurisdiction of the Commonwealth, not conveyed by special grant or compact according to law, shall remain the property of the Commonwealth and may be used as a common by all the people of the Commonwealth for the purpose of fishing, fowling, hunting, and taking and catching oysters and other shellfish. No grant shall be issued by the Librarian of Virginia to pass any estate or interest of the Commonwealth in any natural oyster bed, rock, or shoal, whether or not it ebbs bare.

The General Assembly has delegated authority to the VMRC to regulate the public bottomlands⁹¹, and the public trust doctrine is incorporated into a VMRC statute concerning permits for use of state-owned bottomlands:

§ 28.2-1205. Permits for the use of state-owned bottomlands.

A. When determining whether to grant or deny any permit for the use of state-owned bottomlands, the [Virginia Marine Resources] Commission shall be guided in its

⁸⁹ Va. Const. art. XI, Conservation.

⁹⁰ *Id.*

⁹¹ *See* Va. Code § 28.2-101, Jurisdiction of Commission.

deliberations by the provisions of Article XI, Section I of the Constitution of Virginia. In addition to other factors, the Commission shall also consider the public and private benefits of the proposed project and shall exercise its authority under this section consistent with the public trust doctrine as defined by the common law of the Commonwealth adopted pursuant to § 1-200 in order to protect and safeguard the public right to the use and enjoyment of the subaqueous lands of the Commonwealth held in trust by it for the benefit of the people as conferred by the public trust doctrine and the Constitution of Virginia.⁹²

Shoreline stabilization measures can benefit water quality by reducing severe erosion, and living shorelines in particular also provide habitat, can enable upland migration of wetlands in the face of sea level rise, and filter out pollutants using plants, oysters, biochar and other natural elements. It therefore could be argued that some shoreline stabilization projects provide sufficient public benefit to justify the use of public funds – such as a project involving a long stretch of coastline or a particularly severely eroding shoreline, or one that creates habitat for a threatened species. The State could argue that stopping shoreline erosion and protecting wetlands and water quality fall within its role under the public trust doctrine as the protector of the waters and shoreline that it holds in trust for the people. In fact, the VMRC generally takes that position when permitting a subtidal sill associated with an intertidal living shoreline.⁹³

VI. Examples of Shoreline Resilience Projects in Virginia that Encroach Upon the Intertidal Zone

There are multiple examples of projects in Virginia conducted by federal agencies or using federal funding to increase the resilience of private property. For instance, FEMA Hazard Mitigation Assistance grant funds are distributed to individual homeowners by the Virginia Department of Emergency Management (VDEM) to elevate homes in flood prone areas. VDEM enters into a Voluntary Participation Agreement (See **Appendix II**) with property owners before the project begins, as well as a Declaration of Nonconversion Agreement (See **Appendix III**) to ensure property owners do not convert portions of the structures below base flood elevation back into living space. The Declaration of Nonconversion Agreement states that the property owner(s) agree to the recordation of the agreement and places covenants, conditions and restrictions on the property that bind the owners and all heirs, successors and assigns.⁹⁴ VDEM requires that a local building official complete a Hazard Mitigation Assistance Program Elevation Compliance Record

⁹² Va. Code Ann. § 28.2-1205, Permits for the use of state-owned bottomlands.

⁹³ Email from Mark Luckenbach, Associate Dean, Va. Institute of Marine Science, Sept. 26, 2025 (on file with the author).

⁹⁴ Declaration of Nonconversion Agreement, **Appendix II** *infra*, and meeting with Debbie Messmer, Deputy Director, Grants Management and Recovery, Financial Management Bureau, Va. Dept. of Emergency Mgmt. (July 9, 2025).

(See **Appendix IV**), and per VDEM staff, there can be site visits that occur to ensure that properties maintain their required restrictions.⁹⁵

Additionally, the Ohio Creek Watershed Project in the City of Norfolk is a resilience project that involves private properties in two predominantly African American neighborhoods: Historic Chesterfield Heights, with over 400 houses on the National Register of Historic Places; and Grandy Village, which has a public housing community with over 300 units.⁹⁶ In 2016, the City entered the National Disaster Resilience Competition and was awarded a \$112 million federal grant from the U.S. Department of Housing and Urban Development (HUD); the Commonwealth was awarded Community Development Block Grant Disaster Recovery (CDBG-DR) funds in January 2017, and the City signed a subaward agreement in March 2017.⁹⁷ The project is designed to strengthen flood resiliency, support economic opportunity, and increase neighborhood connectivity, and includes coastal defense strategies such as earthen berms, raised roads, living shorelines, and floodwalls.⁹⁸ The Environmental Impact Statement for the project notes a larger public benefit:

Norfolk has identified factors that undermine the city's resilience and drive the need for the project. Those factors include the impact of increased flooding and increased threat from coastal storms coupled with projected sea level rise, the lack of economic vitality, and the concentration of poverty. While these needs are experienced citywide, the Ohio Creek watershed and Chesterfield Heights provide a microcosm for planning and implementation strategies that can be applied throughout the city, the nation, and the world.⁹⁹

Furthermore, in order to implement beneficial use of dredged material to protect communities from erosion and storm damage, the U.S. Army Corps of Engineers conducts beach nourishment projects in Virginia that can encroach upon the intertidal zone. For example, they conduct periodic beach restoration projects in the community of Sandbridge, which is part of the City of Virginia Beach.¹⁰⁰ The projects were conducted by the Corps but paid for by the City, including revenue generated by a Sandbridge Special Service District that was created in accordance with Code of Virginia, § 15.1-18.2(c)(1) to fund the local share of beach and

⁹⁵ Email from Debbie Messmer, Va. Dept. of Emergency Mgmt. (July 9, 2025) (on file with the author).

⁹⁶ City of Norfolk, Va., Office of Resilience, Ohio Creek Watershed Project, [Ohio Creek Watershed Project | City of Norfolk, Virginia - Official Website](#) (last visited Nov. 8, 2025).

⁹⁷ City of Norfolk, Va. and Va. Dept. of Housing & Community Devt., Ohio Creek Watershed Final Environmental Impact Statement (Jan. 2019) at ES-7, [Ohio Creek Watershed Project FEIS](#).

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ See U.S. Army Corps of Engineers, Norfolk Dist., Projects, *Sandbridge Beach Coastal Storm Damage Reduction Project* (June 6, 2019), <https://www.nao.usace.army.mil/About/Projects/SandbridgeHurricaneProtection/> (last visited Nov. 8, 2025).

shoreline management and restoration projects on the Atlantic Ocean.¹⁰¹ The Corps' Sandbridge Beach Coastal Storm Damage Reduction Project lessens risk through construction of a sacrificial beach berm with an average width of 50 feet and elevation of 6 feet over a 5-mile project area. The beach is a natural sacrificial barrier designed to absorb wave energy during coastal storms and naturally erode away over time, requiring maintenance through renourishment.¹⁰² In the absence of federal funding, the project is funded through a Contributed Funds Agreement with the City of Virginia Beach and uses 100% nonfederal funds.¹⁰³ The Corps does have federal cost share funding to conduct another renourishment of Sandbridge Beach that is scheduled to begin in 2027.¹⁰⁴

When conducting a beach nourishment project and maintaining a federal navigation project, the Corps enters into a Local Cooperation Agreement (LCA) with the local Non-Federal Sponsor (NFS) of the project. The LCA requires the NFS to provide all lands, easements, relocations and rights of way (LERRs) that are needed for the placement of the dredged material.¹⁰⁵ The Corps' Real Estate Division requires the acquisition of fee simple title for dredged material disposal and borrow areas required for future maintenance work; temporary easements may only be used for a small carve-out of projects: "disposal areas for all projects other than commercial navigation projects for a harbor or inland harbor if needed only to support construction."¹⁰⁶ A 2023 Corps Guidance Memo affirmed that fee title is still the minimum estate for dredged material placement areas required for future maintenance work, but authorized two scenarios for the use of a standard temporary work area easement for dredged material placement areas for a term not to exceed five years in lieu of fee simple acquisition: 1) to avoid imminent navigation channel closure and when it is more cost effective than using an existing perpetual placement area; and 2) in certain cases of beneficial use of dredged material (i.e., where there is no government responsibility for construction or operation and maintenance of the placement site, and no government ecosystem restoration project purpose) to supplement upland fee-owned dredged material placement areas in order to meet long-term annual dredging requirements.¹⁰⁷

¹⁰¹ See Protect Sandbridge Beach, About Us, <https://www.protectsandbridgebeach.org/about-us> ("Since its inception, the program has completed five beach renourishments, enhanced public access, restored roadways and upgraded utility services; all with local funding paid for by the property owners of Sandbridge Beach.").

¹⁰² See Corps, Sandbridge Beach, *supra* n. 100.

¹⁰³ *Id.*

¹⁰⁴ Email from Keith Lockwood, Chief, Water Resources Div., Norfolk Dist., U.S. Army Corps of Engineers, Sept. 18, 2025 (on file with the author).

¹⁰⁵ See U.S. Army Corps of Engineers, Planning Community Toolbox, Agreements, Local Cooperation Agreement (LCA) Guidance, [Planning Community Toolbox: Agreements](#), including Regulation No. 1150-2-301, Local Cooperation Policies and Procedures Ch. 1, Eng Form 1831 (Sept. 1, 1967), [C:MYDOCU~1JANECORPSECURITY STPAGE2.PDF](#).

¹⁰⁶ U.S. Corps of Engineers Real Estate Handbook, ER 405-1-12, Nov. 20, 1985, Chapter 12, Sections 12-9(b)(3) and (d)(2).

¹⁰⁷ U.S. Army Corps of Engineers, CEMP-CR Memo, "Minimum Real Property Interest for Upland Placement of Dredged Material from Federal Commercial Navigation Channels," May 24, 2023; email from Keith Lockwood, Chief, Water Resources Div., Norfolk Dist., U.S. Army Corps of Engineers, Dec. 5, 2025 (on file with the author).

The Corps formerly used rights of entry or temporary easements with up to a fifty-year term, but have shifted to using perpetual easements or fee simple acquisition, which takes more time and has slowed progress on projects.¹⁰⁸

Another Corps-conducted beach nourishment project in Virginia is the beach restoration project at Willoughby Spit in Norfolk, which served as the NFS. Completed in 2017, the Willoughby And Vicinity Storm Damage Reduction Project included placing 1.2 million cubic yards of sand along 7.3 miles of shoreline, widening the beach to 60 feet and creating a slope to 5 feet above mean low water.¹⁰⁹ The project was funded through a cost share agreement with the City of Norfolk, using 65% federal funds and 35% nonfederal funds.¹¹⁰ The City, as the NFS, either owned or had obtained easement access to the upland areas necessary to provide access to the project and receive the beach fill material.¹¹¹ An Authorization For Entry For Construction¹¹² was used to give the Corps permission to construct the project.

An additional example of a Corps-conducted shoreline project in Virginia that includes the intertidal zone is the placement along the shoreline on the northwest side of the Uppards portion of Tangier Island (on a beach owned by Accomack County) of material dredged from the Tangier Channels.¹¹³ Since the County owns the property, real estate acquisition is not necessary and the Corps can use a five-year Authorization for Entry for Construction to provide them with the right to access the material placement site area.¹¹⁴ The Corps also has placed dredged material from another project in Accomack County, Quinby Creek, in a nearshore area along the marsh below the MLW line, because there was no viable upland placement site location.¹¹⁵

Living shoreline funding assistance also is provided by the Commonwealth from a variety of federal funding sources. The Virginia Clean Water Revolving Loan Fund (VCWRLF) provides low-interest loans to local governments for establishing living shorelines themselves or establishing a local government funding program for individual citizens to establish living shorelines on their properties.¹¹⁶ The Department of Environmental Quality (DEQ), on behalf of

¹⁰⁸ Meeting with Keith Lockwood, Chief, Water Resources Div., U.S. Army Corps of Engineers, Norfolk Dist. (July 16, 2025); December 5 email from Keith Lockwood, *supra* n. 107.

¹⁰⁹ U.S. Army Corps of Engineers, Norfolk Dist., Willoughby Spit & Vicinity Coastal Storm Damage Reduction Project, [Willoughby Spit & Vicinity Coastal Storm Damage Reduction Project](#) (last visited Nov. 8, 2025).

¹¹⁰ September 18 email from Keith Lockwood, *supra* n. 104.

¹¹¹ See U.S. Army Corps of Engineers, Norfolk Dist., Appendix D, [REAL ESTATE PLAN](#), at 8.

¹¹² *Id.* at 9.

¹¹³ See U.S. Army Corps of Engineers, Norfolk Dist., Tangier Channels Federal Navigation Project (Feb. 16, 2018), [Tangier Channels Federal Navigation Project > Norfolk District > Tangier Navigation Channel](#) (last visited Nov. 8, 2025). See also September 18 email from Keith Lockwood, *supra* n. 104.

¹¹⁴ Email from Keith Lockwood, Chief, Water Resources Div., Norfolk Dist., U.S. Army Corps of Engineers, Aug. 15, 2025 (on file with the author).

¹¹⁵ *Id.* See also U.S. Coast Guard, News Release, *USCG, USACE joint effort improves Quinby Creek access in Accomack County, Va.* (Feb. 24, 2017), [USCG.USACE joint effort improves Quinby Creek access in Accomack County, Va.](#) (last visited Nov. 8, 2025).

¹¹⁶ Va. Dept. of Env'tl Quality, Living Shorelines, [Living Shorelines | Virginia DEQ](#) (last visited Nov. 8, 2025). See also Va. Dept. of Env'tl Quality, Virginia Clean Water Revolving Loan Fund LIVING SHORELINES

the State Water Control Board, manages the VCWRLF. The U.S. Environmental Protection Agency (EPA) provides grants to all 50 states to capitalize state Clean Water State Revolving Fund (CWSRF) loan programs, with the states contributing an additional 20 percent to match the federal grants.¹¹⁷ The VCWRLF also funds shoreline stabilization practices through its Agricultural Best Management Practices Cost Share Program, as seen in the Berkeley Plantation Living Shoreline project, which stabilizes over 1,500 feet of shoreline along a working agricultural landscape, improves water quality in the James River, and provides wildlife habitat.¹¹⁸ The project, which was a collaborative effort of the James River Association, the Colonial Soil and Water Conservation District, DCR SEAS, and DEQ, cost \$895,000 and was supported by funding from the Virginia Agricultural Best Management Practice Cost-Share Program and a grant from the National Fish and Wildlife Foundation’s Innovative Nutrient and Sediment Reduction program funded by the EPA and Altria Group.¹¹⁹ The DEQ Agricultural Best Management Practice Loan Program, a subsidiary of the VCWRLF, provided a zero-interest loan to the property owner for construction.¹²⁰

The Virginia Conservation Assistance Program (VCAP) also provides grant funding for conservation practices including living shorelines, and it is administered by soil and water conservation districts, similar to Delaware’s program. Funding is provided to landowners to reimburse them for 80% of the cost of installation of living shorelines, with a maximum payment of \$30,000.00.¹²¹ The landowner undertakes the project, hiring the contractor and obtaining the permit, and agrees to allow agency personnel to have access to the property throughout the required lifespan of the project for evaluation, design, construction and inspection.¹²² Completion

LOAN PROGRAM GUIDELINES, State Water Control Board (April 2016, Revised June 2019), [Living Shorelines Loan Program Guidelines](#) and Virginia Clean Water Revolving Loan Fund (VCWRLF), [Virginia Clean Water Revolving Loan Fund \(VCWRLF\) | Virginia DEQ](#) (last visited Nov. 8, 2025). For example, the Middle Peninsula Planning District Commission has used VCWRLF fund to create a Living Shoreline Revolving Loan Program for homeowners in its region. *See* U.S. Env’t Prot. Agency, [Living Shorelines Resiliency Loan Program CWSRF Case Study](#) (last visited March 8, 2026). Individual landowners also can get loans for other nonpoint source pollution reduction projects such as agricultural BMPs and decentralized wastewater treatment systems. *See, e.g.*, Va. Dept. of Env’t Quality, Agricultural BMP, [Agricultural BMP | Virginia DEQ](#) (last visited Nov. 8, 2025).

¹¹⁷ U.S. Env’t Prot. Agency, About the Clean Water State Revolving Fund, [About the Clean Water State Revolving Fund \(CWSRF\) | US EPA](#) (last visited Nov. 8, 2025).

¹¹⁸ James River Assoc., Press Release, *Partnership makes waves with innovative approach* (June 26, 2024), [Press Release: Partnership makes waves with innovative approach | James River Association](#).

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ Va. Ass’n of Soil & Water Conservation Dist., Living Shorelines, [Living Shorelines - Virginia Association of Soil and Water Conservation Districts](#) (last visited Nov. 8, 2025).

¹²² *See* Va. Ass’n of Soil & Water Conservation Dist., Va. Conservation Assistance Program Contract (Part I - Application for Program) (“I agree to install and maintain all practices receiving financial incentives according to Program Specifications required at the time of installation/ payment approval of my application by the Board of Directors of the local Soil and Water Conservation District (the “Board”). I agree to allow appropriate agency personnel or their designee access to land under my control for the purpose of evaluation, design, construction and inspection of said practice(s) from this date forward through the required lifespan.”), https://vaswcd.org/wp-content/uploads/2025/06/VCAP_PY26_Part-I_Applicant-Contract_Fillable.pdf. *See also* Va. Ass’n of Soil & Water Conservation Dist., Va. Conservation Assistance Program Implementation and Design Manual, PY 2025, at 7 (“The

of a Living Shoreline Design Checklist by the DCR Shoreline Erosion Advisory Service (SEAS) or VIMS staff is required, including questions concerning the existence of a monitoring and maintenance plan that assesses the structural effectiveness, functional success, and overall stability of the project over the VCAP 10-year practice lifespan and indicates who is responsible (the landowner or their contracted agent) for conducting periodic inspections and implementing remedial actions.¹²³ The Checklist also includes a question as to whether the monitoring and maintenance plan includes a schedule for monitoring and reporting, including frequency of inspections.¹²⁴ The funding for the VCAP grants comes from an appropriation to the Virginia Department of Conservation and Recreation, with funding derived from the Water Quality Improvement Fund.¹²⁵ DEQ also provides funding to support the administrative costs of the VCAP, using federal funding from the Chesapeake Bay Regulatory and Accountability Program (CBRAP) and the Virginia Chesapeake Bay Implementation Grant (CBIG).¹²⁶

In addition, DEQ provides annual, noncompetitive grants to the fifteen Planning District Commissions within the Chesapeake Bay watershed to enable them to continue their Chesapeake Bay Total Maximum Daily Load (TMDL) Phase III Watershed Implementation Plan (WIP III)

participant is responsible for the maintenance of the BMP for the entire lifespan of the practice, regardless of changes in the ownership of the land. Lifespan start date begins January 1st of the year following Steering Committee approval of payment request. The Operation and Maintenance Plan further describes the participant's obligations to maintain the BMP. Maintenance agreements between the involved parties are acceptable but ultimate responsibilities still rest with the participant. In cases where a change in ownership of the land occurs, such as the sale of the property, or any changes in lease agreements, the participant may cancel the contract and repay a pro-rated cost share amount or complete an Agreement Transferring BMP Responsibility (Form 4) to transfer the contract and associated maintenance responsibility to the new owner. If this form is not completed, the original participant continues to be the responsible party regardless of ownership of the subject property.”), [7 VCAP Manual IX 07.2024 - 06.2025.pdf | Powered by Box.](#)

¹²³ Va. Ass'n of Soil & Water Conservation Dist., VCAP Living Shoreline Design Review Checklist version 20240503, at 11-12, [VCAP-Living-Shoreline-Design-Checklist_for-Contractors.pdf](#).

¹²⁴ *Id.*

¹²⁵ See Va. State Budget 2025, Chapter 725 of the Acts of Assembly, Item 359(P1), [Item 359 \(DCR\) Land and Resource Management. HB1600 - Chapter 725](#), and Va. Code § 10.1-2128.A, Virginia Water Quality Improvement Fund established; purposes (“...The Fund shall also consist of such other sums as may be made available to it from any other source, public or private, and shall include any penalties or damages collected under this article, federal grants solicited and received for the specific purposes of the Fund, and all interest and income from investment of the Fund. ...”).

¹²⁶ Email from Maura Christian, Chesapeake Bay Outreach Coordinator, Office of Watersheds & Local Government Assistance, Va. Dept. of Env't Quality, Sept. 16, 2025 (on file with the author). The Virginia Chesapeake Bay Implementation Grant (CBIG) is funded through the U.S. Environmental Protection Agency's Chesapeake Bay Program Office and is authorized under Section 117(e)(1)(A) of the Clean Water Act. Grants under this program are awarded non-competitively to any watershed jurisdiction that has signed the 2014 Chesapeake Bay Watershed Agreement, with the purpose of implementing the management mechanisms established under the Bay Agreement and an emphasis on state programs for control and abatement of nonpoint source nutrient and sediment pollution. *Id.*

The Chesapeake Bay Regulatory and Accountability Program (CBRAP) grant is part of Virginia's overall effort for Chesapeake Bay restoration, complementing existing regulatory, incentive-based grant programs. The Virginia CBRAP Grant is funded through the EPA Chesapeake Bay Program Office and aids the Bay watershed states and Washington, D.C. in implementing and expanding their regulatory, accountability, assessment, compliance, and enforcement capabilities in support of reducing nitrogen, phosphorus and sediment loads delivered to the Bay. *Id.*

work with localities and local stakeholders, including the installation of living shorelines that would need to be reported in the Virginia Best Management Practices (BMP) Warehouse for credit in the Chesapeake Bay Model.¹²⁷ DEQ also received a five-year EPA Assistance Award through the Infrastructure Investment Jobs Act (IIJA) to provide grants that were authorized under the same Section 117(e)(1)(A) of the Clean Water Act as the CBRAP grant; those grants can be used to implement BMPs in the EPA-designated Most Effective Basins (MEBs) for nutrient reductions to the Chesapeake Bay.¹²⁸ Supplemental funding for implementation not limited to the EPA-identified MEB listing was also provided for implementing practices designed to achieve water quality standards in the Chesapeake Bay, and PDCs and watershed roundtable organizations are eligible to apply for these funds to support the installation of living shorelines, among other projects.¹²⁹ DEQ also provides grants using Clean Water Act Section 319 funds to improve water quality in areas in the Chesapeake Bay watershed with EPA-accepted Implementation Plans, supporting BMPs that mirror VCAP practices.¹³⁰

All of these examples indicate that there are numerous federal and state funding sources that are spent to support resilience projects on private property. Such use hinges on the terms of the funding source's authorizing statute and implementing regulations. In addition, when public funding is used, there often is a public benefit sought beyond the interests of the private owner of a project site. On the Eastern Shore of Virginia, Camp Occohannock provides an example of a successful partnership between a private property owner, a nonprofit organization, and a public entity to conduct a project with public benefit beyond the private property owner's interests. The site is owned by the Eastern Shore District of the United Methodist Church, where grant funds were used by The Nature Conservancy (TNC) in partnership with VIMS to install a living shoreline on private property as both a shoreline stabilization measure and a demonstration project. In 2011, the Wildlife Conservation Society's Climate Adaptation Fund awarded \$149,744 to TNC to create climate change adaption demonstration projects on the Eastern Shore in order to inform the expansion and restoration of the Chincoteague National Wildlife Refuge.¹³¹ For one of those projects, TNC contracted with the Shoreline Studies Program at VIMS to develop a living shoreline plan for Occohannock on the Bay (a/k/a Camp Occohannock). VIMS led the construction of the living shorelines and was in charge of obtaining permits and hiring the contractor to do the work.¹³² The project involved a more than 1,000-foot living shoreline design and installation, including bank regrading and sand augmentation;

¹²⁷ *Id.*

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ Email from Justin Williams, Manager, Office of Watersheds & Local Govt. Assistance, Va. Dept. of Env't Quality, Aug. 16, 2025 (on file with the author). *See also* Va. Dept. of Env't Quality, Water Quality, Implementation Projects, [Implementation Projects | Virginia DEQ](#) (last visited Nov. 8, 2025).

¹³¹ Wildlife Conservation Society Climate Adaptation Fund, The Nature Conservancy, [The Nature Conservancy, VA 2011 — WCS Climate Adaptation Fund](#) (last visited Nov. 8, 2025).

¹³² Email from Jill Bieri, Director, Volgenau Va. Coast Reserve Program, The Nature Conservancy, Oct. 2, 2025 (on file with the author).

creation of a marsh terrace and four low rock sills; and approximately 20,000 square feet of marsh grasses planted.¹³³ Since it was a demonstration project to show a hybrid gray-green living shoreline, TNC has held education/outreach workshops and communications for landowners, regulators and contractors to encourage adoption of that approach, and they had a special focus on an easement for shoreline landowners to adopt and replicate.¹³⁴ TNC's visits to the site are coordinated with the Director of the Camp, who provides access permission.¹³⁵ This type of continuing public education provides an example of how other shoreline restoration projects on private property could provide a public benefit.

VII. Successful Shoreline Stabilization Projects Using Federal Funding in Other MLW States

In addition to Virginia, the states of Delaware, Maine, Massachusetts and Pennsylvania also use the MLW mark as their jurisdictional boundary for state-owned bottomlands. For this paper, research was conducted on shoreline stabilization projects in those states, how they handled encroachment into the intertidal zone, and how their public trust doctrines are enshrined and interpreted.

A) Delaware

Delaware's MLW jurisdictional delineation is set forth in its state code, in the Delaware Wetlands Act:

§ 6603. Definitions. (h) "Wetlands" shall mean those lands **above the mean low water elevation** including any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State along the Delaware Bay and Delaware River, Indian River Bay, Rehoboth Bay, Little and Big Assawoman Bays, the coastal inland waterways, or along any inlet, estuary or tributary waterway or any portion thereof, including those areas which are now or in this century have been connected to tidal waters, whose surface is at or below an elevation of 2 feet above local mean high water, and upon which may grow or is capable of growing any but not necessarily all of the following plants"¹³⁶ [Emphasis added.]

And in the Subaqueous Lands Act:

§ 7202. Definitions.

¹³³ Gwynn Crichton, Sr. Project Scientist, The Nature Conservancy, *Living Shorelines: A Coastal Resilience Strategy* (Dec. 2, 2013), <https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/virginia/Documents/Living%20Shorelines%20Camp%20Occ.pdf>.

¹³⁴ *Id.*

¹³⁵ Telephone conversation with Rev. Joel Coleman, Director of Camp Occohannock, Oct. 10, 2025.

¹³⁶ Delaware Wetlands Act, 7 Del. Code Annotated, § 6603 (2022), [Delaware Code Online](#).

(h) “Submerged lands” means:

(1) Lands lying **below the line of mean low tide** in the beds of all tidal waters within the boundaries of the State;

(2) Lands lying below the plane of the ordinary high water mark of nontidal rivers, streams, lakes, ponds, bays and inlets within the boundaries of the State as established by law; and

(3) Specific manmade lakes or ponds as designated by the Secretary.

(i) “Tidelands” means lands lying **between the line of mean high water and the line of mean low water**. [Emphasis added.]¹³⁷

Delaware’s public trust doctrine is enshrined in the common law, with courts establishing the public’s right to navigate and fish on submerged lands below the Mean High Water mark in tidal waters¹³⁸ and the State’s right to exercise its police powers in that area.¹³⁹ The Public Trust Doctrine also has been codified in the Delaware Subaqueous Lands Act: “Subaqueous lands within the boundaries of Delaware constitute an important resource of the State and require protection against uses or changes which may impair the public interest in the use of tidal or nontidal waters.”¹⁴⁰ The legislature has delegated authority to the Delaware Department of Natural Resources and Environmental Control (DNREC) to regulate uses of state-owned bottomland.¹⁴¹

A staff person from the DNREC Watershed Assessment and Monitoring Division said she knows of examples where federal funding from the EPA Chesapeake Bay Program is distributed to individual landowners, and noted that federal funds also can be distributed to property owners for living shoreline reimbursements from the State, using EPA Clean Water Act Section 319 funding and EPA Chesapeake Bay Implementation Grant funds.¹⁴² She said they have not tried to avoid privately owned intertidal zones by going out onto state-owned bottomland for shoreline stabilization projects, because it is too costly; they tend to use oyster castles at the MLW line, and install marsh sills when needed.¹⁴³

¹³⁷ Delaware Subaqueous Lands Act, 7 Del. Code Annotated, § 7202 (2022), [Delaware Code Online](#).

¹³⁸ See *Bickel v. Polk*, 1851 WL 602 (Del. Super. 1851) (first recognizing the public’s right to fish over privately owned submerged lands below the high water mark).

¹³⁹ *Groves v. Dep’t of Natural Res. & Envtl. Control*, 1994 WL 89804, at 6 (Del. Super. 1994) (recognizing “the State’s police power, including the protection of life, health, comfort, and property or the promotion of public order, morals, safety, and welfare” among the purposes for which the State holds public trust lands).

¹⁴⁰ Delaware Subaqueous Lands Act, 7 Del. Code Annotated, § 7201 (2022), [Delaware Code Online](#).

¹⁴¹ Delaware Subaqueous Lands Act, 7 Del. Code Annotated, § 7203 (2022), [Delaware Code Online](#).

¹⁴² Meeting with Alison Rogerson, *supra* n. 78. See also DNREC, Living Shoreline Cost Share Program, <https://dnrec.delaware.gov/watershed-stewardship/wetlands/living-shorelines/cost-share/> (last visited Nov. 8, 2025).

¹⁴³ Meeting with Alison Rogerson, *supra* n. 78.

When a project is funded through Delaware’s living shoreline 50% cost share program, there is an agreement between the landowner and the DNREC Conservation Section, with the landowner responsible for getting the work done and getting permits and DNREC getting a five-year right of entry to check on the project.¹⁴⁴ (See **Appendix I**, Template Delaware Grant Agreement Between DNREC and Project Partner and Living Shoreline Cost Share Program Guidelines.) There are maintenance funds set aside in the living shoreline cost assistance program, and DNREC reimburses landowners for plants and installation costs for five years.¹⁴⁵ A staff person with the DNREC Division of Watershed Stewardship observed that most of their larger living shoreline projects are on state or town-owned property, but federal funding also is used for several hundred property owners’ projects per year, such as under the cover crop program and for stream restoration projects and other best management practices that meet Delaware’s Chesapeake Bay TMDL Watershed Implementation Plan goals.¹⁴⁶ Like Virginia, the State partners with soil and water conservation districts and nonprofits to distribute the funds. He also noted that the U.S. Army Corps of Engineers requires Delaware to use eminent domain or voluntary easements to maintain long-term access for their projects, and FEMA does the same for projects it funds; but DNREC is not allowed by statute to exercise eminent domain, so that is a problem.¹⁴⁷ For beach renourishment projects, they use a construction agreement and a long-term agreement that the newly created beach area is public.¹⁴⁸

An example of a federally funded resilience project on privately owned land in Delaware is the Angola By the Bay shoreline stabilization project conducted in Lewes in 2023. Funded by a Community Water Quality Improvement Grant, an EPA Clean Water Act Section 319 Grant, and the Angola By the Bay Property Owners Association, the project aimed to stabilize an eroding shoreline and protect and enhance an upland buffer area in the gated community with more than 930 homes.¹⁴⁹ It involved managing 2,225 linear feet of shoreline on Herring Creek, and resulted in the installation of 170 linear feet of living shorelines, 1,800 linear feet of shoreline protected, and 15,000 square feet of marsh created or enhanced, as well as the development of a biochar testing ground to sequester carbon and improve water quality through nutrient filtration.¹⁵⁰ The property is owned by the Angola By the Bay Property Owners Association, but the project provided public benefits beyond the direct benefits to the property owners, since it was a demonstration site for living shoreline techniques and the use of biochar to

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ Meeting with Tyler Brown, *supra* n. 78.

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ PowerPoint presentation by Bob Collins, Manager of Programs and Facilities, De. Center for the Inland Bays, *Living Shoreline and Tidal Marsh Enhancement at Angola by the Bay, Herring Creek*, [Microsoft PowerPoint - Collins - Restoration and Conservation I - 3rd talk - Angola by the Bay 2023 Summit](#).

¹⁵⁰ *Id.*

improve water quality.¹⁵¹ Access to the property was authorized through a Memorandum of Understanding with the Property Owners Association, and there was a community cost share.¹⁵² The Delaware Center for the Inland Bays, a nonprofit partner in the project, hired the contractor, oversaw the work, and will monitor the shoreline, while the Property Owners Association is responsible for maintenance.¹⁵³ Angola By the Bay is a gated community, but access throughout the project was provided informally, through contacting the General Manager's Office.¹⁵⁴

B) Maine

The State of Maine arose from Massachusetts, so its MLW jurisdictional delineation and public trust doctrine were derived originally from Massachusetts law. The Massachusetts Bay Colonial Ordinance of 1641-1647¹⁵⁵ established that upland property owners abutting the ocean, bays, coves, rivers, and great ponds own the intertidal zone to the MLW mark, subject to the public's rights of boating, fishing, and fowling.¹⁵⁶ The statute originally was incorporated into Massachusetts common law and then into the common law in Maine.¹⁵⁷ According to that common law, ownership of tidal lands in Maine generally extends to the MLW line or up to 1,650 feet seaward from high water, whichever is closer to the high tide line.¹⁵⁸ It is also possible

¹⁵¹ *Id.* See also De. Ctr. for the Inland Bays, Angola by the Bay, Herring Creek - Living Shoreline and Tidal Marsh Enhancement, [Angola by the Bay Living Shoreline](#).

¹⁵² Email from Bob Collins, Manager of Programs and Facilities, Del. Ctr. for the Inland Bays, Sept. 4, 2025 (on file with the author).

¹⁵³ Email from Bob Collins, Manager of Programs and Facilities, Del. Ctr. for the Inland Bays, Oct. 2, 2025 (on file with the author).

¹⁵⁴ *Id.*

¹⁵⁵ Liberties Common § 2, The Book of the General Lawes and Libertyes Concerning the Inhabitants of Massachusetts 35 (Cambridge, Mass., 1648; reprinted in The Laws and Liberties of Massachusetts 35 (Cambridge, 1929); facsimile reprint, T. Barnes ed. 1975).

¹⁵⁶ Moulton v. Libby, 37 Me. 472, 496-97 (Me. 1854); State v. Leavitt, 72 A. 875 (Me. 1909). In an advisory opinion, the Supreme Judicial Court later expanded those public rights or purposes to include bathing, cutting ice and the supplying of water to a municipality for domestic uses. See In re Opinion of the Justices, 118 Me. 503, 532 (1919), citing Barrows v. McDermott, 73 Me. 441 (1882) and Barrett v. Rockport Ice Co., 84 Me. 155 (1885).

¹⁵⁷ Laphis v. President & Co. of Bangor Bank, 8 Me. 85 (1831) (“The colonial ordinance of 1641, extending the title of riparian proprietors to low-water mark, though originally limited to the Plymouth colony, is part of the common law of Maine; and is applicable wherever the tide ebbs and flows, though it be fresh water, thrown back by the influx of the sea”).

¹⁵⁸ See Knud E. Hermansen and Donald R. Richards, *Maine Principles of Ownership Along Water Bodies*, Maine Law Review, Vol. 47, No. 1 at 39 (April 2018) (stating, “Tidal water is defined as any body of water that is naturally influenced by the ebb and flow of the tide. Tidal waters include rivers from their mouths to the point upstream where the ebb and flow of the tides are negligible. The common law presumption is that a conveyance of land bounded by tidal water will convey title to the low tide mark or to 1650 feet (100 rods' 0), whichever is closer to the high tide line [citing to *Emerson v. Taylor*, 9 Me. 42, 43 (1832)] ... The presumption of tidal water boundary applies equally to all lands along the ocean, bays, and rivers affected by the tides, even though the tidal river water may contain fresh rather than brackish or salty water.”). [Citations omitted.]

<https://legislature.maine.gov/doc/8860#:~:text=A%20tidal%20water%2C%20the%20ownership,of%20the%20high%20tidal%20boundary>.

for a property owner to convey just the intertidal zone while maintaining ownership rights to the MHW line.¹⁵⁹

The public trust doctrine was established by the Colonial Ordinance, which was incorporated into Maine common law¹⁶⁰ and then in 1985 into the Maine Revised Statutes as the Public Trust in Intertidal Land Act.¹⁶¹ Despite the statute including the right to use intertidal land

¹⁵⁹ Title 12, Chapter 202-A: The Public Trust in Intertidal Land, 12 M.R.S.A. §1862(3), <https://legislature.maine.gov/statutes/12/title12ch202-Asec0.html> (stating that a lease may not “unreasonably interfere with customary or traditional access ways to or public trust rights in, on or over that intertidal or submerged lands and the waters above those lands.”). *See also* Perkins Thompson, Where Is The Boundary of Waterfront Property?, <https://perkinsthompson.com/where-is-the-boundary-of-waterfront-property/>.

¹⁶⁰ *Lapish, supra* n. 157.

¹⁶¹ *See* Title 12, Chapter 202-A: The Public Trust in Intertidal Land, 12 M.R.S.A. §§571–573, <https://legislature.maine.gov/statutes/12/title12ch202-Asec0.html>.

§ 571. Legislative findings and purpose.

The Legislature finds and declares that the intertidal lands of the State are impressed with a public trust and that the State is responsible for protection of the public's interest in this land. [PL 1985, c. 782 (NEW).]

The Legislature further finds and declares that this public trust is part of the common law of Maine and generally derived from the practices, conditions and needs in Maine, from English Common Law and from the Massachusetts Colonial Ordinance of 1641-47. The public trust is an evolving doctrine reflective of the customs, traditions, heritage and habits of the Maine people. In Maine, the doctrine has diverged from the laws of England and Massachusetts. The public trust encompasses those uses of intertidal land essential to the health and welfare of the Maine people, which uses include, but are not limited to, fishing, fowling, navigation, use as a footway between points along the shore and use for recreational purposes. These recreational uses are among the most important to the Maine people today who use intertidal land for relaxation from the pressures of modern society and for enjoyment of nature's beauty. [PL 1985, c. 782 (NEW).]

The Legislature further finds and declares that the protection of the public uses referred to in this chapter is of great public interest and grave concern to the State. [PL 1985, c. 782 (NEW).]

§572. Definitions

As used in this chapter, the term "intertidal land" means all land of this State affected by the tides between the mean high watermark and either 100 rods seaward from the high watermark or the mean low watermark, whichever is closer to the mean high watermark. [PL 1985, c. 782 (NEW).]

§573. Public trust rights in intertidal land

1. Public trust rights. The public trust rights in intertidal land include the following:

A. The right to use intertidal land for fishing, fowling and navigation; [PL 1985, c. 782 (NEW).]

B. The right to use intertidal land for recreation; and [PL 1985, c. 782 (NEW).]

C. Any other trust rights to use intertidal land recognized by the Maine common law and not specifically abrogated by statute. [PL 1985, c. 782 (NEW).]

[PL 1985, c. 782 (NEW).]

2. Limitations. The rights described in [subsection 1](#) do not include:

A. The removal from the intertidal land of any sand, soil, rocks or other minerals; [PL 1985, c. 782 (NEW).]

B. Interference with any structure, development or improvement erected or maintained on intertidal land in accordance with the laws of this State; [PL 1985, c. 782 (NEW).]

C. The depositing of any refuse or waste on intertidal land or in the water covering intertidal land; or [PL 1985, c. 782 (NEW).]

D. Use or operation of motorized vehicles other than navigable watercraft, unless specifically authorized by state law or municipal ordinance. [PL 1985, c. 782 (NEW).]

[PL 1985, c. 782 (NEW).]

for recreation as a public trust right,¹⁶² in *Bell v. Town of Wells* (also known as the Moody Beach case), the Supreme Judicial Court found that the Maine public trust doctrine permits public use of the intertidal zone through a narrow public easement that specifically permits only fishing, fowling, and navigation.¹⁶³ Thus, while the intertidal zone is potentially privately owned, the general public has limited rights of access as long as they are moving within the intertidal zone and demonstrating that their purpose for being there is in line with fishing, fowling, or navigating (e.g., carrying a fishing pole while they walk through).

Like Virginia, the bulk of Maine's coastline is privately owned.¹⁶⁴ Unlike Virginia, parts of Maine's shore are rocky and battered by high wave energy.¹⁶⁵ The State has undertaken dune and beach restoration projects with the Corps of Engineers, but they have not had to exercise eminent domain powers yet to acquire property for such projects; however, the extent of some beach nourishment projects has had to be reduced in scope because required easements have not been provided by shorefront property owners.¹⁶⁶

In January of 2024, Maine's coastline was battered by two powerful storms hitting within days of each other and causing tens of millions of dollars in damage.¹⁶⁷ State-level financial support for coastal resiliency efforts on private property in Maine has typically been hard to come by, so those who could afford to install living shorelines typically have paid for them themselves.¹⁶⁸ The financial toll from the 2024 storms, however, highlighted the need for and benefit of proactive coastal resiliency efforts,¹⁶⁹ so in April of 2025, the Maine legislature

3. Police powers. Municipalities shall have jurisdiction to exercise their police powers to control public use of intertidal land, except where such exercise is superseded by any state law. [PL 1985, c. 782 (NEW).]

4. Other public rights. This chapter does not affect public rights in intertidal land arising from custom, prescription, implied dedication, acquiescence or any other source. This chapter does not affect public rights in dry sand areas upland from intertidal land arising from custom, prescription, implied dedication, acquiescence, the public trust doctrine or any other source. [PL 1985, c. 782 (NEW).]"

¹⁶² *Id.* §573(1)(b).

¹⁶³ *Bell v. Town of Wells*, 557 A. 2d 168 (1989) (limiting public access to the intertidal zone for fishing, fowling and navigation only and refusing to permit expansion to recreation, implying that the intertidal zone may be privately owned).

¹⁶⁴ Nearly 95% of Maine's coastline is privately owned. Meeting with Devin Domeyer, Coastal Resiliency Specialist, Maine Coastal Program, Maine Dep't of Marine Resources; Peter Slovinsky, Marine Geologist, Maine Geological Survey; and Nathan Robbins, Climate Change Specialist, Maine Dep't of Environmental Protection, July 28, 2025.

¹⁶⁵ See Me. Geological Survey, Coastal Geologic Processes, [Maine Geological Survey: Coastal Geologic Processes](https://www.maine.gov/dacf/mgs/explore/marine/index.shtml) and Maine's Coastal Marine Geology, <https://www.maine.gov/dacf/mgs/explore/marine/index.shtml> (both last visited Nov. 8, 2025).

¹⁶⁶ Meeting with Maine state experts, *supra* n. 164; email from Maine state experts, Dec. 3, 2025 (on file with the author).

¹⁶⁷ See, e.g., Friends of Acadia, Taken by Storm, <https://friendsofacadia.org/wild-acadia/taken-by-storm-january-2024/> (last visited Nov. 8, 2025).

¹⁶⁸ Meeting with Maine state experts, *supra* n. 164.

¹⁶⁹ *Id.*

introduced legislation to increase funding for community resiliency against climate change.¹⁷⁰ Noting that “the Maine Emergency Management Agency currently lacks the capacity to apply for competitive hazard mitigation grant funds, improve much-needed statewide emergency systems and provide matching funds needed for United States Department of Homeland Security, Federal Emergency Management Agency disaster and hazard mitigation loan funds,”¹⁷¹ the Act established the Home Resiliency Program, administered by the Bureau of Insurance, to provide grants to homeowners to perform home resiliency projects.¹⁷² The funding comes from a state appropriation and a transfer of \$15 million in existing funds from the Bureau of Insurance, including funds collected from fees.¹⁷³ This is an example of a state creating a public fund to support resilience projects on private property, because they could not meet the requirements for qualifying for federal funding.

In addition, in 2007 the National Sea Grant Law Center funded a project, *Legal and Policy Tools for Coastal Access in Maine and the Nation*, to research law and policy tools for public coastal access in Maine. The result was a legal memorandum¹⁷⁴ as well as a publicly-facing website, *Accessing the Maine Coast*, which notes that waterfront land is owned to the mean low tide by the property owner and offers information on obtaining access via acquisition or contract.¹⁷⁵ The legal memorandum provides an example of public funds being used to help

¹⁷⁰ State of Maine S.P. 29 - L.D. 1, An Act to Increase Storm Preparedness for Maine's Communities, Homes and Infrastructure (2025), <https://legislature.maine.gov/legis/bills/getPDF.asp?paper=SP0029&item=3&snum=132>.

¹⁷¹ *Id.* at Emergency Preamble.

¹⁷² *Id.* § 7702 (“Home Resiliency Program 1. Program established. The Home Resiliency Program is established within and under the direction of the bureau to provide grants to homeowners for the purpose of performing home resiliency projects. 2. Home Resiliency Fund. The Home Resiliency Fund is established as a nonlapsing Other Special Revenue Funds account administered by the bureau for the purposes of funding the program. The bureau may transfer available balances from other bureau accounts to the fund, and the fund may receive money from any gift, grant, contribution, legislative appropriation, allocation or transfer or bond proceeds.”). However, these funds are intended more for use in increasing homes’ resilience to high winds and other hazards, rather than nature-based strategies; and it is not yet clear whether these funds can be used for shoreline stabilization efforts. Email from Maine state experts, *supra* n. 164.

¹⁷³ *Id.* Sec. A-2 (“Transfers from available fiscal year 2024-25 Department of Professional and Financial Regulation, Insurance - Bureau of, Other Special Revenue Funds balances to the Department of Professional and Financial Regulation, Home Resiliency Fund, Other Special Revenue Funds account. Notwithstanding any provision of law to the contrary, on or before 90 days following the effective date of this Act, the State Controller shall transfer \$15,000,000 from available balances in the Insurance - Bureau of, Other Special Revenue Funds account within the Department of Professional and Financial Regulation to the Department of Professional and Financial Regulation, Home Resiliency Fund, Other Special Revenue Funds account.”).

¹⁷⁴ David Kallin and Rita Heimes, *Legal Tools to Enhance Public Coastal Access While Protecting Private Property Rights*, Univ. of Me. School of Law, Marine Law Inst. (March 2008), [Legal Tools to Enhance Public Coastal Access](#).

¹⁷⁵ Univ. of Me. Sea Grant, [Accessing the Maine Coast :: Waterfront Users](#) and [Accessing the Maine Coast :: Common Law & Statutes](#).

acquire land to preserve working waterfront uses, with such uses ensured through the use of legally binding deed restrictions.¹⁷⁶

C) Massachusetts

In Massachusetts, state law and regulations provide that lands located seaward of the MLW mark are generally deemed to be state owned and held in trust for the benefit of the public, while lands located landward of the MLW are generally considered property of the upland property owner.¹⁷⁷ Tidelands are defined as Commonwealth Tidelands or Private Tidelands.¹⁷⁸

¹⁷⁶ Kallin and Heimes, *supra* n. 174, at 11. The funds are available to “private businesses, cooperatives, municipalities, or other qualified organizations for projects that will provide permanent waterfront access to commercial fisheries businesses.” *Id.*

¹⁷⁷ See the Massachusetts Public Waterfront Act, M.G.L. 91, Waterways, [Chapter 91](#) and Mass. Dep’t of Env’t Protection, Mass. Waterways Regulation, 310 C.M.R. 9.00, <https://www.mass.gov/regulations/310-CMR-900-the-massachusetts-waterways-regulation>. See also Mass. Office of Coastal Zone Mgmt., Fact Sheet, *Public Rights Along the Shoreline*, Mass.gov (2005), <https://www.mass.gov/info-details/public-rights-along-the-shoreline>.

¹⁷⁸ Massachusetts Public Waterfront Act, M.G.L. 91, Waterways, Sec. 1, Definitions, [General Law - Part I, Title XIV, Chapter 91, Section 1](#):

"Tidelands", present and former submerged lands and tidal flats lying below the mean high water mark.

"Commonwealth tidelands", tidelands held by the commonwealth in trust for the benefit of the public or held by another party by license or grant of the commonwealth subject to an express or implied condition subsequent that it be used for a public purpose.

"Private tidelands", tidelands held by a private party subject to an easement of the public for the purposes of navigation and free fishing and fowling and of passing freely over and through the water.”

See also the Massachusetts Waterways Regulation, *supra* n. 177, at 310 C.M.R. 9.02, Definitions:

Commonwealth Tidelands means tidelands held by the Commonwealth, or by its political subdivisions or a quasi-public agency or authority, in trust for the benefit of the public; or tidelands held by a private person by license or grant of the Commonwealth subject to an express or implied condition subsequent that it be used for a public purpose. In applying 310 CMR 9.02: Definitions: Commonwealth Tidelands, the Department shall act in accordance with the following provisions:

(a) the Department shall presume that tidelands are Commonwealth tidelands if they lie seaward of the historic low water mark or of a line running 100 rods (1650 feet) seaward of the historic high water mark, whichever is farther landward; such presumption may be overcome only if the Department issues a written determination based upon a final judicial decree concerning the tidelands in question or other conclusive legal documentation establishing that, notwithstanding the Boston Waterfront decision of the Supreme Judicial Court, such tidelands are unconditionally free of any proprietary interest in the Commonwealth;

(b) the Department shall presume that tidelands are not Commonwealth tidelands if they lie landward of the historic low water mark or of a line running 100 rods (1650 feet) seaward of the historic high water mark, whichever is farther landward; such presumption may be overcome only upon a showing that such tidelands including, but not limited to, those in certain portions of the Town of Provincetown, are not held by a private person.

Private Tidelands means tidelands held by a private person subject to an easement of the public for the purposes of navigation and free fishing and fowling and of passing freely over and through the water. In accordance with the Colonial Ordinances of 1641-47, the Department shall presume that tidelands are private tidelands if they lie landward of the historic low water mark or of a line running 100 rods (1650 feet) seaward of the historic high water mark, whichever is farther landward; such presumption may be overcome upon a showing that such tidelands, including but not limited to those in certain portions of the

Ownership of the intertidal zone was originally set forth in the Colonial Ordinances of 1641-47,¹⁷⁹ which was incorporated into the common law,¹⁸⁰ continued in force by the Massachusetts Constitution,¹⁸¹ and adopted in the Massachusetts Waterways Regulation, which clarifies that the intertidal zone is privately owned landward of the historic MLW line but not farther seaward of the historic high water mark than 100 rods or 1,650 feet.¹⁸²

Privately owned intertidal areas are subject to public access easements for fishing, fowling, and navigation and those activities' natural derivatives.¹⁸³ Massachusetts has effectively

Town of Provincetown, are not held by a private person or upon a final judicial decree that such tidelands are not subject to said easement of the public.

¹⁷⁹ Liberties Common, *supra* n. 155155.

¹⁸⁰ *Mayhew v. Norton*, 34 Mass. (17 Pick.) 357, 360 (1835) (“The principles of the ordinance of 1641 have been extended and applied to the old colony of Plymouth, and form a part of the common law.”).

¹⁸¹ Mass. Const. pt. 2, ch. 6, art. VI (“All the laws which have heretofore been adopted, used and approved in the Province, Colony or State of Massachusetts Bay, and usually practiced on in the courts of law, shall still remain and be in full force, until altered or repealed by the legislature; such parts only excepted as are repugnant to the rights and liberties contained in this constitution.”).

¹⁸² See definitions of Commonwealth Tidelands and Private Tidelands in the Mass. Waterways Regulation, *supra* n. 177. See also 310 C.M.R. 910, Waterways Regulation, *supra* n. 177, at 9.02: Definitions ([download](#)):

Historic Low Water Mark means the low water mark which existed prior to human alteration of the shoreline by filling, dredging, excavating, impounding or other means. In areas where there is evidence of such alteration by fill, the Department shall make its determination of the position of the historic low water mark in the same manner as described in 310 CMR 9.02: Definitions: Historic High Water Mark.

Low Water Mark means the present mean low tide line, as established by the present arithmetic mean of water heights observed at low tide over a specific 19-year Metonic Cycle (the National Tidal Datum Epoch), and shall be determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce.”

See also 310 C.M.R. 9.05, Activities Subject to Jurisdiction:

(2) Activities Requiring a Permit Application. Except as provided in 310 CMR 9.05(3), an application for a permit or permit amendment shall be submitted to the Department for the following activities unless the applicant includes such activities in a license application: (a) any beach nourishment; (b) any dredging; (c) any disposal involving the subaqueous placement of unconsolidated material below the low water mark; ...

¹⁸³ See the Mass. Waterways Regulation, *supra* n. 177, at 9.02, Definitions:

“Private Tidelands means tidelands held by a private person subject to an easement of the public for the purposes of navigation and free fishing and fowling and of passing freely over and through the water. ...” See also Mass. Office of Coastal Zone Mgmt., [Public Rights Along the Shoreline | Mass.gov](#):

Over the years, Massachusetts courts have ruled that the scope of activities on private tidelands covered by the reserved public rights of fishing, fowling, and navigation is broad, and includes all of their "natural derivatives." For example:

- The right to fish includes the right to seek or take any fish, shellfish, or floating marine plants, from a vessel or on foot;
- The right to navigate includes the right to conduct any activity involving the movement of a boat, vessel, float, or other watercraft, as well as the transport of people and materials and related loading and unloading activity; and
- The right to fowl includes the right to hunt birds for sport as well as sustenance. (The Massachusetts Attorney General takes the position that the right of fowling also includes other ways that birds can be "used," such as birdwatching, but also notes that this issue has not yet been addressed by the courts.)

Clearly, these rights cover a variety of both old and new activities that many people enjoy, such as surfcasting and windsurfing. Still, the courts have imposed some limits. The right of fishing, for example, does not allow the use of structures for aquaculture or the taking of plant debris washed up on the beach. Also, courts have made it clear that the public right to use this area does not include the right to simply

leveraged public trust principles to guide the implementation of coastal resilience projects,¹⁸⁴ even when these projects impact privately owned property. The State encourages consideration of sites for living shorelines but does not have as many living shoreline projects because the coast has higher tidal ranges, so sills with larger footprints have to be installed; but they do conduct beach nourishment projects to protect public infrastructure.¹⁸⁵ They have sea walls that public resources (local and state) pay to maintain, and as the beach in front of them that is necessary for full protection has eroded, the Massachusetts Coastal Zone Management Program has funded beach renourishment projects that obtain public access easements¹⁸⁶ from private property owners to ensure passage parallel to beaches.¹⁸⁷

Through programs that blend federal funding, state grants, and local in-kind or cash matches, municipalities and nonprofit entities have been able to implement large-scale interventions. Examples of this include dune restoration and coastal protection projects undertaken by Duxbury Beach Reservation, Inc. (DBR), a private land trust with a 501(c)(3) designation, whose mission is to protect the barrier beach of Duxbury Beach and provide habitat for endangered species.¹⁸⁸ DBR has received multiple grants of public funds from sources including the state Coastal Zone Management (CZM) Program to conduct projects such as beach

stroll, sunbathe, or otherwise engage in recreation unrelated to fishing, fowling, or navigation. Without permission from the landowner, such general recreation is trespassing. There is only one narrow exception to this rule—because there are no private property rights in the water itself, the public is allowed to swim in the intertidal zone provided the swimmer does not touch the private land underneath or use it to enter or leave the water.

¹⁸⁴ Pursuant to the Massachusetts Public Waterfront Act, M.G.L. 91, Waterways, [Chapter 91](#), the Massachusetts Department of Environmental Protection’s Waterways Regulation Program:

- “Preserves pedestrian access along the water’s edge for fishing, fowling and navigation and, in return for permission to develop non-water dependent projects on Commonwealth tidelands, provides facilities to enhance public use and enjoyment of the water.
- Seeks to protect and extend public strolling rights, as well as public navigation rights.
- Protects and promotes tidelands as a workplace for commercial fishing, shipping, passenger transportation, boat building and repair, marinas and other activities for which proximity to the water is either essential or highly advantageous.
- Protects Areas of Critical Environmental Concern, ocean sanctuaries and other ecologically sensitive areas from unnecessary encroachment by fill and structures.
- Protects the rights of waterfront property owners to approach their property from the water.
- Encourages the development of city and town harbor plans to dovetail local waterfront land use interests with the Commonwealth’s statewide concerns.
- Assures removal or repair of unsafe or hazardous structures.”

Mass. Dep’t of Env’t Protection, [Chapter 91, The Massachusetts Public Waterfront Act | Mass.gov](#).

¹⁸⁵ Meeting with Bryan McCormack, Coastal Processes and Hazards Specialist, Cape Cod Cooperative Extension & Woods Hole Oceanographic Institution Sea Grant, Barnstable County, Regional Government of Cape Cod, and Rebecca Haney, Coastal Geologist, Ma. Office of Coastal Zone Management, July 29, 2025.

¹⁸⁶ See p. 30 of **Appendix V**, Public Access Easement from Mass. Dept. of Env’t Protection, Beach Nourishment - MassDEP’s Guide to Best Management Practices for Projects in Massachusetts (March 2007).

¹⁸⁷ Meeting with Bryan McCormack and Rebecca Haney, *supra* n. 185.

¹⁸⁸ See Duxbury Beach Reservation, Inc., About Us, <https://duxburybeachreservation.org/#page-3> (last visited Nov. 8, 2025).

nourishment using sand, gravel, and cobblestone to match the native beach composition.¹⁸⁹ One of the reasons the CZM Program provided funding to protect that barrier beach is that it protects Duxbury Harbor and the mainland.¹⁹⁰ The Towns of Marshfield and Duxbury were awarded Coastal Zone Management (CZM) Coastal Resilience grants totaling \$3.2 million to construct a beach nourishment project along beaches in both towns.¹⁹¹ The Town of Marshfield required private property owners to provide a Beach Nourishment Easement in perpetuity (see **Appendix VI**) for portions of properties that lie seaward along the seawall, in order to provide the Town with permission to construct and repair a beach and dune system and other erosion controls;¹⁹² and also to provide an easement “to the Town, the residents of Marshfield, and to the public at large, to pass and repass the Easement Area by foot” subject to certain restrictions, in exchange for the direct benefit to the property owner provided by the beach nourishment paid for with public funding.¹⁹³ The Coastal Resilience Program prioritizes funding for projects that have public benefits.¹⁹⁴

Another example of a project that required a public access agreement is the U.S. Army Corps of Engineers’ beach and dune nourishment project at Town Neck Beach in Sandwich. The Corps required public access easements from the private property owners landward of the project, but the first time the dune nourishment was conducted, the private property owners did not wish to sign easement agreements, so the nourishment was only placed on public property to the southeast.¹⁹⁵ For the most recent nourishment conducted in Fall 2024, however, the property owners signed the agreements and nourishment was placed seaward of the private properties and along the public beach.¹⁹⁶

D) Pennsylvania

In Pennsylvania, the Mean Low Water mark is established as the boundary for the Commonwealth’s ownership of bottomlands:

¹⁸⁹ See Duxbury Beach Reservation, Inc., Coastal Resilience Program, [Coastal Resilience Program](#) (last visited Nov. 8, 2025). See also Ma. Coastal Zone Management Program, Grant Viewer, <https://experience.arcgis.com/experience/68dc9fd4438544b1a39b48868c6f8f0c/page/Grant-Viewer>.

¹⁹⁰ Email from Rebecca Haney, Coastal Geologist, Ma. Office of Coastal Zone Mgmt., Oct. 20, 2025 (on file with the author).

¹⁹¹ *Id.* See also Town of Marshfield, Ma., CZM Coastal Resiliency Grant - Beach Nourishment, https://www.marshfield-ma.gov/departments/town_hall/planning/czm_coastal_resiliency_grant_beach_nourishment/index.php. The CZM grant funded installation of a 40-foot wide berm fronting 11 properties in Marshfield along 720 linear feet of shoreline.

¹⁹² Town of Marshfield, Ma., Beach Nourishment Easement, [marshfield_beach_easement_form_02022022\(1\).pdf](#).

¹⁹³ *Id.*

¹⁹⁴ Meeting with Bryan McCormack and Rebecca Haney, *supra* n. 185; email from Rebecca Haney, *supra* n. 190.

¹⁹⁵ Email from Rebecca Haney, *supra* n. 190.

¹⁹⁶ *Id.*

The title to the beds of public waters is held in trust by the Commonwealth of Pennsylvania for the benefit of the public. In case of rivers and streams, the Commonwealth's ownership extends to ordinary low water mark, and the adjacent riparian landowner owns above the high water mark. An easement exists in favor of public between high and low water marks. That easement includes the right to fish.¹⁹⁷

There is a presumption that the Commonwealth “owns the beds and underlying subsurface of all navigable waters between the ordinary low water marks. Owners of land along the banks of navigable waters do not have exclusive rights in those waters; that right is vested in the Commonwealth for the benefit of the public.”¹⁹⁸

The public trust doctrine in Pennsylvania initially was established by common law concerning the public right of access to navigable waters,¹⁹⁹ and memorialized by a 1971 amendment to the Pennsylvania Constitution known as the Environmental Rights Amendment:

Article I, Section 27. Natural Resources and the Public Estate

¹⁹⁷ Pa. Fish and Boat Comm’n, Public/Private Access, [Public / Private Access | Fish and Boat Commission | Commonwealth of Pennsylvania](#) (last visited Nov. 8, 2025). See also Beachapedia, Beach Access, *Surfrider Foundation’s Stance on Beach Access*, [Beach Access - Beachapedia](#), and *Stover v. Jack*, 60 Pa. 339, 343 (Pa. 1869) (“... it has always been held that the grants of the state of lands bordering on navigable streams, even when calling for the river as a boundary, do not extend beyond low-water mark: *Hart v. Hill*, 1 Whart. 137; *Ball v. Slack*, 2 Whart. 608; *Lehigh Valley Railroad Co. v. Trone*, 4 Casey 206; *Jones v. Janney*, 8 W. & S. 436. And even to this extent the grant of title is not absolute, except to high-water mark. As to the intervening space between high and low water mark, the title of the private owner is qualified. The right of passage over it in high water remains in the public. The state may use it for purposes connected with the navigation of the stream without compensation, and may protect it also from an unauthorized use of it even by the owner of the land to low-water mark: *Shrunk v. Sch. Nav. Co.*, *Commonwealth v. Fisher*, *Zimmerman v. Union Canal Co.* ...; *Bailey v. Miltenberger*, 7 Casey 43; *Flanagan v. City of Philadelphia*, 6 Wright 219.”). See also *United States v. Pennsylvania Salt Mfg. Co.*, 16 F.2d 476, 480 (E.D. Pa. 1926), <https://law.justia.com/cases/federal/district-courts/F2/16/476/1481515/> (“The defendant has referred us (among others) to the following Pennsylvania cases: *Wainwright v. McCullough*, 63 Pa. 66; *Commonwealth v. Association*, 169 Pa. 24, 32 A. 121; *Black v. American*, 264 Pa. 260, 107 A. 737. These cases are of assistance so far as they give authoritative confirmation to the well-settled law of Pennsylvania that (1) the utmost limit of title in a riparian owner of lands on tidal waters is low-water mark; and (2) the title to the lands below the low-water mark line is in the commonwealth.”).

¹⁹⁸ Pa. Dep’t of Conservation & Natural Resources, Bureau of Forestry, Navigable Waters MapServer, [BOF/Nav_waters \(MapServer\)](#). See also 25 Pa. Code § 105.34, Navigation and public trust: “An easement, right-of-way, lease or license [to occupy Commonwealth-owned submerged lands] will not be granted by the Department [of Environmental Protection] if it may adversely affect navigation or significantly impair the right in lands of the public held in trust by the Commonwealth.” See also *Pennsylvania Salt Mfg. Co.*, *supra* n. 197, at 480 (noting that it is “the well-settled law of Pennsylvania that (1) the utmost limit of title in a riparian owner of lands on tidal waters is low-water mark; and (2) the title to the lands below the low-water mark line is in the commonwealth. ... The lands of an abutting property owner below high-water mark are subject to the exercise of the police power of the state as the protector of highways and to the control of the United States as the guardian of the rights of navigation over navigable waters.”).

¹⁹⁹ *Shrunk v. President, Managers & Co. of Schuylkill Navigation Co.*, 42 Pa. 219 (Pa. 1826) (recognizing the public’s right to navigate and fish in public waterways, and holding that construction of a bridge over a river could not prevent navigation).

*The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.*²⁰⁰

Application of this amendment has been interpreted in various ways by courts in Pennsylvania, culminating in a 2017 Pennsylvania Supreme Court case that held that the public trust provisions of the Environmental Rights Amendment are self-executing and do not require implementing legislation to be effective,²⁰¹ and that natural resources are to be managed for the public's benefit, so laws that unreasonably impair the public's right to clean air, pure water, and environmental preservation are unconstitutional.²⁰²

Discussions with Pennsylvania Department of Environmental Protection (PDEP) staff revealed that they have successfully used federal funding for coastal projects that encroach upon privately owned property. In such cases, PDEP requires legal documentation verifying that the applicant for funds has access to the privately owned property, and has the legal right to perform the proposed work.²⁰³ Staff noted that public access rights must be considered and balanced to ensure a project complies with Article I, Section 27 of the Pennsylvania Constitution, noted above.²⁰⁴ Alternatives to assure access that have been discussed or used in the past include memoranda of agreement (MOAs), conservation easements or state-approved management plans, or legal designation of the area as a protected mitigation site.²⁰⁵

Similar to other states, Pennsylvania uses Clean Water Act Section 319 funds to provide Nonpoint Source Management Program grants for nonpoint source pollution reduction efforts, such as stream restoration and stormwater management projects, riparian forest buffer planting and protection, and agricultural best management practices (BMPs).²⁰⁶ PDEP uses a Landowner Letter of Commitment that provides that the landowners agree to allow PDEP staff to enter their property to design and/or install Conservation Practices / BMPs for the purpose of improving water quality.²⁰⁷ They also use a [landowner-grantee agreement](#) (see **Appendix VII**) that is

²⁰⁰ Pa. Const., art. I, § 27 (Added by Amendment of May 18, 1971). *See also* Pa. Fish & Boat Comm'n, *supra* note 197 ("The rights of the public in public waters are quite broad and extend to fishing, boating, wading, floating, swimming and otherwise recreating.").

²⁰¹ Pa. Env't Defense Found. v. Com. of Pa., 161 A.3d 911, 937 (2017).

²⁰² *Id.* at 931.

²⁰³ Email from staff of the Coastal Resources Management Program, Pa. Dep't of Env't Protection, Oct. 9, 2025 (on file with the author).

²⁰⁴ *Id.*

²⁰⁵ *Id.*

²⁰⁶ Pa. Dep't of Env't Protection, Section 319 Nonpoint Source Management Grant Program Federal Fiscal Year 2026: Funding Watershed Restoration Across Pennsylvania, [Section 319 Nonpoint Source Management Grants Program Guidance, Federal Fiscal Year 2026](#).

²⁰⁷ Pa. Dep't of Env't Protection, Landowner Letter of Commitment Rev. 3/2024, [PDEP Landowner Letter of Commitment](#).

required before BMP construction on private property, and which has a section requiring inclusion of an Operation, Maintenance, and Repair Plan in which the landowner would agree to maintain the BMP. Successful examples of the use of these funds on private property include stream restoration along Turtle Creek, an impaired tributary of the West Susquehanna River,²⁰⁸ and shoreline stabilization and restoration of riparian buffers along Manatawny Creek in the Schuylkill River watershed.²⁰⁹

An interesting and different approach was used by the City of Philadelphia and the Schuylkill River Development Corporation (SRDC) where the land between railroad tracks and the river was too narrow to continue the Schuylkill River Trail southward. The City and SRDC built a 2,000-foot long concrete structure called “the Boardwalk” that runs parallel to the eastern shore of the river from Locust Street to a new stair tower on the south side of the South Street Bridge.²¹⁰ The Boardwalk was funded by a \$6,200,000 Federal Highway Administration (FHWA) Transportation Improvements Generating Economic Recovery (TIGER) grant; a \$5,500,000 FHWA Congestion Mitigation and Air Quality (CMAQ) Improvement grant, which is federal funding allocated to states; a \$1,000,000 FHWA Transportation Enhancement grant (that program is no longer available; funding was incorporated into the Transportation Alternatives program); and the State and the City.²¹¹ The SRDC also spearheaded the development of the Christian to Crescent segment of the Schuylkill River Trail as part of its vision to construct a completely off-road pedestrian and cyclist trail along the river between two National Historic Landmarks, the Fairmount Water Works and Bartram’s Garden.²¹² The area is still industrially active and the riverbank narrows there, so a 650-foot cable supported bridge was built along the east riverbank along with two approach spans on either side.²¹³ Funding for the project included a \$12,000,000 FHWA TIGER grant and a \$2,292,000 FHWA CMAQ grant.²¹⁴ Building resilience or recreational projects offshore over publicly owned submerged lands is expensive and requires permitting and government approvals, but it is one way to avoid challenges posed by shoreline obstacles and privately owned parcels.

²⁰⁸ See U.S. Env’t Protection Agency, Section 319 Nonpoint Source Program Success Story – Pennsylvania, [Partners Collaborate to Improve the Turtle Creek Stream Corridor \(EPA 841-F-22-001H\)](#) and [View Success Story 101981](#) (both last visited Nov. 8, 2025).

²⁰⁹ See U.S. Env’t Protection Agency, Section 319 Nonpoint Source Program Success Story – Pennsylvania, [pa_manatawny.pdf](#). See generally Com. of Pa., Nonpoint Source Success Stories, [Success Stories | Department of Environmental Protection | Commonwealth of Pennsylvania](#) (last visited Nov. 8, 2025).

²¹⁰ Schuylkill River Devt. Corp., Schuylkill Banks, Boardwalk, [Boardwalk | Schuylkill Banks](#) (last visited Nov. 8, 2025). See generally Schuylkill River Greenways National Heritage Area, Interactive Map, [Interactive Map - Schuylkill River Greenways](#) (last visited Nov. 8, 2025).

²¹¹ Email from Stacey Box, Pa. Coastal Resources Mgmt. Program, conveying information from the Schuylkill River Development Corporation staff, Oct. 16, 2025 (on file with the author).

²¹² Schuylkill River Devt. Corp., Schuylkill Banks, Christian to Crescent, [Christian to Crescent | Schuylkill Banks](#) (last visited Nov. 8, 2025).

²¹³ *Id.*

²¹⁴ Email from Stacey Box, *supra* n. 211.

VIII. Potential Solutions

There are several potential ways to address challenges that can arise when trying to use federal funding for resilience projects on private properties in a MLW state. These approaches can be grouped into three categories: alternative shoreline stabilization designs, alternative funding sources, and acquisition of permission to encroach.

A) Alternative Shoreline Stabilization Designs

The simplest way to avoid these challenges is to not encroach on privately owned intertidal zones, which would mean that innovative approaches to living shoreline design are needed as a way to expand climate adaptation opportunities. Two promising strategies that center on the strategic siting and typology of nature-based features are:

1. Use of offshore nature-based solutions.

Constructing offshore breakwaters, artificial reefs, or constructed barrier islands, which are sited on the publicly owned bottomlands, allows for shoreline erosion control without private property entanglements. However, doing so requires some more specificity in the guidance concerning avoiding Submerged Aquatic Vegetation (SAV).

These offshore structures are designed for and have proven most effective in high wave energy environments.²¹⁵ They are excellent at dissipating wave energy before it reaches the vulnerable shoreline, thereby reducing erosion and protecting both public and private coastal infrastructure.²¹⁶ However, in low wave energy environments, these may not be effective at combating erosion, and/or may be expensive overkill as far as the installation that is needed for the specificity of the site. Additionally, these structures are only suited for areas wide enough to accommodate the interventions without obstructing navigation.

While these installations are promising solutions, any offshore or subaqueous construction must consider environmental trade-offs, most notably the potential impact on SAV, mudflats and other sensitive marine habitats.²¹⁷ Projects in or near SAV beds can disrupt critical ecosystems,

²¹⁵ See Va. Inst. of Marine Science, Ctr. for Coastal Resources Mgmt., Offshore Breakwaters and Beach Nourishment, https://www.vims.edu/ccrm/outreach/living_shorelines/design/sills_breakwaters/breakwaters/ (last visited Nov. 8, 2025).

²¹⁶ See *id.*

²¹⁷ The VMRC considers a number of factors, including SAV impacts, when issuing permits for encroachments onto State-owned submerged lands. See Va. Marine Resources Comm'n, Subaqueous Guidelines, Sec. I, *Introduction*, [GetFile.cfm](#):

C. General Considerations Applying to All Permits

1. The submerged lands and the overlying waters in the state are a valuable public resource. Therefore, permitted encroachments will strive to minimize interference with the rights of all citizens of the Commonwealth to other appropriate uses.

2. In granting or denying any permit for use of State-owned submerged lands and the waters overlying those lands, the Commission will consider, among other things, the effect of the proposed project upon: other reasonable and permissible uses of State waters and State-owned submerged lands; marine and

which provide water quality benefits and critical habitat for fish, shellfish, and other marine life. In addition, as noted above, there currently is no regulatory framework for SAV mitigation in the Commonwealth, and the VMRC Subaqueous Guidelines state that placing fill on state-owned submerged lands for the purpose of creating highland property is generally not permitted, absent special circumstances;²¹⁸ so a project applicant wishing to create an offshore structure would need to be able to show that special circumstances exist. Clarification from the VMRC concerning what would constitute a special circumstance would be helpful.

2. Encouraging the designer and permitter to work together more on innovative living shoreline designs.

For living shoreline applications, VMRC often will schedule a site visit with the applicant, agent, local wetlands board representative, and VIMS.²¹⁹ This is very helpful, and even more interaction should be encouraged. The project designer and VMRC staff could work together to design a living shoreline that bridges the privately owned intertidal zone and state-owned bottomlands, allowing for public right-of-way on the portion of the design sited on bottomlands. This maintains the private property rights of the upland owner but accommodates a clear public interest since a living shoreline with a subtidal sill generally does not restrict public access, as its footprint is usually quite small.²²⁰ However, as noted above, one challenge is that the VMRC is required by the Virginia Tidal Wetlands Act in Va. Code § 28.2-1301 to preserve wetlands in a manner to ensure protection of shorelines and sensitive coastal habitats from sea level rise and coastal hazards, but shoreline protection strategies that take into account sea level rise are more likely to extend into the intertidal zone beyond the MLW line and potentially encroach upon private property. The design guide produced by Wetlands Watch, "[Designing Living Shorelines for Sea Level Rise in Virginia](#)", provides design strategies and case studies that can be helpful in addressing this challenge.

In addition, research by VIMS in the Middle Peninsula region of Virginia found a preference among saltwater anglers for fishing in coastal marshes and living shorelines, and recreational fishing is often enhanced just shoreward of a living shoreline sill as well as around

fisheries resources, wetlands, adjacent or nearby properties; anticipated public and private benefits, submerged aquatic vegetation, and water quality. The Commission will also consider the water-dependency of the project and alternatives for reducing any anticipated adverse impacts.

²¹⁸ *Id.* Sec. III, *Filling And Dredged Material Placement*:

A. Filling on State-owned subaqueous land for the purpose of reclaiming or creating highland property is generally not permitted. If special circumstances warrant such fill, an appropriate royalty will be assessed on a square foot basis. Clean material from an upland source is generally preferable to dredged material for use as fill.

B. Filling on wetlands to create upland property is generally not permitted unless unusual conditions warrant. Decisions by a local wetlands board or the Commission will be based on the Commission's Wetlands Guidelines that categorize wetlands species according to type and relative importance.

²¹⁹ Email from Mark Luckenbach, Associate Dean, Va. Institute of Marine Science, Sept. 26, 2025 (on file with the author).

²²⁰ *Id.*

rock jetties without any adjacent vegetation²²¹ - an additional public benefit that potentially could support the use of public funding for living shoreline projects on private property.²²²

Consideration of guidance provided by VIMS, DCR's Shoreline Erosion Advisory Service (SEAS), and local, state and federal regulatory staff at pre-application meetings allows for potential issues to be discussed on site and remedied before the application is submitted, creating a more effective outcome and smoother permitting process. Additionally, nuances of the guidance regarding SAV can be taken into consideration and accommodated in the design, with meaningful conversation occurring between scientist, designer, and other engaged experts. All living shoreline designs should investigate the proposed site's potential to support growth of SAV and, if suitable, incorporate measures that include the deployment of shoots or seeds necessary to reintroduce SAV or support the colonization of healthy SAV habitats.

More guidance for designers also is needed in the Virginia living shoreline statute²²³ on how much and what types of ecological functions and ecosystem services must be provided by a shoreline stabilization project to constitute a living shoreline, beyond erosion control. How much nutrient cycling, carbon sequestration, habitat for juvenile fishes and ducks, and potential flood buffering must be provided for a measure to be deemed a living shoreline by the Commonwealth? Further research and statutory clarity would help to answer these questions. VIMS has the ability to conduct pilot projects for the VMRC; if the General Assembly were to provide adequate funding, those could be conducted on state-owned bottomlands and on private property, with permission, in order to gain sufficient data over time to enable further statutory and regulatory clarity about living shoreline baseline requirements. The law could be written to include "vague specificity" which provides more clarity on requirements and best practices, while still retaining sufficient nuance for the permitting agencies to have flexibility when considering shoreline stabilization project designs.

²²¹ *Id.*

²²² Andrew Scheld, Donna Bilkovic, Sarah Stafford, Kathleen Powers, Susanna Musick, Amanda G. Guthrie, *Valuing shoreline habitats for recreational fishing*, Ocean & Coastal Management, Volume 253, 107150 (July 1, 2024), [Valuing shoreline habitats for recreational fishing - ScienceDirect](#) (finding that trips to marshes and living shoreline habitats generated the highest total benefits for Middle Peninsula anglers).

²²³ Va. Code Ann. § 28.2-104.1(A). Living shorelines; development of general permit; guidance (defining "Living shoreline" as "a shoreline management practice that provides erosion control and water quality benefits; protects, restores, or enhances natural shoreline habitat; and maintains coastal processes through the strategic placement of plants, stone, sand fill, and other structural and organic materials. When practicable, a living shoreline may enhance coastal resilience and attenuation of wave energy and storm surge."). That Code section also defines "other structural and organic materials" as "materials or features that provide added protection or stability for the natural shoreline habitat components of a living shoreline that attenuate wave energy and do not interfere with natural coastal processes or the natural continuity of the land-water interface. "Other structural and organic materials" may be composed of a variety of natural or man-made materials, including rock, concrete, wood fiber, oyster shells, and geotextiles; however, structural features shall be free from contaminants and shall be adequately secured to prevent full or partial dislodging or detachment due to wave action or other natural forces."

B) Alternative Funding Sources

A second approach to addressing challenges that may be encountered with using federal funds to protect private property is to use alternative funding sources. The Sandbridge Beach case study highlighted above is an example of private funding being put toward shoreline resilience projects, and the funding for the Maine Home Resiliency Program comes from the state. Another potential source of non-federal funding for living shorelines installed at a community scale could be the creation of Tax Increment Financing (TIF) Districts to fund dredging projects, with the dredged material being used for creation of the living shoreline. A local government would create a TIF to leverage future tax revenue increases to fund both the dredging and the living shoreline installation as community improvement projects.²²⁴ Additionally, in light of the Commonwealth's mandate requiring living shorelines wherever they are suitable, the General Assembly could increase funding for living shorelines with an explanation of how their use is in the public interest because of the multiple benefits they provide. For example, the Community Flood Preparedness Fund²²⁵ administered by DCR is dependent upon legislative appropriations²²⁶, and so is the Virginia Conservation Assistance Program (VCAP) described earlier that is administered by the Soil and Water Conservation Districts with funding appropriated to DCR.²²⁷ Both programs can be used to fund living shorelines, and the legislature could increase funding to both in order to reduce reliance upon federal grants for shoreline stabilization projects.

Another option is to focus on using federal funding sources that clearly are permitted to be used for resilience projects on private property, or where the permitting agency is able to exercise discretion in awarding the grant funds and may allow their use on private property. For example, the Virginia Clean Water Revolving Loan Fund administered by DEQ offers local governments funding for loans for living shoreline installation,²²⁸ using Clean Water Act Section

²²⁴ See generally Va. Coastal Zone Management Program and Middle Peninsula Planning District Comm'n, *Public Financing Options for Dredging and Coastal Resilience Activities* (2026).

²²⁵ Va. Code § 10.1-603.25. Virginia Community Flood Preparedness Fund; loan and grant program.

²²⁶ See, e.g., the 2025 appropriation for VCAP in Item 359 (R) of the 2025 Budget Bill, Ch.725 of the 2025 Acts of Assembly, <https://budget.lis.virginia.gov/item/2025/1/HB1600/Chapter/1/359/>.

²²⁷ See, e.g., the 2025 appropriation for VCAP in Item 359 (P1) of the 2025 Budget Bill, Ch.725 of the 2025 Acts of Assembly, <https://budget.lis.virginia.gov/item/2025/1/HB1600/Chapter/1/359/>.

²²⁸ See Va. Dep't of Env't Quality, Living Shorelines, [Living Shorelines | Virginia DEQ](#) (last visited Nov. 8, 2025) and Va. Code § 62.1-229.5, Loans for living shorelines:

§ 62.1-229.5. Loans for living shorelines.

Loans may be made from the Fund, in the Board's discretion, (i) to a local government for the purpose of establishing living shorelines, as defined in § 28.2-104.1, to protect or improve water quality and prevent the pollution of state waters or (ii) to a local government that has developed a funding program to provide low-interest loans or other incentives to businesses or individual citizens of the Commonwealth to facilitate the establishment of living shorelines to protect or improve water quality and prevent the pollution of state waters. To be eligible for loan funding, a business shall be located within a locality that is in the Rural Coastal Virginia Community Enhancement Authority as defined in § 15.2-7600. Eligible businesses include bed-and-breakfast operations, campgrounds, and restaurants, as defined in § 35.1-1, and businesses

603 funds that are authorized to be used to assist private parties with nonpoint source pollution reduction.²²⁹ It would be helpful if the requirements for federal funding programs that do allow the exercise of discretion by fund managers could be modified to explicitly recognize the public benefits provided by living shorelines and other natural features installed on private property. To facilitate that outcome, representatives of MLW states could proactively engage with the managers of such funding programs to seek clarity about what could be considered sufficient public benefit to approve funding proposals for shoreline stabilization projects, such as providing public access in perpetuity, preserving scarce habitat, or stopping severe erosion and associated water quality impacts along a significant stretch of shoreline.

An important consideration when reviewing funding sources for shoreline stabilization measures is their ease of use; *i.e.*, their terms, conditions and timing. The Commonwealth should ensure that state funding sources are “user-friendly” - that they are as flexible as possible, can be combined easily, and truly serve to incentivize the use of living shorelines to support the Commonwealth’s mandate.²³⁰ The General Assembly could provide funds to incentivize localities to enact the local real estate tax exemption for living shorelines created by state law, which is difficult for localities with tight budgets to embrace because it means a loss of tax revenue.²³¹ Or, the legislature could expand the concept of the Land Preservation Tax Credit program²³² enabled by the Virginia Land Conservation Incentives Act.²³³ That program offers an income tax credit for 40% of the value of donated land or conservation easements.²³⁴ The concept could be expanded to include easements over the intertidal zone to be held by a public body²³⁵ for installation of living shorelines. The value of the easement may or may not be

that use working waterfronts, as defined in § 15.2-2201. The Board shall develop guidelines for the administration of such loans.

²²⁹ See U.S. Env’t Protection Agency, About the Clean Water State Revolving Fund, [About the Clean Water State Revolving Fund \(CWSRF\) | US EPA](#):

“Project Eligibilities.

The following ... projects are eligible to receive CWSRF assistance: ...

Nonpoint Source.

Assistance to any public, private, or nonprofit entity for the implementation of a state nonpoint source pollution management program, established under CWA Section 319.”

²³⁰ See, *e.g.*, Christopher Antoine, *Increasing Living Shoreline Implementation in Virginia: Legal and Policy Recommendations* 18 (Va. Coastal Policy Ctr. 2018): “Importantly, any funding sources for living shoreline installation provided by state agencies or organizations should be free from limitations regarding their combination or use; and any regulatory or tax relief provided should be streamlined so as to encourage its use.” [citing email from John Bateman, Regional Planner, Northern Neck Planning Dist. Comm’n (Oct. 2, 2018)], <https://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=1048&context=vcplclinic>.

²³¹ *Id.*

²³² See Va. Dep’t of Conservation and Recreation, Land Preservation Tax Credit, [Land Preservation Tax Credit](#) (last visited Nov. 8, 2025).

²³³ Va. Code §§ 58.1-510 *et seq.*, Virginia Land Conservation Incentives Act of 1999.

²³⁴ Va. Dep’t of Conservation and Recreation, *supra* n. 232.

²³⁵ The Open Space Land Act, for example, defines a “public body” as “any state agency having authority to acquire land for a public use, or any county or municipality, any park authority, any public recreational facilities authority, any soil and water conservation district, any community development authority formed pursuant to Article

significant, depending on the width of the parcel and the depth of the intertidal zone; but it would offer landowners a tax credit for land that they probably are not able to build upon,²³⁶ yet for which they must pay real property taxes - which could provide sufficient incentive to install a living shoreline when funding assistance is available.

Additionally, the General Assembly could help to address this situation by considering a statutory revision to deem installation of living shorelines to be in the public interest. The law could state that living shorelines provide broad public benefits such as protecting shorelines and wetlands, improving water quality and providing habitat/natural resources, so there is a presumption that state funds can be used for installation of living shorelines on private properties when certain specified conditions are met such as shoreline length, severity of water quality impacts from erosion, etc. The eligibility requirements for using state funds then could be strengthened to recognize the public benefits accrued from shoreline erosion control and wetland protection or restoration projects that occur in privately owned intertidal zones as well as offshore on state-owned bottomland. To help ensure that public funds are being spent wisely, the funding requirements also could include more specificity regarding the principles of good design for erosion control measures and require that the particular site conditions for a proposed project are evaluated sufficiently. That would not solve difficulties with using some federal funding sources, but it would make a clear statement concerning the use of state appropriations.

C) Acquisition of Permission to Encroach for Shoreline Stabilization Projects

A third approach to addressing the challenges that can be posed by the use of public funds to install living shorelines or other shoreline stabilization measures on private property in an MLW state is to obtain permission to access and alter the intertidal zone. In addition to fee simple acquisition, there are multiple legal instruments available, a number of which have been discussed in this paper:

- For projects where the property owner will hire the contractors and oversee the work, and there is only a need for temporary access by the funder to inspect the construction and maintenance, a landowner agreement such as the one used by the VCAP can be used (see **Appendix VIII**).

- When a party building a shoreline stabilization project has no need for future access, or has a local partner handling the acquisition of any necessary perpetual easements, rights of way,

6 (§ 15.2-5152 et seq.) of Chapter 51 of Title 15.2, or the Virginia Recreational Facilities Authority.” Open-Space Land Act, Va. Code § 10.1-1700.

²³⁶ The land could be unsuitable for building upon either due to flooding risk or due to the restrictions imposed by the Chesapeake Bay Preservation Act (Va. Code §§ 62.1-44.15:67 *et seq.*) and attendant regulations that restrict development within the 100-foot Resource Protection Area adjacent to perennial water bodies. *See* Chesapeake Bay Preservation Area Designation and Management Regulations, 9 Va. Admin. Code 25-830-140, Development criteria for Resource Protection Areas.

or fee simple purchases, then a temporary easement or Authorization For Entry For Construction such as the one used by the U.S. Army Corps of Engineers²³⁷ can be used during construction.

- If a shoreline stabilization project requires permanent access by a funder or regulator for future maintenance checks, then a nonpossessory easement in perpetuity can be used. Such an easement can involve multiple adjacent property owners if it is a multi-parcel project.

- Where there needs to be a binding agreement that the current and future landowners will or will not take certain actions, a deed provision containing restrictions that is recorded at the courthouse and conveys with the property, such as VDEM's Deed of Nonconversion (see **Appendix III**), can be used.

- When necessary, contract agreements, licenses and temporary easements also can be used to apply for permits for a project until funding for fee simple or perpetual easement acquisition becomes available.

In addition to gaining access to privately owned intertidal zones via legal instruments, another path to help enable access is for the legislature to consider an amendment to Article XI of the Virginia Constitution to expressly state that the Commonwealth has the authority to exercise its police powers in the intertidal zone to protect the public health, safety and welfare, like in Pennsylvania,²³⁸ and that those police powers include (or are limited to) engaging in projects to stabilize severely eroding shorelines. Although that approach would not shift property lines nor ownership of the intertidal zone, it would be a change in regulatory approach and thus would likely face significant opposition. It also would provide the opportunity for further elaboration from the State as to how shoreline stabilization efforts are in the general public interest in order to help justify the use of public funds for them.

IX. Conclusion

Virginia's status as an MLW state can pose challenges for those seeking to use public funds for resilience projects at the coastline. Some of those challenges can be overcome by obtaining permission to encroach on privately owned intertidal zones using one of the legal instruments described above, and by using alternative funding sources that do not prohibit use of the funds to benefit individual privately owned properties. In addition, there are opportunities for Virginia to encourage the installation of offshore living shorelines that do not encroach on the intertidal zone and provide additional plantings of SAV and new habitat areas. Further clarification concerning the circumstances when such nature-based features can be used, and how much ecological services they need to provide, would enable their use and help the Commonwealth to implement its living shoreline statutory mandate. There also are several

²³⁷ See U.S. Army Corps of Engineers, CEMP-CR Memo, *supra* n. 107. Both the Joint Permit Application and the new Corps Regulatory Request System (RRS – see <https://rrs.usace.army.mil/rrs>) also require property owners to sign a standard Right of Entry Form at the time of application, accessible at the HQ USACE Publication website, <https://www.publications.usace.army.mil/USACE-Publications/Engineer-Forms/>.

²³⁸ See *infra* Section VII.

policy changes that may support the implementation of this mandate, including more regulatory clarity around baseline ecological requirements of living shorelines, and the use of dredged material for shoreline stabilization measures; additional state funding for programs that support shoreline stabilization projects that encroach on private land, and updating the funding conditions to increase flexibility; and statutory revisions deeming the installation of living shorelines to be in the public interest to better enable the use of public funds for such projects, or even a constitutional amendment providing authority for the exercise of police powers in the intertidal zone to protect public health and safety, including or limited to the installation of shoreline stabilization measures in certain circumstances.

APPENDICES

Appendix I

Template Delaware Grant Agreement Between DNREC and Project Partner and Living Shoreline Cost Share Program Guidelines

Living Shoreline Cost Share Program Guidelines

Participants of the cost share program should be aware of the following guidelines:

1. Cost share is only available for projects located throughout the state of Delaware.
2. Assistance is available for landowners/HOAs whose shorelines are experiencing or at risk for erosion.
3. Participants should be interested in making habitat and water quality improvements to their local waterway.
4. Eligible shorelines are located within the targeted watersheds (see map at bottom of this document).¹
5. Cost share will provide up to 60% of the actual cost of the project, not to exceed program limitations, with landowners covering the remaining costs. See funding tiers below.
6. The cost share funding shall not apply to any portion of the project that is not approvable under this program. Cost share funding will not apply to expenses that are not included in permissible design, such as personal equipment, non-native plants, and other unrelated components (lighting, sod, decorative landscaping features, etc.).
7. Installation shall be maintained in functioning condition for five years post-creation by the landowner in consultation with cost share program staff. Reasonable maintenance expenses will be supported by the cost share program if funds are available. If property changes ownership within maintenance period LSCSP staff must be notified.
8. The following components of **tidal water** projects will be considered for cost share:
 - i. Projects that use less than 1 cubic foot of rock per linear foot of shoreline, in combination with native wetland² vegetative components.
 - ii. Marsh toe sill revetment designs that use less than 0.5 cubic yards of rock per linear foot of shoreline.
 - iii. Native wetland² vegetative components must be at least twice the area of rock footprint waterward of Mean Higher High Water (MHHW).
 - iv. Utilizing recycled shell bags and/or oyster castle components in combination with components listed above.
 - v. Utilizing appropriate and sustainable living shoreline techniques as laid out in the DE Living Shorelines Committee [guidance](#) document are favorable.
9. Written approval in the form of a letter and applicable permit from the [DNREC Division of Water's Wetlands and Waterways Section \(WWS\)](#), is required before installation can begin.
10. Access to the installation by DNREC staff for consultation, as-built inspection, and annual maintenance checks for five years is required and will be scheduled with landowners.

Your information will be submitted to and reviewed by the LSCSP. Project approval will depend on the applications received, and proposal will be reviewed for appropriateness and sustainability. Please contact Kayla Clauson at Kayla.Clauson@delaware.gov – Phone: (302) 608-5531 or 302-739-9939, with any questions you may have.

¹ If property falls within more than one eligible watershed, you may only use funding from one source.

² Vegetation must be obligate or facultative wetland plants (i.e., hydrophytic plants).



A step-by-step summary of the process to obtain cost share funding is as follows:

1. Complete online [inquiry form](#) to Living Shoreline Cost Share Program (LSCSP).³
2. Submit an approvable design, [basic application form](#) and necessary [appendices](#) to the DNREC, Division of Water, [Wetlands and Waterways Section \(WWS\)](#), 89 Kings Highway, Dover, Delaware 19901 - Phone: (302) 739-9943.⁴
3. Once approved, submit project design as well as state and federal permit(s) along via email to kayla.clauson@delaware.gov.⁵
4. Design will be reviewed for criteria by LSCSP staff. Once approved, a cost share approval letter will be issued.
5. A finalized landowner agreement letter will be issued and signed.
6. Once agreement with DNREC is signed, [register with the state of Delaware Division of Accounting for reimbursement](#).⁶
 - a. Please see the “What Do I Need to Know to Receive Funds?” section at the bottom of these guidelines.
7. Construct the project according to approved plans. Save all applicable receipts.
8. Notify cost share program staff once project is completed to schedule as-built inspection.
9. Submit receipts to cost share program staff showing the items and quantities purchased, costs of materials, labor, equipment rental, etc. for the cost share eligible portion of the project. Reimbursement will take about 8-10 weeks following review.

Projects will be funded on a first come, first serve basis after designs and permits are submitted to the LSCSP and approval letter is issued.

³ If HOA or adjacent properties are inquiring, fill out one inquiry form.

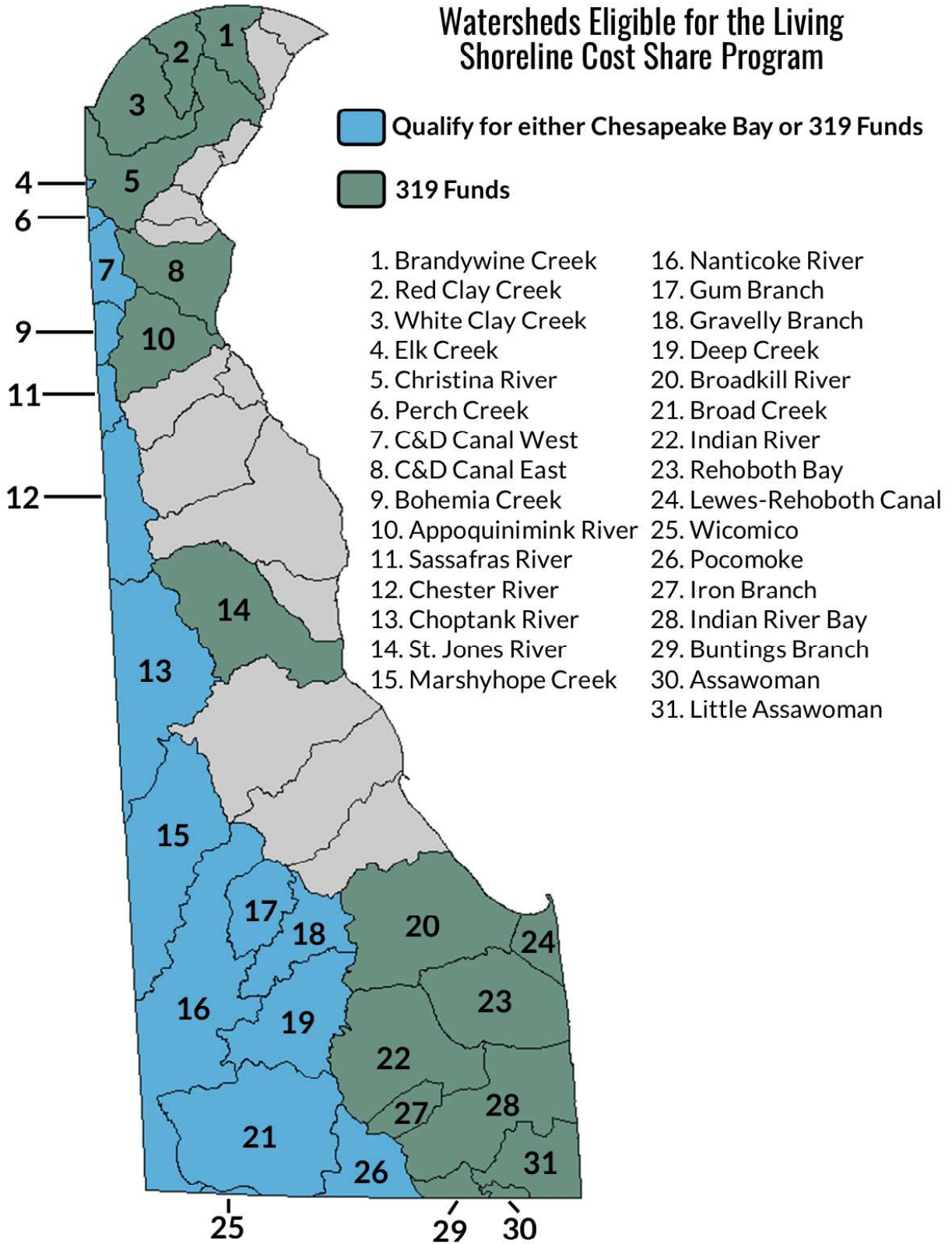
⁴ For multiple landowners: each individual landowner/consultant will need separate permits.

⁵ If HOA or adjacent properties are applying together, send all projects in one email.

⁶ For multiple landowners: each individual landowner/consultant will need to register.



Watersheds Eligible for the Living Shoreline Cost Share Program



Funding Tiers by Program and Project Types

	Chesapeake Bay Watersheds		319 Watersheds	
Tiers	Tier 1: Single landowner	Tier 2: Multiple landowners or HOA/community	Tier 1: Single landowner	Tier 2: Multiple landowners or HOA/community
Landowner spends at least (on eligible expenses):	\$21,000	\$21,000	\$19,000	\$38,000
Cost share program reimburses up to:	\$13,000	\$13,000	\$11,000	\$22,000
<i>*Note: Some watersheds may qualify for either Chesapeake Bay or 319 funds, indicated BLUE on the map*</i>				
Examples:				
Actual project cost:	\$10,000	\$10,000	\$11,000	\$29,000
DNREC reimburses:	\$6,200	\$6,200	\$6,380	\$16,820

What Do I Need to Know to Receive Funds?

The state of Delaware requires registration to receive reimbursement through the [eSupplier portal](#). The state of Delaware does not accept the federal W-9 form.

1. To register for the first time with the state of Delaware, the [New Supplier Registration Guide](#) will help walk you through the process.
 - a. If you signed up in the past as a supplier to receive payment, you may still need to update your information to reactivate your account.
2. As the recipient of reimbursement from the state of Delaware, you still must complete the User Registration [HERE](#).
 - a. *Note:* If you select ACH for payment, it will be deposited directly into the account you provide. This does expedite the payment process.
3. If you still have questions or need assistance with the process, feel free to call the state of Delaware's Division of Accounting at (302)-526-5600.



*****UPDATE HEADER WITH GRTS GRANT PROJECT NUMBER*****
GRANT AGREEMENT
BETWEEN
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
AND
(INSERT Project partner name here)
TITLED
CONTRACT FOR SUB-RECIPIENT PROFESSIONAL SERVICES
(insert project name)
IN (pick 1 of 3 counties) COUNTY, DELAWARE
EPA FEDERAL FUNDS
NONPOINT SOURCE PROGRAM

THIS AGREEMENT (“Agreement”) is made as of _____, 20__ (“Effective Date”) by and between The State of Delaware, **Delaware Department of Natural Resources and Environmental Control** (“Grantor”), and the **(insert project partner name)** (“Grantee”).

W I T N E S S E T H :

WHEREAS, Grantor is charged with administering and granting funds from the Nonpoint Source Program (~~FY 21~~- 40034, herein after called the Grant) to accomplish Delaware’s Nonpoint Source Program (~~October 1, yyyy – September 30, yyyy~~).

Commented [BA(1)]: Update Fiscal year
Commented [BA(2)]: This should match the fiscal year cycle

WHEREAS, Grantor is charged with implementing the Delaware’s Nonpoint Source Program (~~October 1, yyyy – September 30, yyyy~~).

WHEREAS, Grantee is identified with specific tasks in Delaware Nonpoint Source Program Grant Work Plan (~~October 1, yyyy – September 30, yyyy~~).

WHEREAS, Grantor has resolved to Grant **(insert amount spelled out in words)** **(Sinsert numerical amount)** to the Grantee in accordance with the terms and conditions of this Agreement and Attachments hereto.

NOW THEREFORE, in consideration of the mutual promises contained herein and for other good and valuable consideration, the sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. Obligation(s) of Grantee.
 - (a) Grantee shall use the Grant Funds to carry out the **(INSERT PROJECT NAME HERE)** herein described and in the Attachment hereto as Appendix A.

- (b) The Grantee must comply with the applicable Federal Terms and Conditions herein described and in the Attachment hereto as Appendix B.
 - (c) The Grantee must comply with the applicable Environmental Protection Agency general terms and conditions as a sub-recipient as outlined by the EPA effective **October 1, 2021** herein described and in the Attachment hereto as Appendix C.
 - (d) Any conflict or inconsistency between the provisions of the following documents shall be resolved by giving precedence to such documents in the following order: (a) this Agreement (including any amendments or modifications thereto); (b) Appendix A, Scope of Work; The aforementioned documents are specifically incorporated into this Agreement and made a part hereof.
 - (e) Grantee shall appoint a “Project Manager” or “Contact Person” who will oversee the completion of the Grant Project and serve as a person of contact for Grantee in communications with Grantor. Grantee will notify Grantor of changes to the “Project Manager” or “Contact Person” within a reasonable time not to exceed thirty (30) days.
 - (f) Grantee shall undertake to conduct and complete the Project in a professional and competent manner. Grantee shall take reasonable efforts to assure that the Project is in conformance with all pertinent federal, state, and local statutes, codes, ordinances, resolutions and other applicable regulations. Grantee shall solely bear the costs of permits and other relevant costs required in the performance of the Project.
 - (g) Grantee shall provide the required matching funds in the amount of **(insert amount spelled out in words) (Sinsert numerical amount)** toward the cost of development of the project as described in Appendix A.
 - (h) Grantee shall keep accurate records of the expenditures of the grant funds. Appropriate internal control procedures should be established by the Grantee.
 - (i) Grantee request for reimbursement of eligible expenses may be made one time upon completion and inspection of the work.
 - (j) All documentation supporting the claim for reimbursement must be kept readily available for examination by the State. The financial records, including all documents to support entries on the accounting records and to substantiate charges for each project, shall be included as part of the required documentation. All such records shall be retained and available for inspection for a period of three years after final payment.
 - (k) Grantee shall abide by the Delaware Department of Natural Resources and Environmental Control’s Living Shore Cost Share Program Guidelines for the duration and upon completion of the Project.
2. Obligations of Grantor: Disbursement & Limitation of Grant Funds.

Commented [BA(3)]: Most likely October 1 but update year

- (a) Grantor shall serve as administrator of the Grant Funds under this Agreement. Grantor shall furnish Grant Funds to Grantee on a reimbursable basis. Upon incurring eligible expenses, Grantee shall provide itemized paper and/or electronic documentation of expenses to the Grantor for invoicing and reimbursement.
- (b) Grantor shall reimburse Grantee within eight to ten weeks (60-75) days of receipt of Grantee's Reimbursement Request. If Grantor disputes a portion of a Reimbursement Request, Grantor agrees to pay the undisputed portion of the Reimbursement Request within Grantee within eight to ten weeks (60-75) days of receipt and to provide Grantee a detailed statement of Grantor's position on the disputed portion of the Reimbursement Request within thirty (30) days of receipt.
- (c) Grantor shall not be obligated to reimburse Project costs incurred by Grantee on a date before a Purchase Order allocating the Grant Funds has been approved by the Delaware Department of Finance. Grantor shall notify Grantee within a reasonable time not to exceed fourteen (14) days of when the Purchase Order has been approved. Grantee shall be solely responsible for all costs and expenses incurred before a Purchase Order allocating the Grant Funds is approved. Grantor's total liability that may become due under this Agreement is limited to the total maximum expenditure(s) authorized in Grantor's Purchase Order.
- (d) Grantor's obligation to reimburse Grantee will not exceed the total amount of Grant Funds **(insert total grant \$ amount here)** awarded to Grantee from Nonpoint Source Program Federal Funds and authorized in the Purchase Order. Grantee is solely responsible for any and all costs or expenses incurred in excess of the Grant Funds awarded. Grantor is in no way liable for any such excess costs, fees or expenses.
- (e) Grantee shall submit final invoice for all remaining eligible project costs, along with its final project report, within the grant timeframe. Any awarded Grant Funds remaining after Grantor has made its final reimbursement to Grantee shall be returned to the Grant Account.
- (f) Grantor reserves the right to withhold disbursement of Grant Funds if Grantor determines, in its sole discretion, that Grantee's performance or completion of the Project is in violation of any federal, state, or local law or rule; or creates a risk to the public health, safety or environment.
- (g) Grantor is a sovereign entity, and shall not be liable for the payment of federal, state and local sales, use and excise taxes, including any interest and penalties from any related deficiency, which may become due and payable as a consequence of this Agreement.

3. Term.

- (a) This Agreement shall commence upon the execution of this Agreement by the parties, including the issuance of a Purchase Order allocating the Grant Funds, and shall continue until Grantor provides Grantee its final disbursement of Grant Funds upon submission of the final project invoice, or by **(insert project end date)**, whichever

Commented [BA(4)]: Just needs to be month, year.

occurs first. Any grant extension request by the Grantee must be in writing to the Grantor by (insert date here).

Commented [BA(5)]: 60 days prior to project end date. So, if project ends on June 2024, this date should say April 30, 2024.

4. Independent Status. It is understood that Grantee is an independent entity, and is not an agent or employee of Grantor. Grantee shall complete the Project in its own manner and method. Grantee shall be solely responsible for, and shall indemnify, defend and save Grantor harmless from all matters relating to the payment of its employees, including compliance with social security, withholding and all other wages, salaries, benefits, taxes, exactions, and regulations of any nature whatsoever.
5. Modifications. Grantee shall provide written notice to Grantor within a reasonable time not to exceed Thirty (30) days of planned changes or modifications which impact the scope, purpose, objectives, or nature of the Project for which the Grant Funds were awarded. If Grantor determines that the changes or modifications are of such significance as to no longer qualify the Project for Grant Funds, Grantor may terminate this Agreement in its discretion.
6. Assignment. Any attempt by Grantee to assign or otherwise transfer any interest in this Agreement without the prior written consent of Grantor shall be void.
7. Termination.
 - (a) Grantor may, by written notice to Grantee, terminate this Agreement if it is found that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by Grantee or any agent or representative of Grantee to any officer or employee of the State of Delaware or Grantor with a view toward securing a contract or securing favorable treatment with respect to the awarding of Grant Funds or making of any determinations with respect to the performance of this Agreement.
 - (b) If sufficient funds are not appropriated by the Delaware General Assembly, or other appropriate federal or state agency, to sustain in whole or in part Grantor's performance under this Agreement; or if such appropriation is reduced such that the amount of the appropriation is insufficient to sustain said performance; this Agreement shall be null and void at the insistence of Grantor. Funds cannot be recalled or otherwise taken back once disbursed to Grantee.
 - (c) Grantee acknowledges that Grantor has an obligation to ensure that public funds are not used to subsidize private discrimination. Grantee recognizes that if it refuses to hire or do business with an individual or company due to reasons of race, color, gender, ethnicity, disability, national origin, age, or any other protected status, Grantor may declare Grantee in breach of this Agreement, terminate this Agreement, and designate Grantee as non-responsible.
 - (d) Grantee warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, or a percentage, brokerage or contingent fee. For breach or violation of this warranty, Grantor shall have the right to terminate this Agreement.

8. Indemnification. Grantee shall indemnify and hold harmless Grantor, the State of Delaware, its agents and employees, from any and all liability, suits, actions or claims, together with all reasonable costs and expenses (including attorneys' fees) directly arising out of (A) the negligence or other wrongful conduct of Grantee, its agents or employees, or (B) Grantee's breach of any material provision of this Agreement not cured after due notice and opportunity to cure, provided as to (A) or (B) that (i) Grantee shall have been notified promptly in writing by Grantor of any notice of such claim; and (ii) Grantee shall have the sole control of the defense of any action on such claim and all negotiations for its settlement or compromise.
9. Insurance.
- (a) Grantee shall maintain the following insurance during the term of this Agreement or any extension thereto:
1. Worker's Compensation and Employer's Liability Insurance in accordance with applicable law, and
 2. Comprehensive General Liability - \$1,000,000.00 per occurrence/\$3,000,000 general aggregate, and
 3. Medical/Professional Liability - \$1,000,000.00 per occurrence/\$3,000,000 general aggregate; or
 4. Miscellaneous Errors and Omissions - \$1,000,000.00 per occurrence/\$3,000,000 general aggregate, or
 5. Product Liability - \$1,000,000.00 per occurrence/\$3,000,000 general aggregate, and
 6. If required to transport state employees, Automotive Liability Insurance covering all automotive units used in the work with limits of not less than \$100,000 each person and \$300,000 each accident as to bodily injury and \$25,000 as to property damage to others.
- (b) Grantee shall provide Forty-Five (45) days written notice of cancellation or material change of any policies.
- (c) Before any activity in furtherance of this Agreement is undertaken by Grantee, the Certificate of Insurance and/or copies of the insurance policies, referencing the Agreement Number stated herein, shall be filed with the State. The certificate holder is as follows: **DNREC, Division of Watershed Stewardship.**
- (d) In no event shall the State of Delaware be named as an additional insured on any policy required under this Agreement.

10. Notices. All notices, reports or other written communication required or permitted herein shall be given in writing or electronically to the addresses set forth below:

If to Grantor:

Delaware Department of Natural Resources & Environmental Control
Division of Watershed Stewardship
Watershed Assessment & Management Section
Attn: Kayla Clauson
Enterprise Business Park
285 Beiser Blvd., Suite 102
Dover, DE 19904
Phone: (302) 739-9939
Email: kayla.clauson@delaware.gov

If to Grantee:

Delaware Center for the Inland Bays
Dr. Marianne Walch
Project Manager
39375 Inlet Road
Rehoboth Beach, DE 19971
Phone: 302-226-8106
Email: science@inlandbays.org

Commented [BA(6)]: Update with project partner info from RFP

- a) The “Grantor” and “Grantee” mutually agree to communicate in a timely manner, keeping each other informed of milestone changes in project scope, project meetings, field trips, events, media contacts, proposals and other activities that can support project success, timely execution, project tasks or avoid findings of non-compliance with federal policies, rules, and regulations.
- b) The “Grantee” will provide the “Grantor” at least three weeks advance notice of all planned media events and press releases related to this grant. The “Grantee” shall provide such notice to the “Grantor” contact person listed in the grant agreement.
11. Force Majeure. Neither party shall be liable for any delays or failures in performance due to circumstances beyond its reasonable control.
12. Entire Agreement; No Oral Modification. This Agreement constitutes the entire agreement pertaining to the subject matter hereof between Grantor and Grantee. Neither this Agreement nor any Appendix may be modified or amended except by the mutual written agreement of the parties. The provisions of this Agreement supersede all prior oral and written applications, quotations, communications, agreements and understandings of the parties with respect to the subject matter of this Agreement. No waiver of any provision of this Agreement shall be effective unless it is in writing and signed by the party against which it is sought to be enforced.

13. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware, except where Federal Law has precedence. Grantee consents to jurisdiction and venue in the State of Delaware.
14. Severability. If any term or provision of this Agreement shall be held illegal, invalid or unenforceable by a Court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision of this Agreement. Such term or provision held invalid shall be deemed modified to the extent necessary in the Court's opinion to render such term or provision enforceable, and the rights and obligations of the parties shall be construed and enforced accordingly, preserving to the fullest permissible extent the intent and agreements of the parties herein set forth.
15. Captions. The captions in this Agreement are inserted only for the purpose of convenient reference and shall not be construed to define, limit or prescribe the scope or intent of this Agreement or any part thereof.
16. Surviving Clauses. The following clauses survive the termination of this Agreement: Section 8 "Indemnification;" Section 13 "Governing Law."
17. Miscellaneous Provisions.
 - (a) The rights and remedies of Grantor provided for in this Agreement are in addition to any other rights and remedies provided by law. Grantor and the State of Delaware do not waive its sovereign immunity by entering into this contract and fully retain all immunities and defenses provided by law with regard to any action based on this Agreement.
 - (b) Grantee will not use the State of Delaware's name or the Great Seal of the State of Delaware, either expressly or impliedly, in any of its advertising or soliciting materials without the State of Delaware's express written consent.
 - (c) Grantee certifies that the information reported herein is true, accurate and complete to the best of Grantee's knowledge based upon reasonable diligence of individuals with material knowledge of the Project. Grantee understands that these representations are made in support of claims for government funds.

[This section left intentionally blank; signatures follow]

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed as of the date and year first above written.

**GRANTOR
STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL**

Witness: _____

Name: Shawn M. Garvin

Title: Secretary

Date: _____

Date: _____

[

**GRANTEE
Delaware Center for the Inland Bays**

Commented [BA(7)]: Update with project partner

Witness: _____

Name: insert project partner name

Title: insert title

Date: _____

Date: _____

Appendix II

VDEM Voluntary Participation Agreement



Virginia Department of Emergency Management

VOLUNTARY PARTICIPATION AGREEMENT For Property Owners

Project Applicant: (Government Agency)	Property Owner(s):
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- I/We, _____, am/are the owner(s) of the property located at
(Street address, city, zip)
- I/We have been notified by _____ (city, county, or town) that my/our property may be included in a proposed hazard mitigation project.
- I/We have been notified that the jurisdiction may wish to **(initial all, which apply):**
purchase; **elevate;** the above property. If I/we agree to sell, it will be necessary for me/us to move permanently from the property. Elevation of the structure will require temporary displacement from the structure.
- I/We acknowledged I/we understand that I/we will not be required to sell the above property to the above jurisdiction, and that the jurisdiction will not use the right of eminent domain to obtain the property in the event I/we do not wish to sell it. I/We understand that this means that I/we do not have to sell the property to the jurisdiction.
- I/We acknowledge my/our responsibility to fulfill all documentary, notification, and obligatory requirements specified by the grant guidance and 44 CFR including but not limited to: maintaining Flood Insurance; Non-Conversion Deed of Trust; disclosure of any other source of potential Duplication of Benefit.
- Since the Hazard Mitigation Assistance grant programs are voluntary, property owners are not entitled to the relocation benefits provided by the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act. I/we will not make claim for any such benefits.
- The project applicant (jurisdiction) stipulates and agrees that:
 - It understands this program is voluntary for the property owners and the right of eminent domain cannot be used to obtain the property; and
 - The property identified above is not a part of non-HMA acquisition project where all or substantially all of the property within the area is to be acquired within specific time limits.
 - The homeowner shall provide appropriate documentation, notification, and disclosures.

This agreement shall expire on _____, unless the property has been acquired by that date.

Signed _____
Property Owner(s) **Date**

Signed _____
Property Owner(s) **Date**

Signed _____
City/County/Town Representative – Print name and title **Date**

Appendix III

VDEM Declaration of Nonconversion Agreement

DECLARATION OF NONCONVERSION AGREEMENT

Whereas the PROPERTY OWNER(s) is/are the record owner(s) of all real property located at _____ (Address), in _____ (City/Town), in _____ (County), in the Commonwealth designated in the Tax Records as _____.

Whereas the PROPERTY OWNER(s) has/have applied for a permit or variance to elevate a structure on the above listed property to the strict elevation requirements of _____ the Floodplain Management Ordinance of _____ (Community) and under Permit Number _____, and

Whereas the PROPERTY OWNER(s) agree/agrees to the recordation this declaration on the deed of the above named property and certifies that the following covenants, conditions and restrictions are placed on the affected property and affects rights and obligations of the Owner(s) and shall be binding on the PROPERTY OWNER(s), his/her/their heirs, personal representatives, successors and assigns.

Upon the terms and subject to the condition as follows:

1. At this site, the Base Flood Elevation (BFE) is _____ feet above mean sea level, National Geodetic Datum _____.
2. Enclosed areas below the BFE shall be used solely for parking of vehicles, limited storage or access to the building. Any interior walls, ceilings and floors below the BFE shall be unfurnished or constructed of flood resistant materials. Mechanical, electrical and plumbing devices shall not be installed below the BFE or shall be certified flood-proofed.
3. The walls of the enclosed areas below the BFE shall be equipped, and remain equipped with vents as required or engineered breakaway walls as required.
4. Any alterations or changes from these conditions constitute a violation and may render the structure uninsurable or may increase the cost of flood insurance. The jurisdiction issuing the aforementioned Permit and enforcing the Ordinance may take appropriate legal action to correct any violation.
5. The vents on the property will remain open and not covered in perpetuity.
6. This property has received Federal hazard mitigation assistance. Federal law requires that flood insurance coverage on this property must be maintained during the life of the property regardless of transfer of ownership of such property. Pursuant to 42 U.S.C. §5154a, failure to maintain flood insurance on this property may

prohibit the owner from receiving Federal disaster assistance with respect to this property in the event of a flood disaster.

7. The Property Owner is also required to maintain this property in accordance with the flood plain management criteria of Title 44 of the Code of Federal Regulations Part 60.3 and (Community) Flood Ordinance.

Witness the following signatures:

Homeowner

Date

In _____ (City or County) in the Commonwealth of Virginia, the foregoing instrument was acknowledged for _____ (homeowner), before me on before me, on this _____ day of _____, 20____.

Notary Public Signature

My Commission Expires on

Date

Notary Registration No:

Appendix IV

VDEM Hazard Mitigation Assistance Program Elevation Compliance Record

ATTACHMENT B

Hazard Mitigation Assistance Program Elevation Compliance Record

Project Description _____
Address _____
City _____ State _____

The proposed project, plans and specifications are in compliance with the following:

1. The standards and requirements of the _____ floodplain management ordinance;
2. are designed and constructed to not adversely affect the flooding of surrounding properties;
3. are designed and constructed to resist flood hazard forces.

Project plans and specifications include:

1. Existing and proposed lowest reference floor elevations;
2. the base flood elevations, velocity and other data from the FIRMs and/or other studies;
3. existing and proposed structures, utilities and improvements;
4. that a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area below the lowest floor are provided. That the bottom of all openings shall be no higher than one foot above adjacent grade;
5. that the elevation shall be constructed with materials resistant to flood damages;
6. that electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities will be installed above the Base Flood Elevation, are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

This compliance record is conditioned upon the actual construction of the project being in strict accordance with the plans and specifications described herein. I attest that the project plans and specifications include the above requirements.

Signature _____
Name (print or type) _____
Title _____
Date _____

(Refer to FEMA Region III Elevation Guidelines, Permits & Process, #5 and Additional Requirements #3 & #4 for further explanation)

A. Local Building Inspector Sign-off

I attest that upon final inspection for _____, that the
Address
structure as built, complies with the Hazard Mitigation Assistance Program Elevation
Compliance Record, and meets the approved plans and specifications.

Signature _____
Name (print or type) _____
Title _____
Date _____

B. Local Floodplain Permit Officer Sign-off

I attest that upon final inspection for _____, that the
Address
Structure, as built, complies with the Hazard Mitigation Assistance Program Elevation
Compliance Record, and is in compliance with the floodplain permit. I have also included
a copy of the Elevation Certificate, as prepared by the homeowner's architect/engineer or
licensed surveyor.

If the property is on the Repetitive Flood Claims and/or on the Severe Repetitive Loss list,
a copy of the AW501 form is included. If not, no AW501 form will be attached.

Signature _____
Name (print or type) _____
Title _____
Date _____

Appendix V

**Mass. Dept. of Env't Protection, Beach Nourishment - MassDEP's Guide to Best Management Practices
for Projects in Massachusetts (March 2007)**

Public Access Easement

I (WE) _____ of _____ the
“Grantor(s),” which term shall, in perpetuity of the nature and character and to the extent hereinafter set forth, over a parcel
(the “Property”) located in _____, at the following address: _____

WHEREAS, Grantor is sole owner in a fee simple of certain real property (the “Property”) in _____, more particularly described above; and

WHEREAS, the property possesses natural, scenic, and open space values of great importance to the people of Harwich and the people of the Commonwealth of Massachusetts; and WHEREAS, the value of the property has been (or will be) restored, enhanced, and protected (“The Nourished Area”) by a locally funded beach nourishment project more particularly described in the plans provided at Town Hall; and

WHEREAS, the Grantor has received a direct benefit from said publicly-funded beach nourishment project;

NOW, THEREFORE, in consideration of the facts recited above and the mutual covenants, terms, conditions, and restrictions contained herein, and pursuant to laws of the Commonwealth of Massachusetts, the Grantor hereby voluntarily grants and conveys to the Grantee an easement in perpetuity over the Property of the nature and character and to the extent hereinafter set forth: There is granted to the Grantee, the residents of _____ and the public generally, a public on-foot right-of-passage along and across the shore of the coastline between the mean high water line and the entire “nourished area” subject to the following restrictions and limitations:

Said public on-foot right-of-passage shall not be exercised (a) later than one-half hour after sunset nor earlier than sunrise; (b) where the Commissioner of the Department of Conservation and Recreation for the purpose of protecting marine fisheries and wildlife or for controlling erosion, designates and posts natural area of critical ecological significance as areas in which, on either a regular or seasonal basis as circumstances in each situation require, the public not exercise the on-foot free right-of-passage; (c) where there exists a structure, enclosure, or other improvements made or allowed pursuant to any law or any license, permit, or other authority issued or granted under the General Laws or where exist agricultural fences for the purposes of enclosing livestock, provided that such area is clearly and conspicuously posted.

The Grantor(s), and the heirs, successors, and assigns of the Grantor(s) covenant and agree to reimburse the Grantee all reasonable cost and expenses (including without limitation counsel fees) incurred in enforcing this easement or in remedying or abating and violation thereof. By its acceptance the Grantee does not undertake any liability or obligation relating to the condition of the Property.

The parties may execute this instrument in two or more counterparts, which shall, in the aggregate, be signed by both parties: each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

The Grantor agrees to incorporate the terms of this Restriction in any deed or other legal instrument by which he divests himself of any interest in all or a portion of the Property.

Executed under seal this _____ day of _____, 200__

Appendix VI

Town of Marshfield Beach Nourishment Easement

BEACH NOURISHMENT EASEMENT

I (WE) _____ (“Grantor”), of _____, hereby grant to the Town of Marshfield (“Grantee”), acting by and through its Board of Selectmen, having an address of Marshfield Town Hall, 870 Moraine Street, Marshfield, Massachusetts, 02050, an easement on the terms set forth below in, on, under and over a portion of the property located at _____, Marshfield, Massachusetts, and described in a deed recorded with the Plymouth Registry of Deeds in Book _____, Page _____ or Certificate of Title No. _____ filed with the Plymouth Registry District of the Land Court.

WITNESSETH:

WHEREAS, Grantor is sole owner of the Property in Marshfield, as more particularly described above; and

WHEREAS, the Property possesses natural, scenic, and open space values of great importance to the people of Marshfield and the people of the Commonwealth of Massachusetts; and

WHEREAS, the value of the Property has been or will be restored, enhanced, and protected by a beach nourishment project funded by federal, state, and local granting authorities, which project is more particularly described in the plans on file with the Marshfield Town Clerk (as the same may be amended or supplemented from time to time, the “Beach Project”); and

WHEREAS, Grantor has received a direct benefit from said publicly-funded Beach Project.

NOW, THEREFORE, in consideration of the facts recited above and the mutual covenants, terms, and conditions set forth herein, and pursuant to laws of the Commonwealth of Massachusetts, Grantor hereby voluntarily grants and conveys to Grantee an easement in perpetuity over the portion of the Property the land seaward of the seawall shown, for the following purposes:

1. An easement to the Town, the residents of Marshfield, and to the public at large, to pass and repass the Easement Area by foot subject to the following restrictions: said public on-foot right-of-passage shall not be exercised (a) later than one-half hour after sunset nor earlier than sunrise; (b) where the Commissioner of the Department of Environmental Protection, for the purpose of protecting marine fisheries and wildlife or for controlling erosion, designates and posts natural areas of critical ecological significance as areas in which, on either a regular or seasonal basis as circumstances in each situation require; and (c) where there exists a structure, enclosure, or other improvements within the Easement Area made or allowed pursuant to any law or any license, permit, or other authority issued or granted under the General Laws, provided that such area is clearly and conspicuously posted (unless such license, permit or other authority permits public access).

2. An easement to the Town to use the Easement Area to place, install, construct, preserve, inspect, operate, maintain, repair, rehabilitate, and replace a beach and dune system and other erosion control and storm damage reduction measures and appurtenances thereto, including

the right to deposit sand, plant vegetation, alter the contours on land, construct berms and dunes, nourish and re-nourish periodically, move, store and remove equipment and supplies, erect, maintain and remove silt screens and sand fences, erect and/or remove temporary structures, facilitate preservation of dunes and vegetation through the limitation of access to dune areas, and trim, cut, fell and remove from said land trees, underbrush, debris, obstructions, and any other vegetation, structures, and objects as may be necessary or convenient to exercise the rights granted herein, and for any and all other uses and/or purposes related or incidental thereto. The Town shall have the right to access the Easement Area from time to time by foot, vehicle, or heavy equipment, for any and all purposes stated herein and uses necessary or incidental thereto, including, without limitation, using and temporarily storing, as needed, construction equipment, materials or other incidental items within the Easement Area for the purposes set forth herein.

3. No permanent or temporary buildings, structures, utilities and/or other facilities shall be constructed, installed, maintained and/or placed upon the Easement Area by any party other than Grantee without the prior written consent of Grantee.

4. Grantor agrees, for Grantor and Grantor's heirs, successors, and assigns, not to interfere with the exercise of the rights granted herein. By its acceptance, Grantee does not undertake any liability or obligation relating to the condition of the Property;

5. By signing below, Grantor hereby, for Grantor and Grantor's heirs, successors and assigns, pursuant to G.L. c.79, §7A, waives, releases and forever discharges Grantee, its successors and assigns, from all debt, demands, actions, reckonings, bonds, covenants, contracts, agreements, promises, damages, and liabilities and any and all other claims of every kind, nature and description whatsoever, both in Law and Equity, from or in consequences of the taking of the easements described in this instrument, should Grantee decide to take such easements by eminent domain for the foregoing purposes, and hereby waives an appraisal of damages for said taking and consents to said taking under G.L. c.79, §5B.

6. The parties may execute this instrument in two or more counterparts, which shall, in the aggregate, be signed by both parties: each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

[signature page follows]

Executed under seal this _____ day of _____, 2022.

X _____

X _____

THE COMMONWEALTH OF MASSACHUSETTS

_____, ss.

On this ____ day of _____, 2022, before me, the undersigned notary public, personally appeared _____, who proved to me through satisfactory evidence of identification, which was _____, to be the person whose name is signed on the preceding document, and acknowledged to me that he/she/they signed it voluntarily for its stated purpose.

Notary Public
My Commission Expires:
Expires:

Town of Marshfield

Grant of Easements to the Town of Marshfield for Beach Nourishment Projects

The Town of Marshfield is requesting that you grant the Town certain easements. The purpose of this memo is to clarify a few points and to explain the terms of the Grant of Easement.

What Portion of My Property is Affected by the Grant of Easement: By signing the attached Grant of Easement, you will grant an easement in that portion of your property that lies seaward of the seawall on your property. The easement does not permit the Town or members of the public access to the portion of your property that is landward of the seawall. The easement area includes the beach and runs to the low water mark.

Why Does the Easement State that the Town will Take the Easements By Eminent Domain: The Town anticipates that many of the properties on which it needs easements are subject to mortgages. Note that if the lender forecloses on the mortgage, the foreclosure will terminate the rights that you grant the Town under the Grant of Easements. In order to avoid losing the easement, and thereby jeopardizing the beach nourishment projects, the Town could do two things: first, it could request the lenders to sign a Subordination of Mortgage form, in essence stating that if there is a foreclosure, the lender will not terminate the Town's rights.

Unfortunately, given the pressing need for the Town to move forward with the project, and to avoid the lengthy and cumbersome process of obtaining the lenders' consent, the Town can avoid losing its rights by taking by eminent domain the same rights that you grant to the Town under the Grant of Easement. The purpose of the taking is not to expand on the rights you grant the Town; the taking will have the same effect as obtaining a subordination, that is, it will protect the Town's easement rights from being terminated. The taking will also confirm the rights granted to the Town. For that reason, you will see a provision in the Grant of Easements stating that you consent to the Town acquiring the same rights under the Grant of Easements by a taking if the Town decides to obtain such protections.

Who Signs the Easement and is a Notary Necessary: The Grant of Easements needs to be signed by all the property owners, and a notary public must acknowledge the signature of at least one of the owners. A notary public is available at Marshfield Town Hall.

When does the Town Need the Easements: Please return the signed and notarized Grant of Easement to the Town as soon as possible; the Town must provide evidence of the easements to procure grant funds.

The Town thanks you for your generosity in granting the easements to the Town of Marshfield. We appreciate your cooperation and look forward to a successful project.

Appendix VII

PDEP Landowner Agreement

SAMPLE



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERSHED RESTORATION AND
NONPOINT SOURCE MANAGEMENT

Document Number

LANDOWNER – GRANTEE AGREEMENT

This Agreement, made this May, 14, 2025
(Date)

by Deborah Reyes

(Landowner(s))

residing at 123 Main Street telephone # (814) 724-1234

Hometown, PA 12345
(city) (ZIP)

and Clear County Conservation District
(Grantee)

Project description: The goal of this project is to design and construct 5,000 linear feet of streambank fencing.

The Project is located at: 10 Spring Creek Road, Hometown, PA 12345

Latitude: 41.027 Longitude: -78.653

Section 1 – Agreement Provisions

- A. In consideration of the benefits that incur from the investment in the property, and/or monies received, the Grantee and the undersigned Landowner agree to participate in the Pennsylvania Department of Environmental Protection (“PA DEP”) Grant Program and comply with the terms set forth in this Agreement.
- B. Landowner represents and agrees that he/she is the sole owner of the real property on which the Project is to be performed, or has secured a sufficient property interest, including any easements or right-of-ways, necessary to grant access for the completion and maintenance of the Project. A map of the Project site, including adjacent streams and roads, is attached hereto as Exhibit A (“Premises”).
 - 1. Landowner agrees that the PA DEP and/or Grantee, its employees, agents and contractors shall have the right to enter upon the Premises to perform the work described in the “Scope of Work” attachment of the DEP Grant Agreement. The right to enter shall also include periodic monitoring visits for the life of this Agreement.
 - 2. By offering the Premises for implementation of this Project, Landowner agrees to allow access, design preparation and implementation and repair of the Project for the duration of construction and for the time period identified in Section 1, Paragraph B (11) of this Agreement.

3. Grantee agrees that the Conservation Practices/Best Management Practices ("CP/BMPs") needed to correct the problems identified in the "Scope of Work" attachment of the DEP Grant Agreement shall be performed according to the (*Check all that apply*):
 - a) The NRCS Pennsylvania Field Office Technical Guide,
 - b) The Guidelines for Natural Stream Channel Design in Pennsylvania,
 - c) The USDA NRCS National Engineering Handbook,
 - d) A Handbook for Constructed Wetlands, Volume 4, Coalmine Drainage,
 - e) The Stormwater Best Management Practices Manual,
 - f) Plans developed by or certified by a Registered Professional Engineer and approved by PA DEP,
 - g) Manure Management or Nutrient Management plan developed for the operation.
4. The CP/BMPs shall be maintained pursuant to Section 2, Paragraph C of this Agreement.
5. The Landowner Grantee shall be responsible for adherence to the standards set forth in Section 2, Paragraph C and shall not act in any manner inconsistent with the terms of this Agreement.
6. The Landowner Grantee agrees not to destroy, alter or modify the CP/BMPs, except to perform needed repairs, for the period covered by this Agreement, nor to undertake any action on land under the Landowner's control which tends to defeat the purposes of this Agreement.
7. Any marketable credits toward nutrient effluent limits (nutrient reduction credits) that may be realized on account of the Commonwealth funded portion of this Project and recognized by the DEP, are the property of the Commonwealth of PA, which maintains full ownership thereof. The Landowner and Grantee recognize and release all rights, claims, title or ownership to the nutrient reduction credits that are generated as a result of the Commonwealth funded portion of the work specified in this Agreement, for the time period covered by this Agreement.
8. Any aquatic resource compensation credits, including but not limited to wetland, waterway, aquatic habitat, floodplain or riparian credits, realized from the Commonwealth funded portion of the project, and recognized by the Pennsylvania Department of Environmental Protection, are the property of the Commonwealth of Pennsylvania, which maintains full ownership thereof. The Landowner and Grantee recognize and release all rights, claims, title or ownership to the aquatic resource compensation credits, in perpetuity, that are generated as a result of the Commonwealth funded portion of the work specified in this Agreement.
9. Landowner agrees to refund all or a portion of the value of the CP/BMPs installed, as determined by the Grantee and DEP, if before the expiration of the term of this Agreement, the Landowner (a) destroys, alters or modifies the CP/BMPs installed, or (b) voluntarily relinquishes control or title to the land on which the CP/BMPs have been established, and the new landowner and/or operator of the land does not agree to maintain the CP/BMPs for the remainder of the term of this Agreement. If the new landowner agrees to assume Landowner's obligations and to maintain the CP/BMPs for the remainder of the term of this Agreement, then a new Landowner-Grantee Agreement shall be executed by the new landowner.
10. This Agreement shall be binding on the parties, their heirs, legal representatives, successors, and assigns.
11. The term of this Agreement shall be for the duration of Project construction and a period of 20 years thereafter.

Section 2 – Additional Agreement Provisions

A. Tenant Provision

"Landowner" is a Tenant under a _____		
	(Term of Lease)	(Oral/Written)
Lease agreement effective _____,	with _____	
(Date)	(Landlord Name)	
as Landlord, covering property located at _____		
	(Address)	
Landowner enters this Agreement subject to the superior rights of the landlord in the Premises, and for a term subject to the duration of Landowner's leasehold interest.		

B. Special Conditions (Site specific concerns)

None

C. Operation, Maintenance and Repair Plan (To be attached)

Attached

Section 3 – Agreement Signatures

Deborah Reyes
(Landowner Signature)

May 14, 2025
(Date)

Deborah Reyes
(Landowner Name Please Print)

May 14, 2025
(Date)

(Landowner Signature)

(Date)

(Landowner Name Please Print)

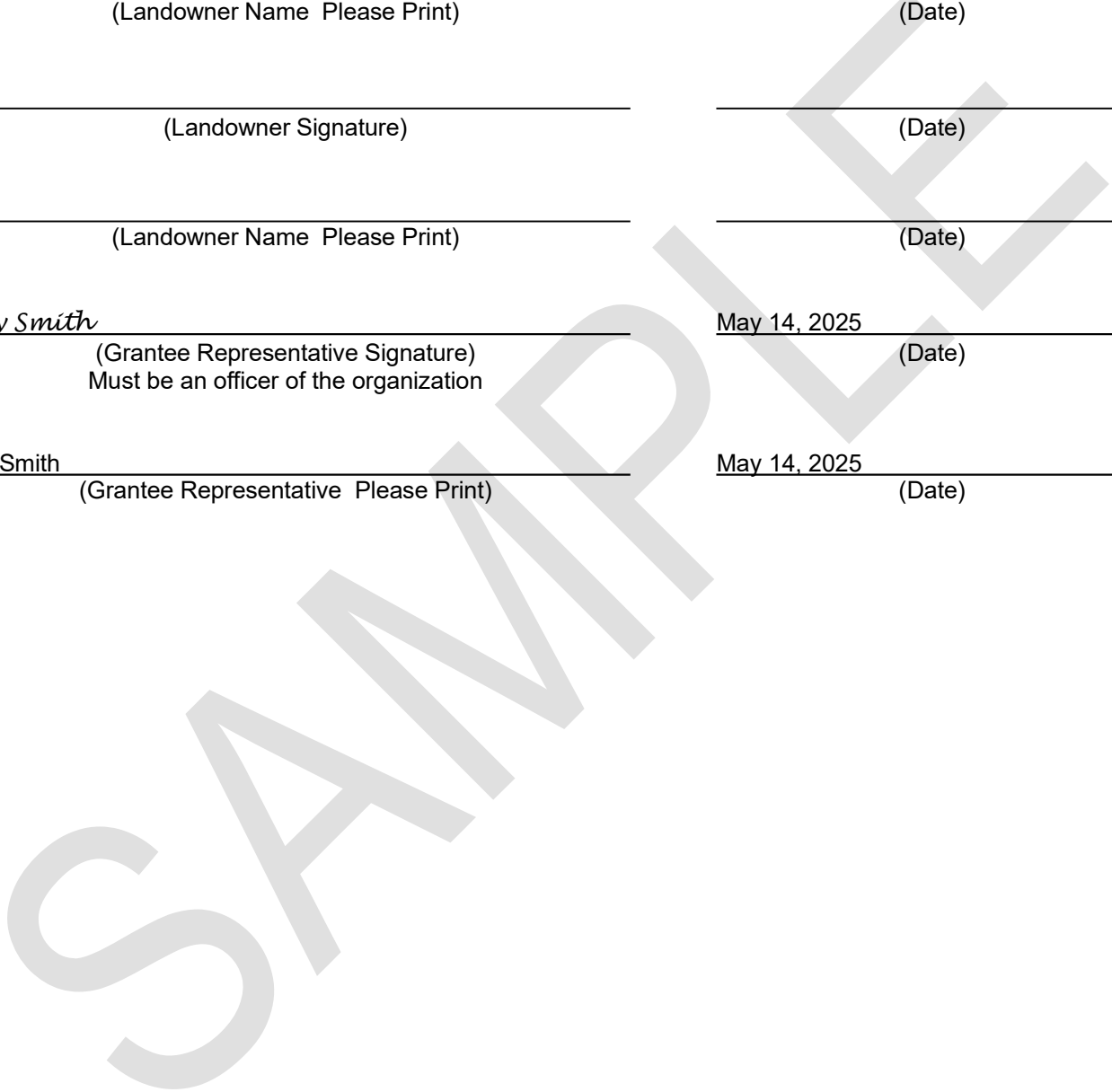
(Date)

Kelly Smith
(Grantee Representative Signature)
Must be an officer of the organization

May 14, 2025
(Date)

Kelly Smith
(Grantee Representative Please Print)

May 14, 2025
(Date)



Document Number

OPERATION, MAINTENANCE AND REPAIR PLAN

Proper operation and maintenance of Best Management Practices “(BMPs)” is critical for their success and longevity. The goal of this project is the establishment of The goal of the project is to design and construct 5,000 linear feet of streambank fencing.

(List BMPs)

for improvement of water quality.

1) Components of the Project (List all practices being installed within this project):

Streambank Fencing		

2) Parties agree to perform all Maintenance Tasks as described in the chart at the end of this document.

3) Allowed activities:

- Inspect fence after storms and other disturbance events to identify and make necessary repairs.
- Maintain fence free of vegetation, annually clearing of weeds and brush under and near the fence.
- Inspect and repair eroded areas as necessary.

Prohibited activities:

- Major repairs or replacement without consulting conservation district
-
-

4) The Landowner(s) Grantee shall be considered to be in breach of this Agreement if he/she does not maintain and repair the project in compliance with this plan or willfully neglects any other terms of this agreement.

5) The Landowner(s) Grantee agrees to comply with all Federal, State, local laws, rules and regulations. This would include noxious weed control.

6) The Landowner(s) Grantee shall be responsible for all normal, routine maintenance and normal, routine repair of the site and project.

7) Other Special Conditions:

-
-
-
-

Maintenance Tasks

Practice	Streambank Fencing
Maintenance required	<p>Inspect fence after each major storm event to identify and make necessary repairs.</p> <p>Maintain fence free of vegetation, annually clearing of weeds and brush under and near the fence.</p> <p>Inspect and repair eroded areas as necessary</p>
Schedule	<p>Inspect fence after storms</p> <p>Maintain fence free of vegetation annually</p> <p>Inspect and repair eroded areas as necessary</p>
Responsible Party	Landowner
Practice	
Maintenance required	
Schedule	
Responsible Party	
Practice	
Maintenance required	
Schedule	
Responsible Party	

Appendix VIII

VCAP Applicant Contract



**VIRGINIA CONSERVATION ASSISTANCE PROGRAM
CONTRACT (Part I – Application for Program)**

PY 2026

Application/Contract Number:		Application Date:
First Name:		Last Name:
Representative (if needed):		
Address:		City/County:
State:	Zip code:	
Telephone Number:		
Email Address:		

APPLICANT' S REQUEST:

I agree to install and maintain all practices receiving financial incentives according to Program Specifications required at the time of installation/ payment approval of my application by the Board of Directors of the local Soil and Water Conservation District (the "Board"). I agree to allow appropriate agency personnel or their designee access to land under my control for the purpose of evaluation, design, construction and inspection of said practice(s) from this date forward through the required lifespan. I agree to refund all or part of the cost-share financial assistance I have received if my practice(s) is/are found not to meet program specifications required at the time of installation/payment, or if the practice(s) is/are removed or not properly maintained during the lifespan of the practice(s). I understand that the sale, lease, or changed use of the property will not exempt me from fulfilling this/these requirement(s) described herein. I also understand that my period of responsibility begins with the acceptance of payment and extends through the lifespan of the practice in accordance with Program requirements. Lifespan is defined as "the number of years a BMP must be maintained in accordance with Program standards. The lifespan begins on January 1 of the calendar year following steering committee approval of payment." A BMP is subject to verification checks throughout the practice lifespan. The voluntary participation in VCAP does not relieve or relinquish me from compliance with ordinances, laws and regulations that may exist at any level of government. I understand that applying to participate in any of the above listed program does not guarantee that any or all of my request will be funded. I understand that if the practice I am requesting cost-share funding for is located within the Chesapeake Bay watershed, nutrient and sediment reduction information related to that practice will be submitted to the Virginia Department of Environmental Quality for reporting to the Chesapeake Bay Program to determine progress made towards Chesapeake Bay pollution reduction targets.

Cost-share funds are considered income. Recipients of these funds are responsible for compliance with all applicable tax requirements including requirements of the Internal Revenue Service.

REMEDIES IF THIS AGREEMENT IS BREACHED:

If my practice(s) is/are found not to meet Program Specifications required at the time of approval of my application by the Board, then I agree to refund all of the cost-share financial assistance I have received. If the practice(s) is/are removed (in whole or in part) or not properly maintained during the lifespan of the practice(s), then I agree to refund all of the cost-share financial assistance I have received, minus a pro rata portion of the assistance from the number of months that my practice(s) had been previously in compliance, out of the number of months in the lifespan of the practice. Any refund shall be calculated with a penalty of 6% APR from the date of breach to the date of judgment, apart from post-judgment interest. In the event that demand is made for reimbursement and I fail or refuse to pay such reimbursement within 90 days of the demand, then I agree to pay any and all attorneys' fees for enforcement of this agreement.

Signature of Applicant

Date