Shoreline Management Handbook

A report to the Virginia Coastal Zone Management Program

Department of Environmental Quality and NOAA

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Introduction: Background and Purpose

Shoreline habitats and processes are impacted by the decisions we make about managing coastal development and shorelines. Shoreline Management is making choices to address the desire to protect upland property from erosion or develop property balanced with the benefits and uses of natural and nature-based shoreline features and shoreline habitat restoration. This requires a weighing of the private benefits and cots of management actions and the benefits and costs to public held common resources, also known as the public trust. The natural features along our shorelines - tidal wetlands, beaches and dunes, and riparian buffers, are economically and ecologically valuable. They provide food, shelter, and breeding grounds for a variety of marine animals; recreational and commercial opportunities; water quality services; and can serve as significant protection against coastal storms by dissipating wave energy and absorbing flood waters.

Shoreline change can be both slow and chronic – from daily tides for example, or sudden and dramatic – like after a hurricane or Nor-Easter. The natural process of erosion can result in loss of upland property with the distribution of sediment and nutrients into our waters, while also providing material to support wetland and beach habitats.

There are two primary reasons for the establishment of legal programs to preserve and manage shoreline resources:

1. Shoreline features provide services valued by society including water quality, erosion control, flood buffering, primary production in support of the estuarine food web, recreational opportunities, and aesthetics.
2. Tidal wetlands, beaches and dunes have been adversely impacted by development with significant losses.

Virginia Actions on Shoreline Management

1972 Tidal Wetlands Act Preamble:

". . . Therefore, in order to protect the public interest, promote the public health, safety and the economic and general welfare of the Commonwealth, and to protect public and private property, wildlife, marine fisheries and the natural environment, it is declared to be the public policy of this Commonwealth to preserve the wetlands, and to prevent their despoliation and destruction and to accommodate necessary economic development in a manner consistent with wetlands preservation."

Current Tidal Wetlands Act Language

Code of Virginia § 28.2-1301 – Powers and Duties of the Commission:

"(B) . . . shall preserve and prevent the despoliation and destruction of wetlands while accommodating necessary economic development in a manner consistent with wetlands preservation."

"(D) . . . consideration shall be given to the unique character of the Commonwealth's tidal wetlands which are essential for the production of marine and inland wildlife, waterfowl, finfish, shellfish and flora; serve as a valuable protective barrier against floods, tidal storms and the erosion of the

Commonwealth's shores and soil; are important for the absorption of silt and pollutants; and are important for recreational and aesthetic enjoyment of the people and for the promotion of tourism, navigation and commerce."

Constitution of Virginia, Article XI, Section 1

Natural Resources and Historical Sites of the Commonwealth

". . . 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."

Living Shoreline Policy.

Living shorelines are the preferred alternative for addressing shoreline erosion.

Chesapeake Bay Program Commitments

Virginia is a partner in a regional cooperative program, the Chesapeake Bay Program, and has committed to certain actions one of which is wetland restoration and enhancement. The 2014 Bay-wide goal is the creation or re-establishment of 85,000 acres of tidal and non-tidal wetlands, plus the functional enhancement of an additional 150,000 acres of degraded wetlands by 2025. These activities may occur in any land use (including urban), but primarily occur in agricultural or natural landscapes. Other Bay commitments for water quality and habitat can have an effect on tidal shoreline management. For instance, nutrient and sediment load reduction credits may provide incentives for tidal marsh creation, nontidal wetland restoration, and riparian buffer restoration

Shoreline Resources: What they are and why are they protected

Tidal Wetlands:

- Most wetlands are made up of three elements (1) water, (2) hydric soils, and (3) hydrophytic plants. Wetlands serve vital ecological functions. For example, acting as a natural barrier against flooding and storm surge; maintaining river flow; providing a natural filter to absorb pollutants; and preventing the erosion of the Commonwealth's shoreline.
- The source of the water determines whether a wetland is tidal or non-tidal. Tidal wetlands are wetted primarily by tidal waters but also rainwater and overland runoff. Non-tidal wetland water sources do not include tidal waters but do include stream and river flow, rainwater and groundwater.
- Wetlands possess diverse flora and fauna, and provide critical habitat for fish and other wildlife. Additionally, wetlands can be utilized for recreational purposes such as boating, bird watching, and fishing.

Figure 1: Photo of a Virginia tidal marsh with Great Egret

Beaches:

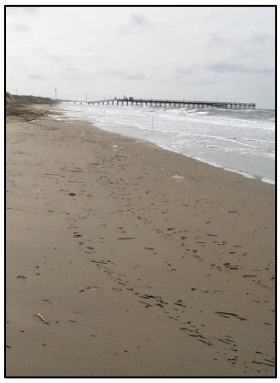


Figure 2: Photo of a beach in Virginia

- A beach is a landform along and landward of the water. Usually composed of mineral sand or pebbles, beaches are low in organic matter, typically un-vegetated and readily allow water infiltration. Given the landscape position between the waterway and the upland, beaches provide area for waves to "run" up the shore.
- Some of the water that runs ashore infiltrates the beach and some returns on the surface. This process decreases the wave energy and water volume that reaches the upland providing erosion and flood protection. In this way beaches can also improve water quantity. Beaches also provide habitat for animals that live in the sand that help support the aquatic food web and are important for recreation, such as swimming and fishing.

Sand Dunes:

- A dune is a ridge or hill of sand found near an ocean or estuary that is formed by wind. They are often landward of a beach lying behind the area affected by tides. Dune grasses trap and hold sand. Wind and waves change the shape and location of the dunes.
- Sand dunes provide protection to landward infrastructure from storm surges and flooding. They store sand and serve as a supply for adjacent beaches. Dunes are habitat for coastal plants (like sea-oats), animals, and birds (like plovers and terns), including some rare species. Dunes are valued for aesthetics and recreation.

Figure 3: Photo of a Sand Dune in Virginia

Riparian Buffers:

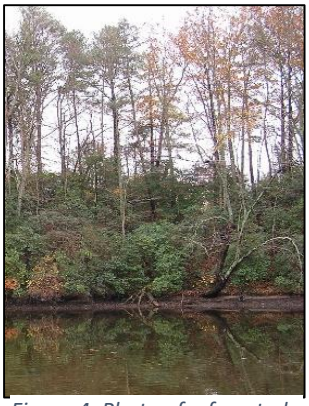


Figure 4: Photo of a forested riparian buffer along a tidal shoreline in Virginia

- Riparian forest buffers are areas of trees, shrubs, and other vegetation found next to tidal and non-tidal streams and other waterways. Chemical and biological processes of the forest remove nitrogen and phosphorous and trap sediment.
- Riparian forest buffers help control the rate and volume of water flowing in waterways. Water flowing through a riparian forest is slowed by the vegetation, leaf litter, and porous soils found there. Riparian forest soils act as areas of water storage and the plants provide water up-take. A canopy created by riparian forest provides shade, impacting water temperature. In addition, they provide habitat for birds, small mammals, and other wildlife. Forest buffers provide recreational and aesthetic services.

Subaqueous Lands:

- Virginia owns the bottom underneath tidal waters up to the Mean Low Water line (the line of low tide averaged over 20 years). 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 by all the people of the Commonwealth for the purpose of fishing, fowling, hunting, and taking and catching oysters and other shellfish.

- Subaqueous lands provide habitat for submerged aquatic vegetation, benthic animals such as oysters and clams, while waters above are habitat for fish, crustaceans, birds, and marine reptiles and mammals. Subaqueous bottom and tidal waters provide for the food web supporting commercial and recreational fishing, as well as swimming and water-based recreation.

Figure 5: Photo of bufflehead ducks floating in a Virginia tidal river

Laws and Jurisdictions

There are multiple state and federal laws and regulations regarding wetlands management; agency guidance and local ordinances also play a role. Virginia is somewhat unique in managing tidal wetlands (as well as some other environmental programs) through a local-state cooperative program. As you review Virginia's shorezone jurisdictions of legally defined shoreline resources, note that some resource boundaries and most resources have a least two responsible regulatory authorities. Each applicable regulatory agency conducts an independent review and issues a permit for their jurisdiction. The graphic below summarizes the interplay between these different programs.

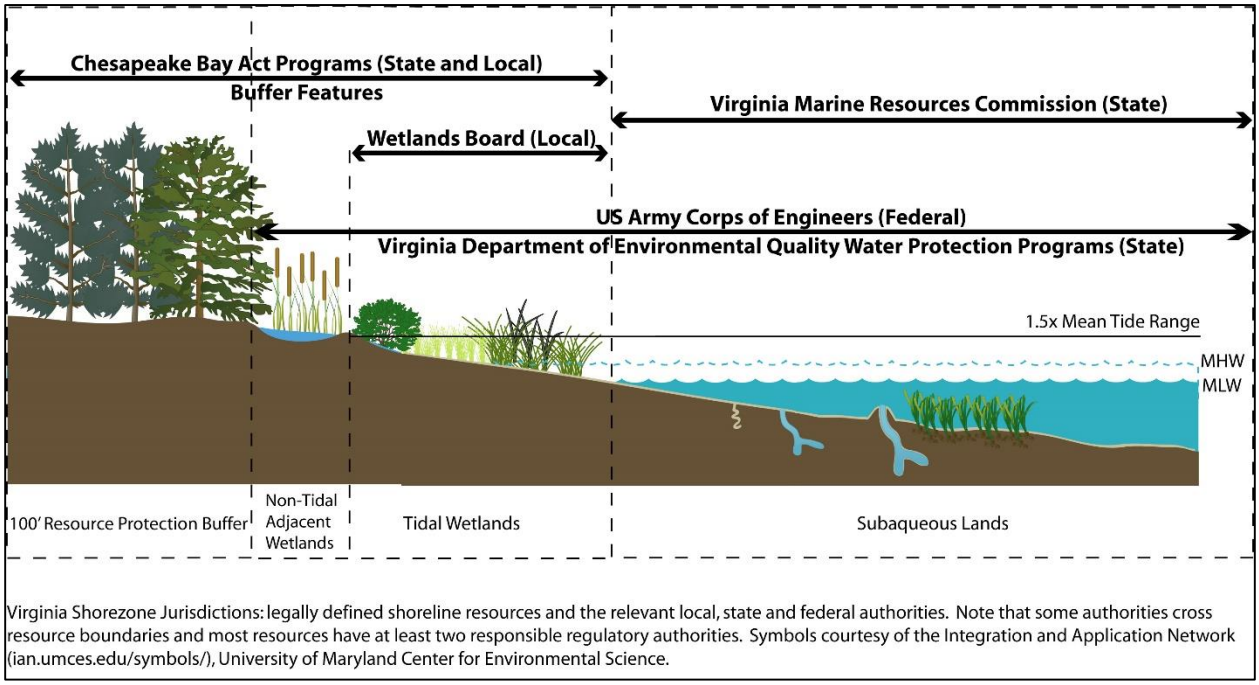


Figure 6: Virginia Shorezone Jurisdictions

State and Local Cooperative Programs

Tidal Wetlands Act

Authorities: Local Wetlands Board – Virginia Marine Resources Commission

Law:

- Virginia's Wetlands Act, initially adopted in 1972, recognizes the environmental value of tidal wetlands, establishes a permitting system for their protection, and authorizes localities to establish a local wetlands board and adopt a wetlands ordinance. The language for the local ordinance is set out within the Code of Virginia § 28.2-1302. If a locality does not establish its own wetlands board, the Virginia Marine Resource Commission acts as the wetlands board for the locality.
- Living shorelines are the preferred alternative for addressing shoreline erosion. [Code of Virginia § 28.2-104.1]

Guidelines:

- The Wetlands Guidelines provide guidance for wetland permit decision-making. The Guidelines include a brief description of each community type with an environmental value rank and

provide criteria for evaluation of wetland disturbing activities. These guidelines are advisory in nature and were last reprinted in 1993.

- VMRC has also adopted regulations setting forth its Wetlands Mitigation-Compensation Policy to encourage compensation for permitted wetland losses in certain instances following permit approval. [4 Virginia Administrative Code § § 20-390-10 et seq.]
- Virginia has an established process for the use of mitigation banks for compensatory mitigation. Guidelines for Establishment, Use and Operation of Tidal Wetland Mitigation Banks in Virginia was developed by VMRC and VIMS. This document supplements the Mitigation-Compensation Policy and "is intended to provide VMRC, local wetlands boards . . . and other regulatory agencies with an additional management tool to compensate for unavoidable, permitted tidal wetlands losses . . ." [Code of Virginia § 28.2-1308]

Legal Definition:
Under the Tidal Wetlands Act, "wetlands" are defined as "both vegetated and non-vegetated wetlands."

- Vegetated: "Lands lying between and contiguous to mean low water and an elevation above mean low water equal to the factor one and one-half times the mean tide range at the site of the proposed project in the county, city, or town in question, and upon which is growing any of the following species [as listed in Code] ..."
    - "Vegetated wetlands of Back Bay and its tributaries" or "vegetated wetlands of the North Landing River and its tributaries" means all marshes subject to flooding by normal and wind tides, but not hurricane or tropical storm tides, and upon which is growing any of the following species [as listed in Code] ..."
- Non-vegetated: "Unvegetated lands lying contiguous to mean low water and between mean low water and mean high water, including those unvegetated areas of Back Bay and its tributaries and the North Landing River and its tributaries subject to flooding by normal and wind tides but not hurricane or tropical storm tides."

Coastal Primary Sand Dunes and Beaches Act

Authorities: Local Wetlands Board – Virginia Marine Resources Commission

Law:

- The Coastal Primary Sand Dunes and Beaches Act recognizes the importance of protecting dunes and beaches and establishes a permitting program for certain uses and activities that have the "potential for encroaching on or otherwise damaging coastal primary sand dunes or state-owned beaches." Building upon the structure of the Wetlands Act, certain localities are authorized to adopt a dunes and beaches ordinance and have permit applications submitted to and reviewed by the local wetlands board. The language for the local ordinance is set out within Code of Virginia § 28.2-1403.

Guidelines:

- Developed pursuant to Chapter 14 of the Code of Virginia § 28.2-1400, the Coastal Primary Sand Dunes/Beaches Guidelines include a description of coastal primary sand dunes and beaches and their values, consequences of altering, guidelines for reviewing alterations, considerations for construction and mitigation activities, and barrier island policy. Similar to the Wetlands

Guidelines, this document was last reprinted in 1993, and although courts have not considered the Dunes/Beaches Guidelines specifically, it is also likely that this document would be considered advisory in nature.

Legal Definition:

- Coastal Primary Sand Dune: "A mound of unconsolidated sandy soil which is contiguous to mean high water, whose landward and lateral limits are marked by a change in grade from ten percent or greater to less than ten percent, and upon which is growing any of the species [as listed in Code] ... shall not include any mound of sand, sandy soil, or dredge spoil deposited by any person for the purpose of temporary storage, beach replenishment or beach nourishment, nor shall the slopes of any such mound be used to determine the landward or lateral limits of a coastal primary sand dune." [Code of Virginia § 28.2-1400]
- Beach: "The shoreline zone comprised of unconsolidated sandy material upon which there is a mutual interaction of the forces of erosion, sediment transport and deposition that extends from the low water line landward to where there is a marked change in either material composition or physiographic form such as a dune, bluff, or marsh, or where no such change can be identified, to the line of woody vegetation (usually the effective limit of stormwaves), or the nearest impermeable man-made structure, such as a bulkhead, revetment, or paved road." [Code of Virginia § 28.2-1400]

Chesapeake Bay Preservation Act

Authorities: Local Bay Authority – Department of Environmental Quality

Law:

- The Chesapeake Bay Preservation Act (CBPA) was enacted in 1988 to improve water quality in the Chesapeake Bay through effective land management and planning. Specifically, the Bay Act seeks to improve water quality through reducing non-point source pollution. The Bay Act recognizes that local governments are primarily responsible for land management decisions and requires each Tidewater locality to adopt a program based on the Act and its associated regulations. Tidewater localities are required to establish a local Chesapeake Bay board to consider applications under the local Bay Act ordinance. The Department of Environmental Quality is the administering authority for the state and the DEQ's website provides guidance for the administration of local programs in order to implement the CBPA.

Regulations:

- Generally, there are two types of protected land that fall under the Bay Act: Resource Protection Areas (RPAs) and Resource Management Areas (RMAs). RPAs improve water quality, while RMAs can impair water quality if managed improperly. RPAs are comprised of natural shoreline features PLUS a minimum 100-foot-wide landward buffer. RPA features are: (1) tidal wetlands; (2) tidal shores; (3) nontidal wetlands adjacent to tidal or perennial waters and connected by surface water; (4) other lands as set by local government to protect state waters; and (5) a buffer of no less than 100 feet adjacent and landward of the other features.

- The Bay Act, the Wetlands Act, and the Water Protection Permit all have provisions regarding the use of wetlands within the Commonwealth. The Bay Act includes tidal and non-tidal adjacent wetlands as RPA features due to the water quality services these natural features provide. The Wetlands Act and Water Protection Permit are concerned with wetland protection

for all the environmental services the features provide. The tidal wetlands that fall under a local wetlands board's jurisdiction also fall under the jurisdiction of the Bay Act. However, as illustrated in the Jurisdictional Graphic, the Bay Act and the Wetlands Act *do not* have the exact same jurisdiction. The Bay Act's jurisdiction also includes *non-tidal wetlands*. In contrast, the Wetlands Act's jurisdiction only includes vegetated and nonvegetated *tidal wetlands.* A local government's Chesapeake Bay board may be composed of the same people who make up the local wetlands board, but permit approval by one board does not automatically mean approval by another.

Legal Definition:

- "That component of the Chesapeake Bay Preservation Area comprised of lands adjacent to water bodies with perennial flow that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation to the quality of state waters." [9 Virginia Administrative Code § 25-830-40] "... In their natural condition, these lands provide for the removal, reduction or assimilation of sediments, nutrients and potentially harmful or toxic substances in runoff entering the bay and its tributaries, and minimize the adverse effects of human activities on state waters and aquatic resources. . . [and] shall include (1) tidal wetlands; (2) nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow; (3) tidal shores; and (4) such other lands considered by the local government to meet the provisions [above] and to be necessary to protect the quality of state waters. [Additionally, a] buffer area not less than 100 feet in width located adjacent to and landward of the components listed in [(1) through (4) above], and along both sides of any water body with perennial flow." [9 Virginia Administrative Code § 25-830-80]

State Programs

Submerged Lands Act

Authority: Virginia Marine Resources Commission

Law:

- Under Virginia's Submerged Lands Act, it is unlawful for a person to build on, dump into or encroach upon the beds of the bays and ocean, rivers, streams, creeks that are the property of the Commonwealth unless first obtaining a permit from the Virginia Marine Resources Commission (VMRC). The Commission is guided in its decisions regarding activities on state-owned bottomland by Article XI, Section I of the Constitution of Virginia. The Commission decision-making includes a public interest review and should be consistent with the public trust doctrine. A Public Interest Review is a weighing and balancing of all beneficial and detrimental factors relevant to a proposal, leading to a permit decision that reflects the outcome of that balancing process. It involves an analysis of the foreseeable impacts the proposed work would have on public interest factors, such as other reasonable and permissible uses of State waters and State-owned submerged lands; marine and fisheries resources, wetlands, adjacent or nearby properties; anticipated public and private benefits, submerged aquatic vegetation, water quality and 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. The Commission shall also consider the project's effect on the following:

    - Other reasonable and permissible uses of state waters and state-owned bottomlands

- Marine and fisheries resources of the Commonwealth
- Tidal wetlands, except when this has or will be determined under the provisions of the Tidal Wetlands Act (Chapter 13 of this title)
- Adjacent or nearby properties
- Water quality
- Submerged aquatic vegetation (SAV)

Guidelines:

- Permits are required for actions such as the erection of dams, use of subaqueous beds, construction and maintenance of congressionally approved flood-control projects, and the construction of piers, docks, marine terminals, and port facilities.
- VMRC developed Subaqueous Guidelines that outline the policies and procedures which the agency uses when considering permit applications for activities directly affecting the subaqueous lands of the Commonwealth.
- VMRC developed Marina Guidelines to address increasingly intensive development through the subdivision of lands adjacent to waters of the Commonwealth to include more detailed criteria for the siting of facilities to serve the needs of boaters in order to protect, conserve and manage properly the natural resources of the Commonwealth for the reasonable and beneficial use of all its citizens.

Legal Definition:

- Also called submerged lands or bottomlands, this refers to the state-owned beds of the bays, rivers, creeks, or shores of the sea channelward of the mean low-water mark. [Code of Virginia § 28.2-1200]

Virginia Water Protection Program

Authority: Department of Environmental Quality

Law:

- A Virginia Water Protection (VWP) permit must be obtained before disturbing a wetland or stream by clearing, filling, excavating, draining, or ditching. The State Water Control Board has the responsibility to manage Virginia waters. All wetlands, tidal and non-tidal are considered waters of the state. Application is made through the Joint Permit Application process for concurrent federal and state project review. The permit program is administered by the Virginia Department of Environmental Quality (DEQ) and the State Water Control Board promulgates regulations to administer the law. [Code of Virginia § 62.1-44:15.20]
- The VWP permit process includes provisions for the DEQ to wave the permit requirement when another state permit is issued for wetland activities. The VWP permit is routinely waved for tidal wetland activities permitted by Local Wetland Boards or VMRC administering the Tidal Wetlands Act.

Regulation:

- No Net Loss Policy: Virginia has established a policy of no net loss of wetland acreage and function. The VWP Program shall contain compensation requirements sufficient to achieve no net loss of existing wetland acreage and no net loss of functions in all surface waters. Additional information in the policy speaks to practicable and ecologically preferable compensation alternatives, how compensation mitigation proposals will be evaluated, in-lieu

fee program approval, and use of mitigation banks.
[9 Virginia Administrative Code § 25-210-116]

- DEQ has established general permits for certain specified categories of activities that are considered to have minimal impacts. For example,
  - VWP General Permit for Impacts Less than One-Half of Acre
  - VWP General Permit for Facilities and Activities of Utility and Public Service Companies Regulated by the Federal Energy Commission or the State Corporation Commission and Other Utility Line Activities
  - VWP General Permit for Linear Transportation Projects
  - VWP General Permit for Impacts from Development and Certain Mining Activities
- The VWP Program serves as Virginia's Section 401 Certification for Section 404 permits issued under the authority of the Federal Clean Water Act**.**

Legal Definition:

- ""Wetlands" means those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."
- "Nontidal wetland" means those wetlands (other than tidal wetlands) that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, as defined by the U.S. Environmental Protection Agency pursuant to § 404 of the federal Clean Water Act in 40 CFR 230.3(t).
- "Tidal wetland" means vegetated and non-vegetated wetlands as defined at Code of Virginia § 28.2-1300. [9 Virginia Administrative Code § 25-210-10]

Federal Programs

Federal Clean Water Act

Authorities: US Army Corps of Engineers – Environmental Protection Agency

Law and Management:

- The Clean Water Act (CWA) establishes a framework for the regulation of pollutant discharges into the waters of the United States, as well as the creation of water quality standards for surface waters.
- The Rivers and Harbors Appropriation Act of 1899 established a program to regulate activities affecting navigable waterways in the United States, including wetlands.
- The United States Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into the waters of the United States, including wetlands, under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act.
- For projects that meet certain parameters and will result in minimal adverse impacts, a general permit is all that is usually required. However, for projects that will have more than minimal impacts or cumulative impacts, the Corps will conduct a more comprehensive public interest review to determine whether an individual, or standard, permit will be issued. General information about obtaining a permit from the Corps is available here.
- Section 401 of the CWA provides states (and federal tribes) with a means of protecting water quality within its jurisdiction by requiring that applicants for a federally permitted or licensed

activity provide the relevant federal agency with certification from the state (or federal tribe) that its water quality requirements have been met or waived with respect to the activity being reviewed. In Virginia, the 401 certification is provided by DEQ through the process of permitting or certification of the Corps nationwide and regional permits. More information about Virginia's Section 401 Certification is available above under Virginia Water Protection Permit.

The Coastal Zone Management Act

Authorities: National Oceanic and Atmospheric Administration – Coastal State

Law and Management:

- The goal of the Coastal Zone Management Act (CZMA) is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone."
- The CZMA includes a provision for states to determine whether federal actions are consistent with the state's enforceable policies known as federal consistency. Federal consistency applies to actions within and outside of the coastal zone which have reasonably foreseeable effects on any coastal use or resource. Federal consistency is a major incentive for states to join the National Coastal Zone Management (CZM) Program and a powerful tool that state programs can use to manage their coastal resources, as well as facilitate coordination with federal agencies. [Section 307 of the CZMA]
- Virginia's Coastal Zone Management Program is a network of state agencies and local governments which administers enforceable laws, regulations, and policies that protect the Commonwealth's coastal resources and fosters sustainable development. The Virginia Department of Environmental Quality serves as the lead agency.
- The Virginia Coastal Zone includes all of "Tidewater Virginia" and means the following counties: Accomack, Arlington, Caroline, Charles City, Chesterfield, Essex, Fairfax, Gloucester, Hanover, Henrico, Isle of Wight, James City, King and Queen, King George, King William, Lancaster, Mathews, Middlesex, New Kent, Northampton, Northumberland, Prince George, Prince William, Richmond, Spotsylvania, Stafford, Surry, Westmoreland, and York; and the Cities of Alexandria, Chesapeake, Colonial Heights, Fairfax, Falls Church, Fredericksburg, Hampton, Hopewell, Newport News, Norfolk, Petersburg, Poquoson, Portsmouth, Richmond, Suffolk, Virginia Beach, and Williamsburg. [Code of Virginia § 28.2-100]

Local Government Policies, Bylaws and Procedures

Fairfax County: Living Shorelines Policy and Required Supplementary Information Form

Fairfax has adopted local policy to promote the implementation of living shorelines. Among all the options, applicants must consider a design that maintains or creates a living shoreline, as an approach for shoreline stabilization, and demonstrate to the Board why a living shoreline approach would not achieve your goals. Properly sited and designed living shorelines will be preferentially permitted over hardened shoreline approaches. The Board does not require mitigation or compensation for properly designed and sited living shoreline stabilizations.

- Living Shoreline Policy (pdf)

Fairfax has also developed a required supplementary information form under the provision for information required in the permit application "Such additional materials and documentation as the wetlands board may require" [Code of Virginia § 28.2-1302.4B].

Supplementary Information Form (pdf)

The following localities have adopted bylaws and procedures to assist their Wetlands Board members in administering their duties.

- King George County – Wetlands Board Bylaws and Procedures (pdf)
- Northampton County – By-Laws Wetlands/Primary Sand Dune Board (pdf)
- City of Portsmouth – Wetlands Board Bylaws (pdf)
- York County – Wetlands Board Bylaws (pdf)
- York County – Policies and Procedures – Management of York County Tidal Wetlands (pdf)

Permit Information

Permit Types

There are two categories of permits used to review and authorize activities in Virginia's tidal wetlands, beach and dunes, and/or subaqueous lands. Certain activities that are anticipated to have minor adverse impacts can qualify for one of three general permits issued by the Virginia Marine Resource Commission. The general permits expedite the review process and do not require a public hearing. Activities that do not qualify for a general permit are reviewed as an individual permit. In either case, one permit application is used by all regulatory and advisory agencies.

Individual (Standard) Permits

Each applicable regulatory agency conducts an independent review and issues a permit for their jurisdiction. The table shows which agencies have permit authority for tidal shorelines in Virginia. See Conduct a Hearing for a description of the permit review and approval process.

General Permits

VMRC has several general permits for activities along the shoreline and on submerged lands. The most relevant of these permits for Wetland Boards are:

- Virginia General Permit #4 Emergency Situations – *expedited process to stabilize non-vegetated shorelines during an emergency*
- Living Shoreline Group 1 General Permit – *permit for nonstructural actions above mean low water*
- Living Shoreline Group 2 General Permit – *permit for sand fill, fiber logs, fiber mats, shell bags, riprap, woven containment bags and temporary grazing protection in tidal wetlands, beaches and submerged lands*

Legislation	Administration	Over-Sight/ Review	Determination and Delineation
Tidal Wetlands Act	Local: Wetlands Board VMRC if no Board	VMRC	Locality Determines 1.Contiguous to MLW 2. Elevation MLW to 1.5 x tide range or to MHW 3. Plants listed in 28.2-1300
Coastal Primary Sand Dunes & Beaches Act	Local: Wetlands Board VMRC if no Board	VMRC	Locality Determines 1. Mounds of unconsolidated sand 2. Contiguous to MHW 3. Limits marked by a change in grade from >10% to <10% 4. Plants listed in 28.2-1400
Chesapeake Bay Preservation Act	Local: Wetlands Board, "Bay" Board or Staff	DEQ	Locality Determines 100 ft riparian buffer landward of RPA features (Tidal wetlands, tidal shores, nontidal wetlands connected by surface water, other lands as specified)
Subaqueous Lands	VMRC		VMRC Determines Beds of the bays, rivers, creeks, or shores of the sea channelward of the MLW
Virginia Water Protection Permit	DEQ	Courts	DEQ Determines 1. Hydrology 2. Plants 3. Soils
Clean Water Act	Corps of Engineers	EPA and Courts	Corps Determines Urban/ Residential/ Commercial NRCS Determines Agricultural

Table 1: Laws and Authorities

Joint Permit Application

One application is used to request all approvals for proposed impacts to tidal and non-tidal wetlands, dunes and beaches, and subaqueous resources from activities including construction, dredging, filling, or excavation. The Joint Permit Application is submitted to VMRC, which serves as a clearinghouse and distributes the joint application to the following permitting agencies for review.

The Tidewater JPA (the most commonly used JPA for tidal shoreline projects) is comprised of five parts. Applications are determined complete by the permitting authority. In order to be complete, the application must at a minimum include the following:

General Information

1. **Applicant**: The name and address of the applicant. If not the property owner, the name and address of the property owner must be provided.

2. **Proposed Activity**: A clear, detailed description of the proposed activities. **This section is very important as it indicates to the reviewers what is being proposed. The description should be clear and detailed**.

For shoreline erosion control activities, be sure to provide the following:

- The type of proposed activity such as revetment, marsh sill, bulkhead, etc. and the linear feet (LF) of each proposed structure.
- Indicate if the structure is new or a replacement structure. If it is a replacement structure, explain how; will the structure being replaced be removed or remain?
- If a living shoreline is proposed, indicate weather sand nourishment and plantings are to be provided.
- How the site will be accessed such as using an existing driveway, by water, or by an adjacent property owner's property.
- Will tree and/or grading be required? How large of an area (sq ft or acres) is proposed to be cleared?
- Any other information necessary to clearly describe the activities proposed.

PROPOSED ACTIVITY EXAMPLES

Sill:
100 LF of class 1 stone sill is proposed channelward of an existing marsh. 35 cubic yards of sand nourishment is to be placed landward of the sill to augment the marsh. Approximately 250 square feet of sand area will be planted in *Spartina alterniflora* (sprigs to be planted on 1 feet centers). No tree clearing or grading will be required. Access to the site will be through the driveway to the back yard.
Bulkhead:
100 LF of vinyl bulkhead is proposed to replace the existing bulkhead that is to be removed. The existing bulkhead debris will be taken to the local landfill. Three trees along the shoreline will need to be removed for the project. Due to restrictions on land, the site will be accessed by a barge.
Revetment:
100 LF of stone revetment is proposed. The eroded bank is to be graded back to a 2:1 slope, filter cloth is to be installed and the rock placed on the filter cloth. The toe of the revetment will be buried 2 feet below MLW. No trees will be removed. Grading area is 100 feet x 10 feet. Access to the site will be through the neighbor's driveway and a section of my fence will be removed to enter the property. Neighbor has provided permission.

3. **Equipment and Access**: Description of the type of equipment to be used and the means of equipment access to the activity site.

4. **Adjacent Owners**: Description of the type of equipment to be used and the means of equipment access to the activity site.

5. **Cost**: An estimation of the cost of the project

6. **Project Purpose**: The primary purpose of the project; Any secondary purposes of the project, including further projects.

7. **Public Benefit**: The public benefit to be derived from the proposed project.

8. **Mitigation**: A complete description of measures to be taken during and after the alteration to reduce detrimental offsite effects.

9. **Expected Timeline**: The completion date of the proposed work, project, or structure.

10. **Suggested Information**: Physical address of the property site with detailed directions to the site.

11. **Additional Information**: Such additional materials and documentation as the wetlands board may require.

Signatures

- Applicant and/or property owner signature form
- Adjacent property owner acknowledgement form(s)
- Agent/ contractor authorization signature form

Appendices

Submit the appendices that are as applicable to your project:

- A – Projects for Access (piers,etc)
- B – Shoreline Stabilization (most commonly used for shoreline erosion control projects)
- C – Crossings
- D – Aquaculture Related Structures

Project Drawings

ALL applications shall include the following drawings (on 8.5" x 11" white paper):

Vicinity Map: A map showing the location of the project site.

There are many available on-line map sites, such as Google Maps, Google Earth, Map Quest, County/City Tax Maps and Parcel Viewers to help easily create a vicinity map to identify the location of the project. To facilitate the review of a project, it is important that wetlands board staff, wetlands board members, and VMRC staff are able to easily locate the project site. The vicinity map should be clear as to the location of your project.

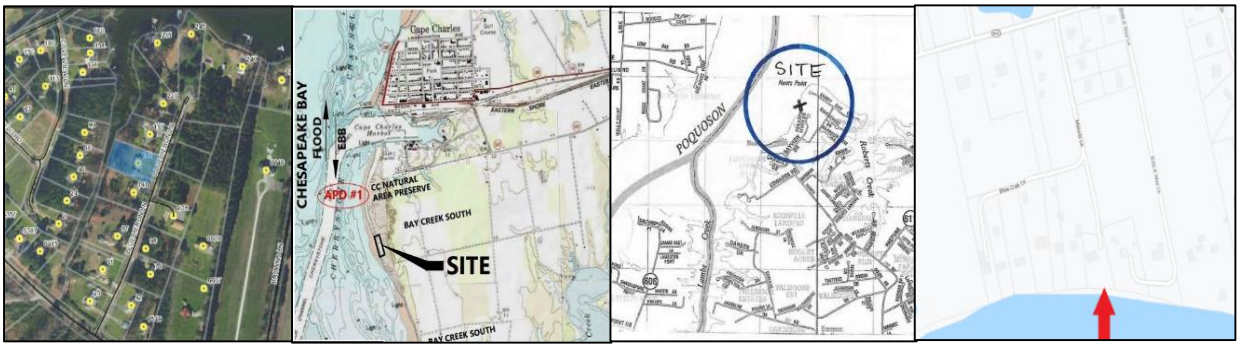


Figure 7: Site Location Map Examples

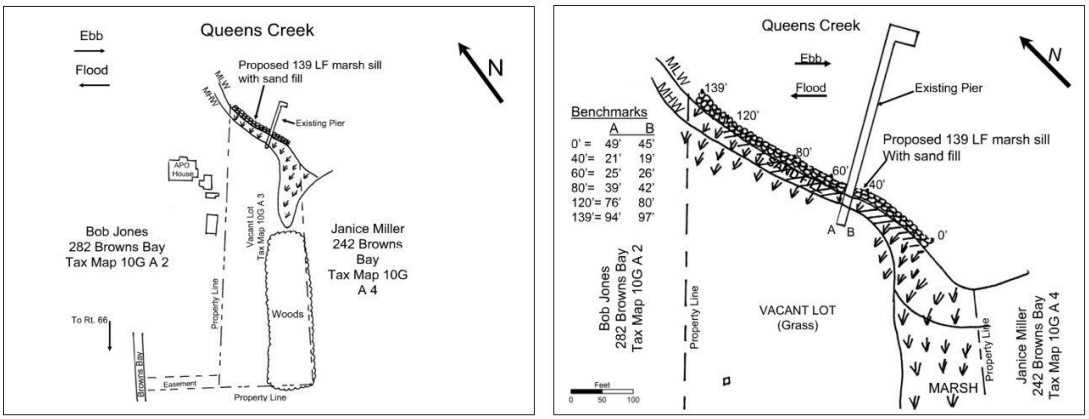


Figure 8: Plan View Drawing Examples

Plan View Drawing: Include all elements in Table 2

Elements to Include in a Plan View Drawing	
Name of Project	Example: Joe Smith's revetment project
North Arrow	North arrow correctly indicating where north is located in relation to the drawing.
Scale	The map needs to be drawn to an appropriate and uniform scale. Scale should be shown.
Waterway Name	Name of the immediate waterway
Existing Structures	All existing structures on the site such as houses, sheds, piers, fences, etc. shown and labeled as existing.
Proposed Structures	All proposed structures such as revetment, marsh sill, pier, etc. clearly identified on the plan and labeled with dimensions (linear feet - LF) as proposed.

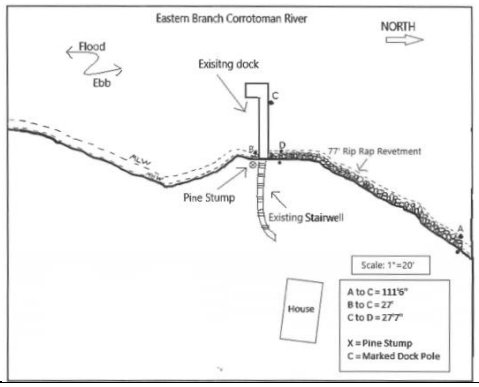
Mean High Water (MHW) and Mean Low Water (MLW) Lines	MHW and MLW clearly delineated on the plan view drawing. MHW and MLW locations are one of the most important pieces of information on a plan. Their locations determine the permitting authorities' jurisdictions (limits of territory where a permit may be required). There are several permitting authorities involved in a shoreline project and they each have different and sometimes overlapping jurisdictions. 
Wetlands and Impacts	Limits of wetlands on the project site clearly delineated on the plan view drawing. The square feet of impacts indicated on the plan.
Surface Waters and Impacts	All surface waters (i.e. rivers, creeks) on the project site clearly delineated on the plan view drawing. The limits of proposed impacts (in square feet or acres) to surface waters such as fill areas, riprap toe protection, and dredged areas should be provided on the plan.
Ebb/Flood Direction	Indicate with arrows the ebb and flood direction of the tide. The ebb direction is the tidal flow going out to sea and flowing in of the tide is the flood direction.
Property Lines and Adjacent Property Owner Information	Location of property lines; parcel identification of adjacent properties as well as name and address of adjacent property owners. This information is important since adjacent property owners must be legally notified of the project.
Benchmark Distances	Benchmarks are the distances measured between the "toe" (or most channelward location of a structure) and a permanent, identifiable, upland point (benchmark) such as a house corner, tree to remain, flag pole, fence post, etc. Triangulated benchmarks are preferred, where a specific point at the toe of a structure is referenced back to two or more benchmark points. Benchmark lines along the entire project may make the drawing hard to read. In these cases, labeling the benchmarks and points, and including a table with the distances to points is acceptable. Benchmarks on a bluff can be a challenge. Use a permanent, fixed structure along the shoreline such as a pier, if present.

Table 2: Elements to Include on Plan View Drawing

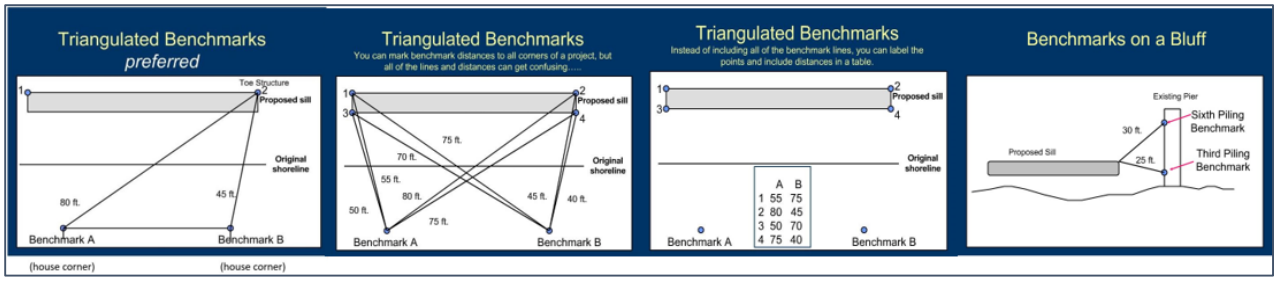


Figure 9: Benchmark Examples

Cross-Section Drawing: In addition to a Plan View Drawing, a Cross Section View Drawing(s) illustrating the shoreline and proposed modifications is required as part of the Joint Permit Application. The drawing(s) show the side-view, to scale or with dimensions clearly marked. The locations where cross section views are provided must be identified on the plan view drawing so that reviewers and others know where along the shoreline each cross section represents.

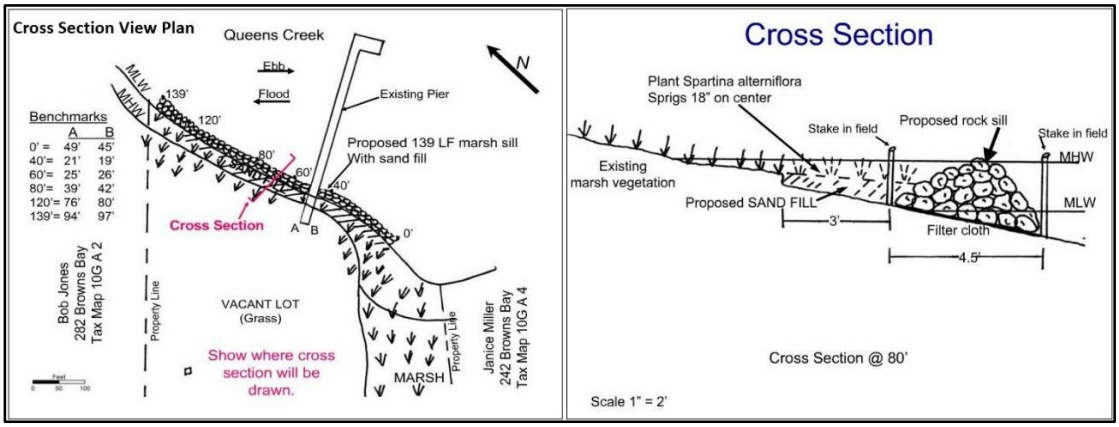


Figure 10: Cross Section Drawing Examples

Chesapeake Bay Preservation Act Information

All proposed activities related to the Tidewater JPA must comply with the Chesapeake Bay Preservation Area and Designation Management Regulations and requires the submission of a Water Quality Impact Assessment (WQIA). A WQIA is an application that requests information to identify the impacts of proposed activities on water quality and lands in Resource Protection Areas (RPAs).

Why are good project drawings important?

Good permit application drawings are very important! They are the main communication tool from the property owner to the regulatory and review agencies, adjacent property owners, and contractors about the proposed project.

- Permit drawings become part of a wetlands board and/or VMRC approved permit and are legally binding.
- They instruct the contractor on what is to be built and provide documentation for the property owner to ensure both parties are on the same page.
- They are essential to regulatory staff in determining compliance of an approved project and the allowed impacts.

Good drawings reflect *site-specific* information, not assumptions or "typical details." Before starting permit drawings, the project must be designed and the project limits accurately staked on the site. The final permit drawings should reflect accurate dimensions and impact amounts determined from measurements at the project site. Drawings should clearly communicate the property owner's proposed activity(s).

Good Project Drawings are:

- Submitted on 8.5" x 11" white paper
- Readable and legible. Easy to interpret. Not too much information on one page or overlapping labels or text too small.
- Drawn to scale
- Provide date of drawing, and date and explanation of any revisions.
- Include all required and necessary information to clearly communicate the proposed activity at a specific site

Good Drawings Should Communicate in Detail:

To Regulators:

- Where the site is located?
- What is the problem?
- What is proposed and where?
- Where are resources located (riparian area, wetlands, sub-tidal)?
- Where are the jurisdiction lines?
- What impacts are proposed?

To Adjacent Property Owners:

- How will the proposed project affect their property?
- Will the project encroach onto their property (should it encroach)?
- How will the proposed project tie into their property?
- How will the shoreline be accessed? (i.e. Is permission needed from the neighbor to use his/her driveway?

Good project drawings help to save time, money, resources and frustration for everyone involved in the wetlands board permit process.

They can help to avoid:

- Requests for additional information and revisions
- Additional site visits
- Tabled meetings
- Additional advertising
- Protests due to misinformation
- Failed projects
- Impacts to wetlands and other resources
- Legal issues

Benefits for Contractors:

- More accurate cost-estimates
- More clearly defined shoreline project scope of work
- Avoid stop work orders and down time
- Help ensure a more successful project and happy client

Benefits for Property Owners:

- Understand what is proposed on the shoreline
- Obtain more accurate cost estimates (possibly save money)
- Avoid violations and associated fines and headaches (Note: The property owner is ultimately legally responsible)
- Avoid or reduce neighbor issues

Permit Databases

Public records for current and historical JPAs are available in searchable databases. These records include the original Joint Permit Application (JPA) and all associated photos, public hearing notices, additional information, and VIMS Reports.

- Historical JPA Records The Center for Coastal Resources Management serves the historical records for all tidal wetland JPA's. All records prior to January 1, 2015 can be found here.
- Current JPA Records Use the Virginia Marine Resource Commission (VMRC) website to access information regarding applications starting with the year 2010 to the current date.

Wetlands Boards Permit Fees

Local wetlands boards are surveyed every year to gather the current information on administrative fees (permit, commercial, after-the-fact, advertising and In-lieu) charged by their locality to process wetlands permits.

- 2020 Permit Fees (pdf)

Being on a Wetlands Board

The Tidal Wetlands Act (Wetlands Act) was enacted in 1972 and helps to regulate wetlands in the Commonwealth. The Wetlands Act authorizes localities in Virginia (cities, counties, or towns) to adopt a wetlands zoning ordinance and establish a local wetlands board. **Find out more about the purpose of local wetlands boards, the role each board serves in their particular locality, and the general procedures which the boards should follow.**

Purpose of the Board

- Each local wetlands board acts as a steward of the Commonwealth by protecting wetlands within the locality.
- The local wetlands board has a duty to preserve and prevent the devastation and destruction of wetlands within its locality while permitting certain, necessary economic development in a manner consistent with wetlands preservation.
- Local wetlands boards balance the need to preserve existing wetlands with the use and development of wetlands. The local wetlands board meets this balance by deciding whether to grant, grant in modified form, or deny a permit for certain uses and activities which impact wetlands within its locality.

Know your role

- Volunteer citizen advisory boards, such as local wetlands boards, are an integral part of American local government and help plan the future of communities. Citizen boards bring together community views that might not otherwise be heard. They are made up of persons of wide-ranging expertise and interests who seek to participate in public service and the betterment of their localities.
- Serving on a local wetlands board is an important responsibility. Wetland boards represent the Commonwealth's interest in shoreline resources and board issued permits are, in most cases, the official Commonwealth permit for actions within tidal wetlands, beaches and dunes. In addition, the locality relies upon these boards to make fair decisions that will increase a locality's environmental stewardship. For this reason, it is crucial that members of a local wetlands board strictly adhere to the purpose and process of the board when making decisions.

Figure 11: Photo of Chesapeake Bay Shoreline in York County Virginia

Be a Board member

What is required to be on a Board? (residency, education, and training)

Each wetlands board member needs to be a resident of the locality in which they will serve. Typically, there are no requirements by a locality to serve on a wetlands board – however some demonstrated interest in the environment, shorelines, coastal erosion, or marine related issues is helpful and valuable. Prior training to serve on a wetlands board is not essential – although an interest in learning about your role and the issues you may confront as a board member is essential. VIMS offers regular training to wetlands board members and local staff on a wide variety of topics and holds an annual

workshop which allows for board members, local staff, and others interested in shoreline issues to interact and share information.

Can Board members hold other positions?

Board members may not hold public office within the locality. Each locality may have different requirements concerning wetlands board members holding other appointed positions. As an example, in some localities, wetlands board members also serve as members of the local planning or zoning commission; the local erosion commission; the local board of zoning appeals; a board established by a local government to hear cases regarding ordinances adopted pursuant to the Chesapeake Bay Preservation Act and its regulations; or as director of a soil and water conservation board. Other localities specify members may only serve on one appointed board.

What is Board member compensation?

Each locality may handle compensation for board members in different ways. Some receive a small stipend for each meeting attended; others may receive a meal should a meeting overlap lunch or dinner hours, or reimbursement for mileage to visits to application locations. Many localities provide some funds for assisting with training and attendance at VIMS workshops. Still other localities do not provide any kind of compensation to board members.

What is the permit application site visit process for Board members?

Wetlands boards handle site visits in various ways. Board members are strongly encouraged to visit sites in advance of a hearing and with the applicant present. Some boards hold a monthly application site visit attended by multiple board members and organized and attended by local board staff. Board members also often visit sites on their own. In any case, it is best practice to always try to contact the applicant in advance of a planned visit as a courtesy, as well as have some documentation (business card or letterhead) from your locality proving that you are a wetlands board member. In cases where a visit occurs and the applicant is not present, it is best to leave a note that you have visited and include your contact information.

Figure 12: Photo of Wetland Site Visit

More than three board members meeting for any reason - including site visits - requires the locality to issue a public notice of that meeting. Information on posting requirements and deadlines for doing so are provided under Conduct a Hearing > Hearing Procedures > Public Hearing. When the normal public notice process cannot be accommodated, every effort should be taken to advise the general public of the site visit as early as possible. An example of this utilized in some localities is for the local wetlands board staff to post a notice of the site visit on a notice board located in a prominent public space, such as the hallway or lobby of the offices which support the local wetlands board, or the lobby of the main local government building. A notice can also be posted in the chief administrative offices of the county, city, or town, and the office of the county, city, or town attorney.

How do you get appointed to a Board?

Wetlands board members are appointed to terms of service by their locality, i.e. Board of Supervisors, City Council, and Town Council. It is important that a board member be sworn into office by the County

or City Attorney. It is also important to learn about your term limits – beginning and ending dates of service. Your locality should also be able to provide you with other pertinent information such as a roster of board members, a schedule of regular meetings, and contact information for your local staff members who supports the board.

What are the length of appointment and term limits for Board members?

Length of appointment and term limits vary widely among localities. Terms typically run from 3-5 years in duration. Some localities allow for a member to serve multiple consecutive terms, while others do not. It is important to learn about your locality's policies regarding term limits, disclosure requirements, appointment time periods and reappointment guidelines. If for some reason while serving as a board member you are no longer able to serve, make sure that you contact your local governing body – preferably by a letter stating why you can no longer serve and when you are planning to step down. That way the local governing body can make a new appointment to fill your unexpired term of office.

Structure of a Board

- A local wetlands board can be composed of five or seven members. One to three alternative members must be selected to serve in the place of an absent member at a board meeting to ensure that a quorum can be achieved at every meeting. For any action to be taken at a local wetlands board meeting, a quorum of either (1) three members of a five-member board, or (2) four members of a seven-member board is necessary.
- Board members serve for a five-year term and may serve more than one term. If a member's term expires before a replacement has been selected, that board member will continue to serve until a successor is selected.

Procedures

- Local wetlands boards conduct a variety of actions: permit applications hearings, violation hearings, administrative matters, closed meetings (or executive sessions), and informal sessions. See Conduct a Hearing.
- There are various requirements of the board to ensure public awareness and participation in board actions. These requirements include public hearings, a full public record of proceedings, and an annual report of activities to the board's local governing body.
- In acting on any application for a permit, the board shall grant the application upon the favorable vote of three members of a five-member board or four members of a seven-member board. The chairman of the board, or in his absence the acting chairman, may administer oaths and compel the attendance of witnesses at hearings.

Board Decision Reviews

An appeal or review of a Board decision may necessitate your attendance at review proceedings. See Conduct a Hearing for more on decision review.

Integration with Other Programs

Local wetlands boards always need to make sure that they are looking at wetlands as defined in the Tidal Wetlands Act. The determination of the boundaries of tidal wetlands under the jurisdiction of the board is the responsibility of the board. In addition to local wetlands boards, other programs, and agencies including Chesapeake Bay Preservation Act, the Virginia Department of Environmental Quality

and the U.S. Army Corps of Engineers (Corps) have policies in place to protect tidal wetlands. Although each program touches on the wetlands in some way, each program has differing definitions of key terms in tidal wetlands protection discussion, which contributes to ongoing confusion.
More information on other programs, can be found on these tabs: Laws & Jurisdictions, and Permit Information

Training and Continued Learning

- Annual Wetlands Workshops are held for the tidal shoreline management community in Virginia. These events cover a variety of scientific, policy and management topics as well as offer networking opportunities.
- CCRM also offers classes on request for shoreline management topics of interest including, estuarine ecology, the latest shoreline guidance, and GIS tools. Contact Karen Duhring (karend@vims.edu, 804-684-7179) to schedule a training session that can be customized to fit your locality's specific needs.

Wetland Boards- Meeting Times and Contact Information

Meeting times and contact information by locality are available online here: Local Wetlands Boards

Administrative Fees

Fees charged for permits, advertising and in-lieu compensation by locality are available online here: 2020 Administrative Fees

Conduct a Hearing

Resources on legally required and optional procedures for conducting a public hearing. What you need to know about closed and informal sessions and other administrative matters.

Hearing Procedures

Permit Applications

A local wetlands board must hold a public hearing within sixty days after receiving a **complete** application. A list of the information needed on a complete application is on the Permit Information tab. The determination of completeness is made by local wetlands boards and/or locality staff.

Public Hearing

Within sixty days after receiving a complete application, the board is required to give notice of the hearing to the applicant, local governing body, adjacent property owners, various state agencies, any other interested governmental agency, and the VMRC twenty days before the hearing. The board must also give public notice of the hearing by publishing its date in a newspaper within the local wetlands board's county, city, or town, once a week for two weeks prior to the hearing.

It is recommended that, prior to the start of the public hearing, the chairman recite the general purpose of the board as a reminder to those in attendance at the meeting.

A board must make its determination within thirty days of a hearing. If the board fails to act within thirty days, the application will be deemed approved. Otherwise, approval of a application requires the affirmative vote of three members of a five member board or four members of a seven member board. Once the board makes a determination, the board must notify the applicant and the Commission within forty-eight hours of its determination.

Record of Hearing

The board shall make a record of the proceeding, which shall include the application with the associated drawings, any written statements of witnesses, a summary of statements of all witnesses, the findings and decision of the board, and the **rationale for the decision**.

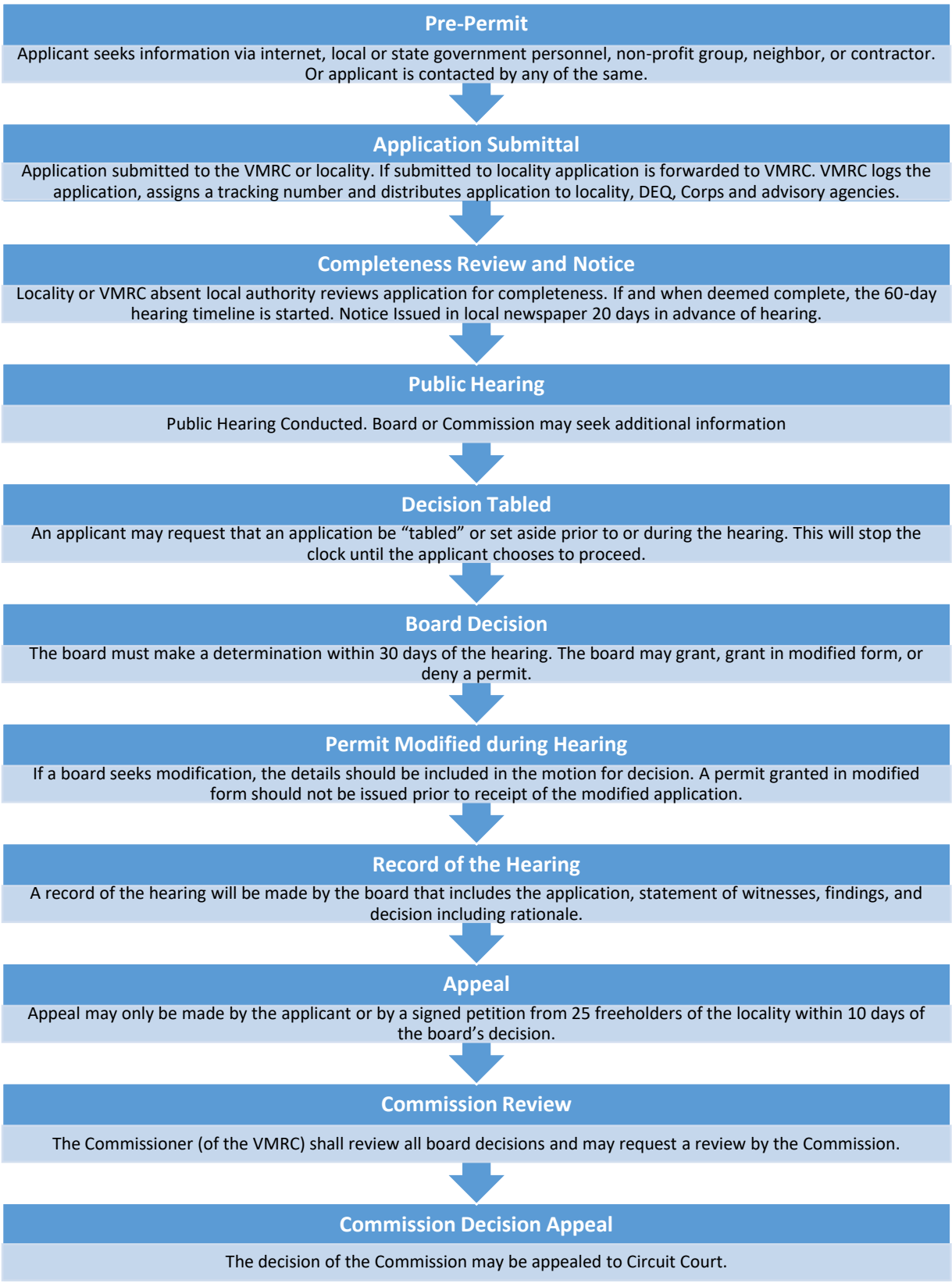


Figure 13: Tidal Shoreline Permit Decision Process Flow Diagram

Permit Decision

The board may decide to grant, grant in modified form, or deny a permit. A decision requires a weighing and balancing of all beneficial and detrimental factors relevant to a proposal, leading to a permit decision that reflects the outcome of that balancing process, known as a public interest review. In making this determination, the local wetlands board must consider:

1. The testimony of any person in support of or in opposition to the permit;
2. The impact of the proposed development on the public health, safety, and welfare; and
3. Whether the proposed development conforms with standards prescribed in § 28.2-1308 and guidelines passed pursuant to § 28.2-1301. See Laws & Jurisdictions.

Permit Approval

The board must grant the permit if:

1. The anticipated public and private benefit of the proposed activity is greater than its anticipated public and private detriment;
2. Wetlands of primary ecological significance are not altered in such a way that the ecological systems in those wetlands are unreasonably disturbed;
3. The development is concentrated in wetlands of lesser ecological significance, in vegetated wetlands which have been irreversibly disturbed before July 1, 1972, in nonvegetated wetlands which have been irreversibly disturbed prior to January 1, 1983, or in areas of Virginia outside of wetlands; and
4. The proposed activity does not violate the purpose and intent of the Wetlands Act.

Permit Denial

If all the criteria above are not met, the board shall deny the application. Specific criteria for a proposed action to destroy wetlands and provide compensation require meeting the three criteria below. If one or more criteria are not met, the activity shall be denied. [4 Virginia Administrative Code § 20-390-40]

1. All reasonable mitigative actions, including alternate siting, which would eliminate or minimize wetlands loss or disturbance shall be incorporated in the proposal.
2. The proposal shall clearly be water-dependent in nature.

The proposal shall demonstrate clearly its need to be in the wetlands and its overwhelming public and private benefits.

Compensation Guidelines

A proposed activity should stand on its own merits in the permit approval process, compensation should not be used to justify permit issuance. The receipt of an acceptable compensation plan may be required as a condition before issuance of a final permit. If compensation is required, the sequence for mitigation is:

1. On-site,
2. Off-site within the same watershed or mitigation bank in the watershed,
3. Proffered payment of an in-lieu fee if on-site and off-site compensation are shown by the applicant to be impractical considering the project location.

Items to Consider for Compensation Review

1. A detailed plan should be submitted, including a scaled plan view drawing, the type of wetland to be created, the mean tide range at the site, the proposed elevations relative to a tidal datum, the exact location, the areal extent, the method of marsh establishment and the exact time frame from initial work to completion. The plan should also include plans for replanting areas where vegetation fails to grow.
2. Inspection to insure that the elevations are appropriate for the vegetation to be planted and that the surface drainage is effective.
3. Plan and implementation should be by experienced professionals knowledgeable of the requirements for wetland establishment and long-term survival.
4. A performance bond or letter of credit should be required and remain in force until the new wetland is successfully established; a minimum of two growing seasons and a required planting success rate has been achieved.
5. The compensation marsh should be designed to replace the functional values of the lost resource on an equal or greater basis. A minimum 1:1 areal exchange is required in all cases. The ratio of required compensation to approved loss should be specified and may be based on the use of the Function Specific Credit Calculation Method established by the Virginia Institute of Marine Science (VIMS) and contained in the Guidelines for the Establishment, Use and Operation of Tidal Wetland Mitigation Banks in Virginia.
6. The compensation should be before or concurrent with, the wetland project. Prior to any activity, the permittee must own all interests in the mitigation site that are needed to carry out the mitigation.
7. All reasonable steps must be taken to avoid or minimize any adverse environmental effects associated with the compensation activities themselves.
8. One aquatic community (ie subaqueous bottom) should not be sacrificed to "create" another. In cases where dredged material must be placed overboard, the area may be used to create marsh, oyster rock or improve the resource value of the bottom.
9. The type of plant community proposed as compensation must have a demonstrated history of successful establishment in order to be acceptable.
10. Manipulating the plant species composition of an existing marsh community, as a form of compensation, is unacceptable. Vegetative enhancement or rehabilitation are not compensatory mitigation.
11. Nonvegetated wetlands should be treated on an equal basis with vegetated wetlands with regard to compensation and mitigation, unless site-specific information indicates one is more valuable than the other.
12. Both short-term and long-term monitoring of compensation sites should be considered on a case-by-case basis. For unproven types of compensation, the applicant will be responsible for funding such monitoring as is deemed necessary.
13. Conservation or other easements to be held in perpetuity should be required for the compensation marsh. Easements accepted by the commission will be processed in accordance with the provisions of Code of Virginia § 28.2-1301.

Mitigation Banks

An applicant may be permitted to use an approved wetlands mitigation bank for all or part of any required mitigation. The mitigation bank must be in the same United States Geological Survey (USGS) cataloging unit or adjacent USGS cataloging unit in the same watershed unless compliance with specific criteria contained in § 28.2-1308 for use of a compensatory mitigation bank outside the watershed is

demonstrated. The ratio of required compensation to approved loss must be specified and should incorporate the use of Function Specific Credit Calculation Method established by the Virginia Institute of Marine Science (VIMS) and contained in the Guidelines for the Establishment, Use and Operation of Tidal Wetland Mitigation Banks in Virginia. [4 Administrative Code § 20-390-50]

In-Lieu Fees

In-lieu fees should be the last form of mitigation used to offset permitted wetland losses and require demonstration that on-site or off-site compensation options are not practical and no mitigation banks have been established in the project watershed. Localities are encouraged to establish a fund for such payments that is dedicated to tidal wetlands restoration and creation and could be the same fund established for the receipt of civil charges or civil penalties. Administration should include an ability to trace the contribution of in-lieu fees to actual wetland restoration or creation projects. The fee amount cannot be less than the cost of necessary compensation acreage or the purchase of necessary credits in an approved bank. Use of the fund could be for actual tidal wetland creation or restoration projects in the locality or for the purchase of credits in an approved compensatory mitigation bank that is authorized subsequent to the receipt of any in-lieu fee. Localities are encouraged to combine any in-lieu fee with other potential or available funds for wetland restoration or creation projects.

The Permit

Permits issued by local wetlands boards must:

1. be in writing
2. be signed by the board chairman or his or her authorized representative
3. be notarized
4. and, include an expiration date

A copy of the permit is provided to the Commissioner of the Marine Resources Commission. Permits do not affect local zoning or land use ordinances, and they also do not affect the right of any person to seek compensation for any injury that results from the activity proposed in the permit.

Local wetlands boards can grant permits with conditions and limitations. In order to ensure that the permit applicant complies with the permit conditions and limitations, the local wetlands board may condition the permit on a reasonable bond or letter of credit; compensatory mitigation for adverse impact to wetlands; contribution of in-lieu fees to offset permitted wetlands losses; and/or a requirement that the permittee implement monitoring and reporting procedures or on-site inspections.

Review of Board Decisions

Review by the Commission (VMRC)

The Commissioner shall review all wetlands board's decisions and request the Commission to review a decision if the board failed to fulfill its responsibilities.

The Commission shall review a decision of a wetlands board when any of the following events occur:

- An appeal by the applicant or the locality where the wetlands are located.
- The Commissioner requests the review.

- Twenty-five or more freeholders of property within the locality sign and submit a petition to the Commission requesting the review.

All requests for review or appeal shall be made within ten days of the date of the board's decision. The Commission shall hear and decide the review or appeal within forty-five days of receiving the request or notice of appeal.

The Commission shall hear the appeal or conduct the review of the record transmitted by the board to the Commissioner. The Commission may take such additional evidence as may be necessary to resolve any controversy as to the correctness of the record. The Commission, in its discretion, may also receive such other evidence as the ends of justice require.

On review or appeal, the Commission must modify, remand, or reverse the decision of the local wetlands board if the local wetlands board fails to fulfill its responsibilities or if its findings, conclusions, or decisions prejudice the substantial rights of the appellant or applicant. The Commission will notify the parties of its decision within 48 hours of the appeal or review hearing.

Additionally, an applicant or property owner may appeal the Commission's decision to the Circuit Court.

Review by the Circuit or Appeals Court

It is rare for a wetlands permit decision to be appealed to the Circuit Court or to the Court of Appeals. The Circuit Court is often deferential to the local wetlands board's decision. As long as a local wetlands board can point to "substantial evidence" in the record to support their decision and that decision is within the local wetlands board's field of expertise, the court will likely confirm the decision. Because the court does not do any fact finding of its own, but instead reviews only the administrative record, it is critical that local wetlands boards develop a robust administrative record.

A decision by the local wetlands board or the Commission is likely to be overturned by a court if (1) the decision can be fairly characterized as arbitrary or capricious and, therefore, a clear abuse of delegated discretion; or if (2) the decision to grant or deny a permit is based upon procedural grounds. A local wetlands board can avoid making a decision that is arbitrary or capricious by considering all pertinent factors and not basing its decision on one single factor. As for the latter category of decisions likely to be overturned, the Court is not willing to give an agency deference when a decision is based upon a procedural ground because the Court views procedure and application of the law as its area of expertise and not that of the local wetlands board or the Commission. To avoid this categorization, a local wetlands board should not proceed with a decision when a procedural error has occurred.

Violation Hearings

The local wetlands board can suspend or revoke a permit if the applicant fails to comply with any of the permit's conditions. The board may also suspend or revoke a permit if the applicant's actions exceed the scope of the work initially described in the permit.

The board has the power to investigate all proposed or ongoing projects and to prosecute any violation of their orders or the Wetlands Act. These investigations may take place through violation hearings.

The local wetlands board may also petition the Circuit Court of the county or city to enjoin an unlawful act.

- See the Compliance and other Legal Resources tab for more detail on Violations
- Norfolk Policies & Procedures Handbook (pdf). See pages 5 to 10 and pages 25 to 27, for an example of how to conduct a violation hearing and a summary of violation procedures.

Closed Meeting (Executive Session)

Generally, the meetings of public bodies must be open to the public. However, Virginia's Freedom of Information Act does list certain exemptions to this general requirement. For example, a local wetlands board may go into a closed meeting when the chairman or members of the board have questions or matters involving actual or probable litigation, or require the provision of legal advice by counsel. In order to hold a closed meeting, the local wetlands board must identify the specific statutory exemption it is using and must follow other procedural requirements.

The local wetlands board must affirmatively vote during an open meeting on a motion that identifies the subject matter of the closed meeting; states the purpose of the closed meeting; and makes explicit reference to the statutory exemption relied on to close the meeting.

At the end of the closed meeting, the local wetlands board must reconvene in an open meeting and take a vote certifying that that they discussed only exempt subject matters identified in the previous motion.

Decisions made in a closed meeting do not become official until the local wetlands board reconvenes in an open meeting following the proper procedure, reasonably identifies the substance of the decision, and takes a recorded vote on the decision agreed to in the closed meeting. Any and all votes taken to authorize the transaction of any public business must be taken and recorded in an open meeting.

The local wetlands board is not required to record minutes for closed meetings.

- Norfolk Policies & Procedures Handbook (pdf). See page 11, for an example of when and how to convene, and return from, a closed meeting/executive session.

Informal sessions

Local wetlands boards may also hold informal sessions or briefings in addition to formal hearings. Some local wetlands boards, such as the Virginia Beach Wetlands Board, hold monthly informal briefings, to which citizens are invited.

Norfolk Policies & Procedures Handbook (pdf). See page 12 for an example of how to conduct an informal session.

Elections, Rules and Record Keeping

- Elections**:** Each year, the local wetlands board elects a chairman and such other officers as it deems necessary.
- Norfolk Policies & Procedures Handbook (pdf). See page 15, for an example of how to conduct officer elections.
- Rules**:** The board may make, alter, and rescind rules for its procedures, provided they are consistent with state law and local ordinances.
- Public Record**:** The board shall keep a full public record of its proceedings and shall submit a report of its activities to the local governing body and the Virginia Marine Resources Commission on an annual basis.

Decision Support & Technical Assistance

View management recommendations on a map. Find technical reports and links to contacts for assistance.

Where to Start

An application has been submitted, now what?

Determine Jurisdiction

- Wetland Boards, local staff and property owners need to know which activities may require a permit, or more than one permit, from local, state or federal authorities. In general, any activity that is proposed along the shoreline, within 100 feet of the water or tidal marsh, or in the waterway will require permits. Shoreline features that are managed through a permit program include: tidal vegetated marsh, tidal non-vegetated flat, beaches, dunes, nontidal wetlands, all waterways and uplands within 100 feet of all of these features. Certain localities use a land-based elevation as a first cut to determine if a proposed activity will be reviewed by the wetlands board and staff. See Laws & Jurisdictions

Application Review

- What information is needed in an application and how do you know when it is complete? The application form appears long and complicated. However, the information is critical to a well-informed decision about protected resources. The Joint Permit Application available online is 32 pages. BUT, only pages 5-14, the pages in the appendix for your project type, proper drawings (page 22) and Chesapeake Bay Act information (pages 23-24) are needed for an application. The rest of the pages provide contact information and examples to assist in application preparation. A detailed breakdown of what goes into a complete application is provided on the Permit Information page.

Decision Tools

On-Line Tools:

Shoreline Management Model (SMM) – This GIS model recommends the best management practices for a shoreline using available map data and decision tree logic displayed in the Comprehensive Map Viewer. Best for desktop reviews, the model output can be viewed by locality in the CCRMPs or for all of Tidewater Virginia at ADAPTVA

Comprehensive Coastal Resource Management Portals (CCRMPs) – A gateway to locality specific shoreline information including mapping tools, shoreline and marsh inventory reports, water level and flooding information, and more.

Figure 14: CCRMP: Locality Portals

Shoreline Inventory Data – The Virginia Shoreline and Tidal Marsh Inventory is a series of reports and digital inventory that describe the condition of tidal shorelines in the Commonwealth of Virginia.

On-site Tools

Self-Guided Decision Tools – A series of decision trees (interactive and static) that leads users through questions about shoreline conditions to provide best practice recommendation(s).

Living Shoreline Guidance

The Virginia General Assembly has a policy that living shorelines are the preferred alternative for addressing shoreline erosion.

Living Shorelines Design Alternatives – Learn more about stabilization techniques that not only protect shorelines and infrastructure, they also help to conserve, create and restore natural shoreline habitats and ecosystem service.

Living Shorelines Design Guidelines – Learn where they are appropriate and what is involved in their design and construction.

Living Shorelines Training Courses – General (2010) and advanced (2017) training for shoreline professionals.

Technical Advice

Need more help? State and local entities provide technical advice on shoreline management and publications are available on a variety of similar topics.

Who Do I Ask? – Contact information for all agencies connected to the permit process.

Wetlands Technical Reports (in Scholarworks) – *Published from 1990-2002, each report provides an in-depth review of one topic related to wetlands restoration, mitigation, regulations or management.*

Restoration for Resilience

Most shoreline habitat restoration, creation or rehabilitation projects are intended to result in a net gain of resource area and a net improvement of ecosystem services such as fish and wildlife habitat, water quality improvement, erosion control and flood mitigation. Restoration projects for resilience include projects like living shorelines, wetland creation and restoration, beach and dune nourishment and creation, and oyster restoration. These projects require permits because no matter the intent, all shoreline activity results in some impacts to the existing resources. The permit process was established to avoid, minimize and compensate for adverse impacts on shoreline resources. Specialized general permits have been developed to simplify and promote restoration efforts. *Restoration project reviews through the permit process enable management programs to ensure that adverse impacts are offset by resource and ecosystem service gains.*

Living Shorelines Permits

Living shorelines are nature-based approaches for shoreline protection

- Virginia Living Shorelines General Permit Group 1 (pdf) – *permit for nonstructural actions above mean low water*
- Virginia Living Shorelines General Permit Group 2 (pdf) – *permit for sand fill, fiber logs, fiber mats, shell bags, riprap, woven containment bags and temporary grazing protection in tidal wetlands, beaches and submerged*
- Corps of Engineers Nationwide Permit 54: Living Shorelines (pdf) – *for the construction and maintenance of living shorelines*

Adaptation Stories

Learn more about resiliency projects in Virginia and elsewhere. Story maps on ADAPTVA show how adaptation works, and can be financed, through zoning, planning, engineering, and policy practices.

Wetland Restoration

- Information on Living Shoreline design alternatives, vegetation, research, and resources on the Center for Coastal Resources Management website.
- The Corps of Engineers Nationwide Permit 27: Aquatic Habitat Restoration, Enhancement, and Establishment Activities is often used to expedite and simplify the process of reviewing permit activities associated with restoration, enhancement, or establishment of wetlands, streams and open waters provided there is a net increase in functions and services.

Figure 15: Wetland Restoration Photos

- Thin Layer Placement is the placement of sediment or dredged material in order to produce an elevation surface to support wetland conditions and promote the establishment or persistence of wetland vegetation. Thin layer placement is one management option for beneficial use of dredged material. This practice has been employed in coastal areas within the Chesapeake Bay region, Atlantic and Gulf Coasts

and elsewhere.
Learn More: US Army Corps of Engineers, Engineer Research and Development Center

- Native Plants for Wetland Restoration and Enhancement: A Source Guide by the City of Norfolk

Beach/ Dune Restoration

- Beach nourishment and dune restoration are described as non-structural living shorelines on the Center for Coastal Resources Management Living Shorelines website.
- Native Plants for Dune Restoration and Habitat Diversity: A Source Guide by the City of Norfolk
- Restoration and Management of Coastal Dune Vegetation by North Carolina State Extension

Figure 16: Beach Restoration Photo

Riparian Buffer Restoration

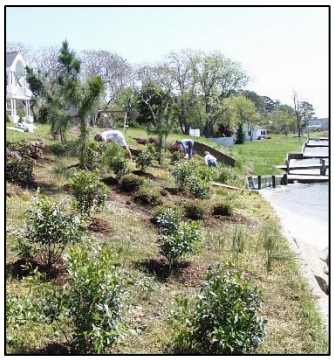


Figure 17: Photo of Riparian Buffer Restoration in Virginia

- Riparian Buffer and Marsh Management are described as non-structural living shorelines on the Center for Coastal Resources Management Living Shorelines website.
- The Virginia Department of Environmental Quality manages riparian buffers as part of the Chesapeake Bay Preservation Act. The Riparian Buffers Guidance Manual (pdf) contains useful information on buffer restoration.
- Virginia Cooperative Extension has helpful information on riparian forest buffers including technical assistance, cost share and partners. Understanding the Science Behind Riparian Forest Buffers: Resources for Virginia Landowners

Project Funding and Incentives

Virginia Conservation Assistance Program (VCAP) – *cost share program*

Virginia Conservation Assistance Program

The Virginia Conservation Assistance Program is an urban cost-share program that provides financial incentives and technical and educational assistance to property owners installing eligible Best Management Practices (BMPs) to improve water quality. **Living shorelines and constructed non-tidal wetlands are eligible practices in the Program.** VCAP practices can be installed in areas of your yard where problems like erosion, poor drainage, or poor vegetation occur. Most practices are eligible for 75% cost-share.

The Program is run by Soil and Water Conservation Districts (SWCDs) in participating districts. SWCDs are political subdivisions of the State which manage conservation programs, employ staff and deliver free conservation services, many aimed at the control and prevention of non-point source pollution. The SWCDs collaborate with Department of Conservation and Recreation on soil and water conservation programs.

Conservation Reserve Enhancement Program (CREP) – *cost share program*

Find your local Farm Service Agency
Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program is a state-federal partnership that provides financial incentives for the establishment of **conservation practices on agricultural lands to improve water quality, protect environmentally sensitive lands, restore habitat and decrease erosion. Wetland restoration and riparian forest buffer restoration are eligible practices.** Funds are available for federal incentive payments, cost-share payments, and rental payments. It is a national program administered by the Farm Service Agency, part of the United States Department of Agriculture. The Natural Resources Conservation Service, United States Department of Agriculture, can assist with design. The Virginia Department of Forestry provides advice on trees species and planting, while the Soil and Water Conservation Districts administer the state cost share and state rental payment in collaboration with the VA Department of Conservation and Recreation.

Virginia Conservation Assistance Program (VCAP) – *cost share program*

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The Virginia Clean Water Revolving Loan Fund (CWRLF) – *low interest loans*

DEQ – Clean Water Financing & Assistance
Virginia Resources Authority

The CWRLF may be used to provide low interest loans for activities to protect or improve water quality and prevent pollution of state waters. The Fund is administered by the Department of Environmental Quality and managed by the Virginia Resources Authority. **The establishment of a living shoreline qualifies as an eligible activity of CWRLF**. Loans may be made to a local government or local funding program. Loans to local governments are used by the government to establish a living shoreline. Loans to a local funding program can be used to provide low interest loans for individual citizens or certain businesses. An eligible

Figure 18: Photo close-up of smooth cordgrass, Spartina alterniflora

business needs to be located within a locality in the Rural Coastal Virginia Community Enhancement Authority.

National Fish and Wildlife Foundation (NFWF) – *grants*

The National Fish and Wildlife Foundation provides grants for conservation projects nationwide. Through the grant process they engage partners from diverse sectors including governmental agencies, non-profits, industry and individuals. **NFWF has several grant programs that can support tidal shoreline habitat creation and restoration, including living shorelines, marsh, beach and dune restoration, and riparian forest buffer restoration.** The conservation programs related to these projects are:

- Chesapeake Bay Stewardship Fund
  The Fund is dedicated to protecting the Bay by helping local communities clean up and restore their polluted rivers and streams. It operates through two grant programs; the Innovative Nutrient and Sediment Reduction Grant Program and the Small Watershed Grants Program.
- National Coastal Resilience Fund
  The Fund restores, increases and strengthens natural infrastructure to protect coastal communities while also enhancing habitats for fish and wildlife. It funds projects to restore or expand natural features such as coastal marshes and wetlands, dune and beach systems, oyster and coral reefs, forests, coastal rivers and floodplains, and barrier islands that minimize the impacts of storms and other naturally occurring events on nearby communities.
- Five Star and Urban Waters Restoration Grant Program
  This Program links on-the-ground restoration with education and training opportunities and community partnerships. Projects include a variety of ecological improvements along with targeted community outreach, education and stewardship. Ecological improvements may include one or more of the following: wetland, riparian, forest and coastal habitat restoration.

Local Government Tax Incentives

- Partial Exemption: flood mitigation efforts. Living shorelines qualify as a flood improvement for which a local government may provide a partial tax exemption for improved real estate. [Code of Virginia § 58.1-3228.1]
- Partial Exemption: erosion control improvements. The placement of rock or concrete breakwaters, bulkheads, gabions, revetments, or similar structural improvements installed to control erosion, is a separate class of property for which a local government may provide a partial tax exemption for improved real estate. [Code of Virginia § 58.1-3665]
- Separate land classification. Living shorelines, riparian buffers and wetlands subject to permanent easement allowing inundation by water are a separate class of property. Local governments may exempt or partially exempt such property from local taxation. [Code of Virginia § 58.1-3666]

Total Maximum Daily Load Best Management Practices – incentive for shoreline features

The Chesapeake Bay Program operates under the Chesapeake Bay agreement and Virginia is a signatory to the agreement. The Chesapeake Bay has a Total Maximum Daily Load (TMDL) to restore clean water to the Bay and tributaries. Pollutants enter the Bay waters directly by commercial, industrial and municipal discharges, point source pollution, and indirectly via overland runoff, non-point source pollution. Actions to reduce or eliminate pollution from stormwater runoff are known as Best Management Practices (BMPs). Implementation plans identify actions to reduce pollution including

BMPs. **Living shorelines with a created marsh, nontidal wetlands restoration and riparian forest buffer restoration are all practices that have been approved for nutrient and sediment pollution removal rates**. The values for BMP pollution removal are tracked as part of the accounting for each Bay signatory through the Watershed Implementation Plan process.

A Total Maximum Daily Load (TMDL) is the amount of pollutants that a waterbody can receive without changing the conditions that would cause it to exceed water quality standards. Water quality standards define levels of nutrients, toxicants, sediment and other elements and compounds that need to be maintained for the waters to be used in various ways – from fishing and swimming to drinking water (known as designated use). If the waterway has pollutant levels that are higher than the standard, a TMDL Implementation Plan is required. Multiple groups including local governments, soil and water conservation districts, planning district or regional commissions, community watershed groups, and state and federal agencies assist in the development of Implementation Plans (IPs) plans to restore the waterway.

The Chesapeake Bay Program provides a fact sheet on the Shoreline Management BMP as applies to erosion control practices. The greatest reductions are for Living Shorelines (Shoreline Erosion Control Vegetated).

Chesapeake Bay Program Quick Reference Guide for BMPs

N-2. Shoreline Management (Urban and Non-Urban)

General Information

There are a range of practices that can limit tidal shoreline erosion and protect property. Many states encourage practices that use natural habitats such as vegetation, sometimes with the addition of hard structures, to create living shorelines.

CBP Definition(s)

Shoreline management is any tidal shoreline practice that prevents and/or reduces tidal sediments to the Bay. Shoreline management practices can include living shorelines, revetments and/or breakwater systems, bulkheads and seawalls.

The particular definition varies by state, but for CBP purposes a *living shoreline* refers to a shoreline management practice or suite of stabilization and erosion control measures that preserve natural shoreline, minimize shoreline eorsion, maintains coastal processes and provides aquatic habitat. Living shoreline can be non-structural with only vegetated and natural elements, or hybrid with vegetation plus some hard structures such as stone sills or breakwaters.

(Urban or Non-Urban) Shoreline Erosion Control Non-Vegetated are shoreline management practices without a vegetated area along an urban- or agriculturally-dominated tidal shoreline that prevent and/or reduces tidal sediments to the Bay.

(Urban or Non-Urban) Shoreline Erosion Control Vegetated are shoreline management practices with a vegetated area along an urban- or agriculturally-dominated tidal shoreline that prevent and/or reduces tidal sediments to the Bay.

Specifications or Key Qualifying Conditions

These BMPs are only applicable along tidal shorelines. They should be implemented in areas with a demonstrated need to control erosion based on the jurisdiction's respective thresholds and qualifying conditions for shoreline management projects. Only projects with vegetated areas can receive credit for Protocols 2-4 of this BMP. Any shoreline practices implemented prior to 2008 are automatically credited in the model and should not be reported.

Nitrogen, Phosphorus and Sediment Reductions

Figure N-2-1. Erosion is a natural process, but sometimes it is necessary to protect property from excessive erosion, like occurred (top) with Hurricane Isabel in 2003. Often the shoreline in or near developed areas is hardened – or "armored" – against erosion using bulkheads, revetments or riprap (middle). The use of softer approaches – such as the living shoreline (bottom) seen from the air – are becoming more common. Living shorelines protect against excessive erosion while providing ecological functions like habitat. Photos: Chesapeake Bay Program

BMP Reference Sheet N-2. Shoreline Management (Urban and Non-Urban) 1

Figure 19: Chesapeake Bay Shoreline Management BMP Factsheet

Compliance & Other Legal Information

Monitoring the project process and assessment of compliance with permit conditions is critical to ensure the intent of the law and to the understanding of the status and trends of tidal wetland and shoreline resources. Through the violation hearing and restoration order process, corrective actions can be required when wetland or beach/dune resources are impacted without a permit or not in compliance with a permit. Additional guidance from the Office of the Attorney General, Court decisions and local government approaches to policy options can be helpful.

Investigations and Prosecutions

Wetland Boards may investigate all projects which alter wetlands within their jurisdiction. Wetland Boards may prosecute violations of their orders and any violation of the wetlands zoning ordinance.

Monitoring, Inspections, Compliance, and Restoration

The Commissioner or board chairman, or delegated designee, may require monitoring and reporting to ensure compliance with permits. Inspections may be required with prior notification to the owner, occupier or operator.

If it is determined that there is a failure to comply with the permit, the chairman shall serve notice to the permittee or to the person supervising those. The notice shall describe the measures needed for compliance and the time within which these measures shall be completed. Failure of the person to comply within the specified period is a violation. [Code of Virginia § 28.2-1317]

Figure 20: Photo of Wetland Disturbance

Stop Work Order

The board chairman may, upon receipt of a sworn complaint of a violation from the designated enforcement officer, issue an order requiring all or part of the activities be stopped until the specified corrective measures have been taken. If the activity is either not authorized by a permit **(a violation)**, or permit noncompliance is causing, or will cause, significant harm to the wetlands, the order may be issued without a notice to comply. Otherwise, the **(stop work)** order may be issued only after the permittee has failed satisfy the requirements of the notice to comply. The order shall remain in effect for a period of seven days pending application by the enforcing authority, permittee, resident owner, occupier, or operator for appropriate relief to the circuit court. Upon completion of corrective action, the order shall immediately be lifted.

Restoration Order

A wetlands board may order that the affected site (either violation or non-compliant permit actions) be restored to predevelopment conditions if that restoration is necessary to recover lost resources or to prevent further damage to resources. The order shall specify the restoration necessary and establish a reasonable time for its completion. A restoration order may only be issued after a hearing. The hearing notice to be provided with at least thirty days' prior and specify time, place, and purpose. The Commission or board shall require any scientific monitoring plan they believe necessary to ensure the successful reestablishment of wetlands and may require a prepaid contract be in effect to perform the scientific monitoring plan. The board may require a reasonable bond or letter of credit to secure compliance with the conditions in the restoration order. The appropriate court, upon petition by the

board, may enforce any such restoration order by injunction, mandamus, or other appropriate remedy. Failure to complete the required restoration is a violation.

Violations and Penalties

Violation of the law is a Class 1 misdemeanor. Following a conviction, every day the violation continues is a separate offense. [Code of Virginia § 28.2-1318]

Injunctions

The Commission or a wetlands board may petition the local circuit court regarding unlawful acts and the court may enjoin the unlawful act and order the defendant to take any steps necessary to restore, protect, and preserve the wetlands involved. This remedy shall be exclusive of and in addition to any criminal penalty which may be imposed under Code of Virginia § 28.2-1319.

Penalties

Violation of the Wetland Act may result in a civil penalty not to exceed $25,000 for each day of violation. Civil penalties to be paid to the locality for the purpose of abating environmental damage to or restoring wetlands therein. If the violator is the county, city, or town itself, or its agent, the court shall direct the penalty to be paid into the state treasury.

With the consent of the violator, the Commission or wetlands board may order the one-time payment of civil charges for each violation not to exceed $10,000. Civil charges shall be in lieu of any appropriate civil penalty which could be imposed under subsection A of this section. Civil charges may be in addition to the cost of any restoration ordered by the Commission or a wetlands board. [Code of Virginia § 28.2-1320]

Other Legal Resources

Court Cases

Dillon Rule, Police Power

Nicoll v. City of Norfolk Wetlands Board, 90 Va. Cir. 169 (Norfolk, 2015)

Under the statutory scheme of Virginia Code § 28.2-1300 *et seq*., wetlands boards are not bound by VMRC decisions since *either* the VMRC *or* the local board controls permitting decisions. Where a locality has set up a wetlands board, VMRC's interpretations regarding the approval of permits are not binding on boards' decisions. VMRC interpretations of local ordinances or state law are especially unpersuasive, since legal interpretation is the domain of the courts, not an agency. Additionally, wetlands boards have express statutory authority (meaning there is no Dillon Rule conflict) to enforce their wetlands permitting requirements; this includes actions such as investigating and enforcing permits, and, like in this case, issuing "cease and desist" orders to prevent violations of their decisions. Virginia Code §§ 28.2-1316-17.

Standard of Review

Boone v. Harrison, 52 Va. App. 53 (2008)

Under the Virginia Administrative Process Act, VMRC decisions will only be overturned if the challenger can show that the decision can be fairly characterized as arbitrary or capricious and therefore a clear abuse of delegated discretion.

City of Virginia Beach v. VMRC, No. 2549021, Court of Appeals of Virginia Unpublished Opinions (2003)
Wetlands board findings of fact will be upheld by courts if supported by credible evidence, which boards can show by weighing all the pertinent factors and taking steps to protect the impacted areas, such as in this case imposing conditions on the permit. Discretionary decisions by wetlands boards will only be reversed if the decision is arbitrary and capricious. Otherwise, courts will not substitute their judgment for the boards' expertise.

Agency Deference

Palmer v. VMRC, 48 Va. App. 78 (2006)
VMRC decisions are given deference if they are supported by substantial evidence in the record and within their field of expertise.

Stearns v VMRC, 57 Va. Cir. 213 (Norfolk Cir. Ct. 2001) (subsequent appeal of 54 Va. Cir. 294)
Court's will give a state agency deference where a decision to grant or deny a permit was based upon agency expertise. If, however, an agency's decision to grant or deny a permit is based upon procedural grounds, the agency does not receive the same level of deference.

Police Power, Property Rights

Evelyn v. VMRC, 46 Va. App. 618 (2005)
VMRC has the policing power to enforce permits issued under Virginia Code §§ 28.2-1203 and 62.1-164. The permittee does not have unlimited property rights over structures approved by wetlands boards or VMRC.

Jurisdiction of the Court

Stearns v. VMRC, 60 Va. Cir. 296 (Norfolk Cir. Ct. 2002) (subsequent litigation to 57 Va. Cir. 213)
Twenty-one days after the entry of a final order, a trial court loses power over the cause of action. Pursuant to Virginia Code § 28.2-1315, judicial review is limited to appeals from VMRC's decisions. And, under the Virginia Administrative Process Act, the authority of the court to stay the action depends on whether the court finds such action to be required to prevent immediate, unavoidable, and irreparable injury.

Notice to Localities, Standing

City of Norfolk Wetlands Board v. VMRC, 54 Va. Cir. 294 (Norfolk Cir. Ct. 2000)
VMRC is required to give notice to localities when overturning wetlands board decisions so that the locality may appeal the VMRC decision, since the wetlands board cannot. Virginia Code § 28.2-1312. The Virginia Administrative Process Act controls whether or not a party has standing to appeal. In this case, a neighboring landowner that sought to intervene did not have standing because the neighbor was not challenging the lawfulness of the agency's decision, rather the neighbor agreed with the agency's decision.

Consideration of Factors, Substantial Evidence

The Coves at Wilton Creek, L.P. v. VMRC, 20 Va. Cir. 527 (Fairfax Cty. Cir. Ct. 1988).
VMRC (and wetlands boards) have an obligation to consider all relevant factors listed in the appropriate provisions of the Wetlands Act and local wetlands ordinance, and not rely on a single factor, otherwise their decision could be found arbitrary and capricious. This balancing of the factors must be shown in the written decision approving or denying the permit. There must be "substantial evidence" in the record to support VMRC's decision.

Factual Disputes, Timeliness

Bailey v. VMRC, 3 Va. Cir. 254 (Va. Beach Cir. Ct. 1984)

When a wetlands board or VMRC resolves factual disputes, courts will defer to their determinations. If an activity impairs the natural function of a coastal primary sand dune, wetlands boards are justified in denying a permit. Although a news article indicated possible prejudice of two board members, this issue was only raised on appeal without the local board having an opportunity to act on it during the initial hearing and was, therefore, not timely.

Burden of Proof, Agency Deference, Taking

Hall v. VMRC, 5 Va. Cir. 202 (Va. Beach Cir. Ct. 1984)

The complaining party bears the burden of proof to show an error of law, since agency decisions are presumed correct. Courts will defer to the decisions of VMRC and wetlands boards if the decision to deny a permit was not arbitrary or capricious and it achieved the goals of the Wetlands Act. Even where the landowners' use of their property is limited by the decision, there is no unconstitutional taking since preventing harm to public rights is not an abuse of police power.

Proper Party to an Action

Walsh v. Pruitt, 7 Va. Cir. 196 (Norfolk Cir. Ct. 1983)

Only the commission itself is a proper respondent in VMRC appeals but the court will generally give a petitioner an opportunity to amend their complaint so that the proper party is before the court if the amendment is timely (i.e., completed before any responsive pleadings filed).

Attorney General Opinions

Wetlands and Subaqueous Lands

1984-1985 Annual Report, Pg 448, October 31, 1984

"By reading a wetlands board's authority to carry out the Commonwealth's strong policy favoring wetlands preservation, together with the deference to the Wetlands Act decisions contained in [Virginia Code] § 62.1-3, I conclude that a local wetlands board should consider the impact on wetlands from the total project, including that portion of the project resting on subaqueous lands beyond the wetland. Although not expressly authorized to do so by statute, regulation of the length of the structure is vital to exercising the authority to regulate the use of wetlands. Whether such consideration will require imposition of a limitation on the length of structures located below mean low water is a factual determination which must be made on a case-by-case basis. That decision is subject to review by the Commission. If the wetlands board does not consider the wetlands impact of the total project, the Commission must consider, pursuant to [Virginia Code] § 62.1-3, the effect of such a subaqueous project on wetlands, when it determines whether or not to grant a permit to use subaqueous lands. I am, therefore, of the opinion that a local wetlands board is authorized to regulate the length of a structure which is constructed through both the intertidal zone and channelward of mean low water, subject to superior jurisdiction of the Commission to modify or reverse the decision."

Flood Control Projects

No. 19-017, September 6, 2019

"It is my opinion that (1) a local government's use of state-owned bottomlands for a flood control project qualifies as a "government activity" as defined in VA Code § 28.2-1300 and § 28.2-1400; (2) VA Code § 28.2-1200.1 empowers the Commonwealth to grant easements to local governments to use

state-owned bottomlands for flood control projects; and (3) an easement granted pursuant to VA Code § 28.2-1200.1 is made in the name of the Commonwealth acting through VMRC as the granting agency and that such easement must also be executed by the Attorney General, indicating the Attorney General's approval and countersigned by the Governor, indicating the Governor's approval. However, these conclusions are limited to easements in submerged bottomlands located outside the Baylor Survey."

Compensatory Mitigation

No. 15-043, October 2, 2015

"It is my opinion that VA Code § 62.1-44.15:20(E) prohibits a locality from instituting a policy or plan mandating that mitigation for impacts to wetlands or streams occurring within that locality be performed within the boundaries of the locality. This prohibition includes acceptance of a voluntary proffer from an applicant relating to the location of compensatory mitigation."

Public Comment

No. 15-027, September 4, 2015

"Because there is neither a state law nor a local ordinance prohibiting the wetlands board from receiving public comment where public comment is not required, because it is common practice for the Chair of a deliberative body to permit comment by non-members, and because of the overarching importance of open government and free discussion with citizens, as articulated by the Virginia Freedom of Information Act, it is my opinion that the local wetlands board may from time to time choose to permit public comment when public comment is not required."

Local Wetlands Board Members

No. 08-087, December 8, 2008

"It is my opinion that individuals holding public offices in a town may be appointed to serve on that town's wetlands board, which was created pursuant to a wetlands zoning ordinance under Chapter 13 of Title 28.1 (now Title 28.2). It further is my opinion that an individual serving on a town board of historic review or board of building code appeals may be appointed to the town's wetlands board."

Local Tax Assessment

No. 04-055, December 14, 2004

"It is my opinion that if a landowner has a recorded perpetual easement that qualifies as such under VA Code § 58.1-3233(3)(ii), the locality has no discretion in the matter and must grant open-space tax assessment to the parcel so encumbered. If, however, the landowner elects to proceed under VA Code § 58.1-3233(3)(iii), the locality has discretion to accept, reject, or negotiate modification of the proffered agreement with the landowner. It is also my opinion that wetlands mitigation banks not otherwise wholly exempt from local real estate taxation, must be assessed in the same manner as similarly situated and classified property. Finally, it is my opinion that the local tax assessor may require owners of wetlands mitigation banks to furnish certified statements of income and expenses pursuant to VA Code § 58.1-3294."

Forestry and Roads Exemptions

1993 Volume, Pg 154, March 22, 1993

"It is my opinion that neither the exemption for the cultivation and harvesting of forestry products nor the exemption for normal maintenance and repair for existing roads apply for the reconstruction of a road along the general route of a now defunct road, across a distance that appears to presently contain

wetlands vegetation, includes property owned by others, and crosses a navigable creek. Additionally, it is my opinion that a permit is required to use logging vehicles with balloon flotation tires to transport timber in a manner that would destroy wetlands vegetation in any area that the local wetlands board determines to be within their jurisdiction." Contact Information

- Local Wetlands Boards (LWB)
- Virginia Marine Resources Commission (VMRC)
- U.S. Army Corps of Engineers (Corps)
- Virginia Department of Environmental Quality (DEQ)

Center for Coastal Resources Management (CCRM) offers technical guidance on coastal issues including shorelines, tidal and non-tidal wetlands, marine debris and integrated coastal management. Living shorelines are a focus for our technical assistance including opportunities for on-site advice. Have a question? Contact Christine Tombleson / 804-684-7912.

VIMS Office of Research and Advisory Services (ORAS). VIMS serves as the Commonwealth's center of expertise in the marine environment, bringing together governmental, economic, regulatory, and scientific communities.

Shoreline Erosion Advisory Service (SEAS). Part of the Virginia Department of Conservation and Recreation offers erosion advice for tidal and non-tidal shorelines in Virginia.

For questions or comments about shoreline handbook pages, contact Pam Mason, CCRM.

FAQs: Frequently Asked Questions

Wetland Boards

What is a local Wetlands Board and who appoints the members?

A Wetland Board is a regulatory body comprised of citizens of a locality that administers the Virginia Tidal Wetland Act provisions of state law. For information on the number, requirements, and make-up of a board, see Being on a Board.

What qualifications are required to be a Wetlands Board member?

Each wetlands board member needs to be a resident of the locality in which they will serve. Typically, there are no requirements by a locality to serve on a wetlands board – however some demonstrated interest in the environment, shorelines, coastal erosion, or marine related issues is helpful and valuable. Prior training to serve on a wetlands board is not essential – although an interest in learning about your role and the issues you may confront as a board member is essential. VIMS offers regular training to wetlands board members and local staff on a wide variety of topics and holds an annual workshop which allows for board members, local staff, and others interested in shoreline issues to interact and share information. Learn more about training in Know Your Resources.

How are the Wetlands Board's jurisdictional areas and determined?

Wetland Boards are responsible for determination of jurisdictional tidal wetlands based upon the criteria in state law; lands contiguous to mean low water (MLW), within an elevation from MLW up to an elevation of 1.5 times the local tidal range for vegetated wetland or from MLW to mean high water for nonvegetated wetlands, and upon which are growing plants listed in state law. Typically, local wetland board staff make the determination of jurisdictional area. Assistance in making a determination may be provided by VIMS, VMRC (or SWCD on Agricultural lands). Note - The Corps makes determinations based on slightly different criteria and the tidal wetlands under their jurisdiction may or may not be of the same extent. See Who do I Ask? for help with the permitting process.

How is it determined where MHW, MLW, and the landward extent of vegetated tidal wetlands are located?

The precise determination of MLW and MHW location is made scientifically using a tidal epoch record of 19 years of water level observations. However, the location of MHW and MLW is typically estimated by site observations made during a mean tide condition on days that occur between spring tides (the greatest range of tides from lowest to highest when there is a full moon) and neap tide (when tidal range is at it minimum and there is a new moon). If a wetland board is not in agreement with the identified location mean high water and mean low water a tide gauge may be employed to collect water level data. The VMRC provides oversight on the use of tide gauge data to locate MLW and MHW elevation. For contact information for the VMRC by locality look here: Wetlands Boards.

Why are public hearings required and how are they conducted?

A public hearing is required by state law for wetlands permits. Details on the hearing and permit review process can be found under Conduct a Hearing.

Are Wetlands Boards required to make site visits?

Wetlands boards handle site visits in various ways. Board members are strongly encouraged to visit sites in advance of a hearing and with the applicant present. Some boards hold a monthly application site visit attended by multiple board members and organized and attended by local board staff. Board members also often visit sites on their own. In any case, it is best practice to always try to contact the applicant in advance of a planned visit as a courtesy, as well as have some documentation (business card or letterhead) from your locality proving that you are a wetlands board member. In cases where a visit occurs and the applicant is not present, it is best to leave a note that you have visited and include your contact information. More than three board members meeting for any reason - including site visits - requires the locality to issue a public notice of that meeting. Read more about Being on a Board.

Are Wetlands Boards allowed to consider project impacts outside of the Board's jurisdiction (in riparian buffers or subaqueous lands)?

Permit Information (under Part 1 - General Information) details the required items for the JPA listed in state law and includes equipment use and access. Project access is either via overland or from the water, both of which may have impacts on riparian buffer and subaqueous lands. In addition, shoreline projects frequently incorporate bank grading which includes upland area landward of tidal wetlands in the riparian buffer area. Also see more information on Laws & Jurisdictions.

How and when can a citizen file a protest about a project they don't agree with?

Any citizen can attend a public hearing an offer comment during the comment period of the hearing. Once a decision is made, a request to review that decision requires that twenty-five or more freeholders of property within the locality sign and submit a petition to the VMRC. All requests for review or appeal shall be made within ten days of the date of the board's decision. The Commission shall hear and decide the review or appeal within forty-five days of receiving the request or notice of appeal. For more on the appeals process see: Conduct a Hearing.

Where can I find more information for my county or city?

Virginia's coastal counties and cities each have a CCRMP Locality Portal; one stop for current and historic shoreline management information. Here you will find interactive mapping tools, shoreline and tidal marsh inventory reports, sea level rise and flooding information, GIS data for downloading, and other locality-specific VIMS shoreline publications.

Shoreline Projects

Do I have an erosion problem?

Erosion is a natural process occurring along most Chesapeake Bay shorelines. Bare soil areas without vegetation, numerous fallen trees, collapsing banks, and gradual shoreline retreat are all signs of

erosion. Not all erosion is a problem that needs to be corrected. If the erosion rate is very slow and the risk is low if the erosion continues, then consider leaving the shoreline in a natural condition. If the erosion cannot be tolerated and needs to be reduced, then first consider if a Living Shoreline method may be effective.

I have an erosion problem along my shoreline. Who should I contact?

To evaluate the erosion issue along your shoreline and receive technical assistance on possible solutions, the following resources are available free of charge.

Decision Support & Technical Assistance – *Science-based tools for self-help and the Shoreline Erosion Advisory Service.*

Who Should I Ask? – *Contact information for all agencies connected to the permit process; including VIMS and your local wetlands board.*

How do I get approval to modify my existing shoreline management approach to address sea level rise or changes in erosion?

State law includes provision for maintenance of existing shoreline structures (which can include vegetation and coir logs) in place within the same footprint. In other words, as long as there are no new, additional impacts to tidal wetlands, beaches or dunes. If the proposed repair or modification will impact jurisdictional area, a new permit will be required. For instance, adding height to an offshore sill or breakwater will most likely result in a change in the side slopes and bigger footprint with new impacts. This would require a permit.

What permits do I need to get approval to fix my shoreline?

One application, the Joint Permit Application (JPA), is used to request approvals for proposed shoreline erosion control projects from all permitting agencies, hence the name Joint Permit. The JPA can be obtained from the Virginia Marine Resources Commission (VMRC), your local wetlands board office, or from the web at the Army Corps of Engineers and other locations. Once the JPA is completed, it is submitted to the VMRC which serves as the clearinghouse and distributes the joint application to the following agencies for review: VMRC, Army Corps of Engineers, DEQ and the local wetlands board. The applicant is responsible for ensuring approvals from all applicable agencies have been issued prior to starting a project.

If you are proposing a living shoreline project that meets the requirements for a **General Permit**, a joint permit application is still required, but a wetlands board public hearing is not. The purpose of a general permit is to provide a streamlined permitting process as incentive to encourage property owners to utilize a living shoreline approach where appropriate. **Permit Information.**

What is a living shoreline?

Living Shorelines are nature-based approaches for protecting shorelines. They not only protect the shoreline from erosion but conserve, create or restore natural shoreline habitats and ecosystem services.

- VIMS Living Shorelines
- Restoration & Resilience

Are there any examples of living shorelines that I can go see?

Yes! Living shoreline demonstration sites are located throughout Tidewater. Some of these sites are self-guided and other require making arrangements for a visit. See story maps of resilient shorelines in Virginia on ADAPTVA.

- Living Shorelines: Marshes and Oysters
- Living Shorelines: Beaches and Dunes

Why is a bulkhead not a good option for most shorelines?

A bulkhead is an option for certain shorelines such as canals and marinas where navigation limits the use of other options. However, on shorelines where other options are feasible, bulkheads are not recommended for several reasons.

- Bulkheads are vertical structures. Wave energy, especially on high energy shorelines, hitting the bulkhead deflects with no dissipation and the energy is directed to the base of the bulkhead and along the bulkhead to neighboring properties. Over time this can lead to erosion at the base of the bulkhead and on adjacent lands. Beaches and marshes channelward of bulkheads gradually disappear due to the deflected wave energy and resulting deeper water level at the base of the bulkhead. This erosion will eventually undermine the bulkhead and cause it to fail.
- The deeper water depths at the channelward side of the bulkhead will eliminate any existing area for juvenile fish to hide in shallow water depths from the larger fish.
- Bulkheads sever the connection between the upland and the intertidal area. For animals such as turtles that spend time in the water but lay their eggs on land, a bulkhead will prevent the turtle from accessing the upland.
- Bulkheads prohibit the movement of any sediment from the shoreline which is necessary for the sustainability of marshes and beaches downstream.

Where do I find a marine contractor to do my shoreline work?

- CCRM maintains a shoreline permit database for information collected from shoreline permit applications. Upon request, CCRM will provide a list of marine contractors working in your locality. Contact Christine Tombleson, chrisdtine@vims.edu/ 804-684-7912 for more information.
- The Army Corps of Engineers has a list of Agents for Waterfront Construction available on their website. It is dated March 21, 2008.
- The internet
- Ask a shoreline property owner that has a shoreline approach you are interested in who they used as a contractor.

How much does a living shoreline project cost?

The construction costs for living shoreline projects and other stabilization methods vary widely depending on the shoreline length, level of protection needed, and the costs for materials and labor. Non-structural methods cost an average $50 - $100 per foot, such as beach nourishment and planted marshes. Projects with sand fill and/or stone structures typically cost $150 - $500 per foot. This does not include permitting costs. Upfront construction cost is only one factor to consider. The value of ecosystem services provided by living shorelines help offset these costs indirectly over time.

Are there any programs available to help fund my shoreline project?

Yes! Find out more information on these three funding programs here, Restoration & Resilience.

- Virginia Conservation Assistance Program (VCAP) – cost share program
- Conservation Reserve Enhancement Program (CREP) – cost share program
- The Virginia Clean Water Revolving Loan Fund (CWRLF) – low interest loans

Who can I contact for more information?

For permit processing questions or advice see Who Do I Ask? For other assistance see CCRM's Staff Directory or Contact Us and we will direct your question to the appropriate person who will get back to you as soon as possible.

Appendix 1: Glossary

A

Adapt Virginia (ADAPTVA) - a website gateway to information for individuals, local programs, and agencies engaged in climate adaptation; focusing on the physical and social vulnerabilities by integrating the best available science, legal guidance, and planning strategies; content includes legal and policy resources, stories that explain adaption through maps and pictures, a searchable web catalogue, and mapping tools that address short and long-term predictions for rising water levels

Anchor Piles - anchors, usually vertical piles driven into the ground, on the landward side of the bulkhead, to which the bulkhead is tied by tiebacks or tie-rods (commonly called deadmen)

Armor - the larger stone used as the outer layers of a revetment which is directly exposed to waves

B

Bathymetry - the study of underwater depth waterbodies; the underwater equivalent to the study of elevations or topography on land

Beaches - defined in state legislation as "The shoreline zone comprised of unconsolidated sandy material upon which there is a mutual interaction of the forces of erosion, sediment transport and deposition that extends from the low water line landward to where there is a marked change in either material composition or physiographic form such as a dune, bluff, or marsh, or where no such change can be identified, to the line of woody vegetation (usually the effective limit of stormwaves), or the nearest impermeable man-made structure, such as a bulkhead, revetment, or paved road"

Best Management Practices (BMPs) - a term used to describe a type of water pollution control; in stormwater management (both urban and rural) and wetland management, BMPs may refer to a principal control or a treatment technique based on best available science or technology

Bottomlands - low-lying lands along a watercourse periodically inundated by floods or storm events, or submerged lands which underlie a watercourse

Breakwater - an offshore structure which is aligned parallel to the shoreline; a fixed breakwater refers to one generally constructed of stone or gabion baskets (wire baskets or mattresses which are filled with stone), placed on the bottom; floating breakwaters should be firmly anchored and may be constructed of tires, logs, specially fabricated boxes and baffles, or other floating materials

Buried Toe - the practice of trenching in the seaward toe of a riprap structure to help prevent scour and shifting of the structure

C

Center for Coastal Resources Management (CCRM) - located at the Virginia Institute of Marine Science, its formal mission is to support informed decision-making on resource management issues at all levels of

government, including private and corporate citizens; to fulfill this mission, the Center undertakes research, provides advisory service in wetlands management, and conducts outreach education

Chesapeake Bay Preservation Act (CBPA) - state legislation enacted in 1988 to improve water quality in the Chesapeake Bay through effective land management and planning

Clean Water Act (CWA) - federal legislation that establishes a framework for the regulation of pollutant discharges into the waters of the United States, as well as the creation of water quality standards for surface waters

Clean Water Revolving Loan Fund (CWRLF) - administered by the Department of Environmental Quality, the fund reduces interest rates for local governments for projects that improve water quality or prevent future problems

Coastal Primary Sand Dune - defined in state legislation as "A mound of unconsolidated sandy soil which is contiguous to mean high water, whose landward and lateral limits are marked by a change in grade from ten percent or greater to less than ten percent, and upon which is growing any of the species... Shall not include any mound of sand, sandy soil, or dredge spoil deposited by any person for the purpose of temporary storage, beach replenishment or beach nourishment, nor shall the slopes of any such mound be used to determine the landward or lateral limits of a coastal primary sand dune"

Coastal Primary Sand Dunes and Beaches Act - state legislation that recognizes the importance of protecting dunes and beaches and establishes a permitting program for certain uses and activities that have the “potential for encroaching on or otherwise damaging coastal primary sand dunes or state-owned beaches”

Coastal Primary Sand Dunes/Beaches Guidelines - last reprinted in 1993, a document adopted by the Virginia Marine Resources Commission that includes a description of coastal primary sand dunes and beaches and their values, consequences of altering, guidelines for reviewing alterations, considerations for construction and mitigation activities, and barrier island policy

Coastal Zone - the interface between the land and water along shorelines; significant areas because a majority of the world's population inhabit, most of the world’s commerce, and the highest levels of biological and ecological diversity occurs in such zones; such areas are continually changing because of the dynamic interaction between the oceans and the land

Coastal Zone Management (CZM) - a process for the management of the coast using an integrated approach, regarding all aspects of the coastal zone, including geographical and political boundaries, in an attempt to achieve sustainability

Coastal Zone Management Act (CZMA) - federal legislation with the goal to “preserve, protect, develop, and where possible, to restore or enhance the resources of the nation’s coastal zone”

Compact - a pact, formal agreement between levels of government or government agencies

Compensation - also known as compensatory mitigation, is actually the third step in a sequence of actions that must be followed to offset impacts to aquatic resources; part of a process developed

between the Environmental Protection Agency and the U.S. Army Corps of Engineers to help guide mitigation decisions and determine the type and level of mitigation required under Clean Water Act Section 404 regulations; step 1 is to avoid adverse impacts to aquatic resources and no discharge shall be permitted if there is a practicable alternative with less adverse impact; step 2 is to undertake appropriate and practicable steps to minimize adverse impacts must be taken if impacts cannot be avoided; step 3 requires that appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain, and that the amount and quality of compensatory mitigation may not substitute for avoiding and minimizing impacts

Comprehensive Coastal Resource Management Portals (CCRMPs) - information found at the Virginia Institute of Marine Science website to help implement Virginia's tidal shoreline laws and policies including general guidance for the entire coastal area, locality specific information, shoreline best management practices, comprehensive plan guidance, and tidal shoreline laws and policies

Conservation Reserve Enhancement Program (CREP) - administered by the U.S. Department of Agriculture, a program that targets specific State or nationally significant conservation concerns, and federal funds are supplemented with non-federal funds to address those concerns; in exchange for removing environmentally sensitive land from production and establishing permanent resource conserving plant species, farmers and ranchers are paid an annual rental rate along with other federal and non-federal incentives as applicable per each agreement; participation is voluntary, and the contract period is typically 10-15 years

Core - the smaller stone used as the base of the revetment which is not directly exposed to waves

Corps - the United States Army Corps of Engineers

D

Department of Conservation and Recreation (DCR) - the Commonwealth’s lead natural resource conservation agency, responsible for the protection and management of natural habitat, parks, clean water, dams, open space and recreational access

Department of Environmental Quality (DEQ) - the Commonwealth’s lead agency for administering state and federal laws and regulations for air quality, water quality, water supply and land protection; it additionally manages other programs cover a variety of environmental activities, such as improving the ability of businesses and local governments to protect the environment and prevent pollution, and provides technical and financial assistance for air and water quality improvements, coastal zone management and remediation of contaminated land and water

E

Ecosystem Services - the many and varied benefits gifted by the natural environment and from healthy ecosystems

Environmental Protection Agency (EPA) - is an independent agency of federal government with Cabinet status for environmental protection

F

Fetch - distance that wind blows over water prior to its reaching a shoreline; generally it is used as an estimate of potential wave energy or stress the shoreline may expect; its effects are usually associated with the level of surface water disturbances associated with waves or swells and their interaction with a shoreline; the main factor that creates storm surge

Filter Cloth - the synthetic water-permeable textile placed between sheeting and backfill which prevents soil loss which leads to coastal erosion and flooding

Frequently Asked Questions (FAQs) - a list of frequently asked questions and answers on a particular topic; the format is often used where common questions tend to recur in relationship to common knowledge gaps

G

General Permit (GP) - a specialized permit developed by federal or state agencies to simplify and promote environmental restoration efforts

Geographic Information System (GIS) - a system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data; its applications are tools that allow users to create interactive queries, analyze spatial information, edit data in maps, and present the results of all these operations

Groin - a structure that is perpendicular to the shoreline and extends into the water; often installed in a series, they function in trapping sand moving in the along-shore currents

H

Hydric Soils - soil types which are permanently or seasonally saturated by water, resulting in anaerobic conditions, as found in wetlands

Hydrophytic Plants - vegetation which has adapted to growing in low-oxygen (anaerobic) conditions associated with prolonged saturation or flooding; such vegetation has adapted to anaerobic soil conditions by evolving alternative methods of collecting oxygen

I

Implementation Plans (IPs) - a documented strategy which involves executing the process improvements that have been developed throughout the life of a project; a thorough strategy usually covers at least five elements: work plan, resources and budget, stakeholders, risk assessment, and quality control

In-lieu Fees - money provided to the Commonwealth or to a local government, at the direction of a regulatory agency, to be used for restoration and enhancement of habitat, with the goal to create or restore functional habitat that satisfies compensatory mitigation requirements to offset permanent disturbances on lands as a result of development

Intensely Developed Area (IDA) - as defined in the Virginia Administrative Code, areas which provide "at least one of the following conditions existed at the time the local program was originally adopted: 1. Development has severely altered the natural state of the area such that it has more than 50% impervious surface; 2. Public sewer and water systems, or a constructed stormwater drainage system, or both, have been constructed and served the area by the original local program adoption date. This condition does not include areas planned for public sewer and water or constructed stormwater drainage systems; or 3. Housing density is equal to or greater than four dwelling units per acre"

Intertidal - the area of a seashore which is above water level at low tide and underwater at high tide; also known as the foreshore or seashore, this area includes a variety of different habitat types for various species of plant and animal life

J

Jetting - a method of sinking structures in substrate where high pressure water "washes" the structure down and the hole refills with sediment as the pressurized water is cut off

Jetty - linear structures placed perpendicular to the shoreline and cross the intertidal zone to deeper water; these structures function to intercept sand moving along the shoreline and protect channels and inlets from shoaling and wave energy

Joint Permit Application (JPA) - a form submitted by an owner of property considering development activity to apply for permits (i.e. standard/ permits or general permits) from the Norfolk District U.S. Army Corps of Engineers for work in the waters of the United States (including wetlands) within Virginia; this form is also used to apply for corresponding permits from the Virginia Marine Resources Commission, the Virginia Department of Environmental Quality, and/or Local Wetlands Boards; this form is utilized for permitting purposes involving tidal and/or non-tidal water, tidal and/or non-tidal wetlands, and/or dune/beach resources, including, but not limited to, construction, dredging, filling, or excavation

K

L

Linear Feet (LF) - a 12-inch measurement of length, where the width and height of the item to be measured are insignificant

Living Shoreline - human-made structures that incorporate native wetland vegetation and may also include elements such as rock, oysters or coir (coconut fiber) logs

Local Wetlands Board (LWB) - as defined in the Code of Virginia, "a board created pursuant to § 28.2-1303 of the Code of Virginia" … "consisting of five or seven residents of that jurisdiction appointed by the local governing body" to administer the tidal wetlands program in a locality which has adopted a Wetlands Ordinance

Low-profile - a recommended design for either timber or stone groins, in which the elevation of the channelward end of the groin is no greater than that of mean low water; this design allows the sand to bypass the groin more quickly once the groin cell is filled, lessening the interruption of sediment movement to downdrift shorelines

M

Marsh Toe - a low-profile rock structure placed channelward of a marsh, usually being placed protection directly against an eroding scarp

Mean High Water (MHW) - the line of the lunar high tide averaged over 20 years

Mean Low Water (MLW) - the line of the lunar low tide averaged over 20 years

Mitigation - also known as environmental mitigation, compensatory mitigation, or mitigation banking, a term used primarily by the government to describe projects or programs intended to offset known impacts to an existing natural resource such as a stream, wetland, or endangered species; to "mitigate" means to make less harsh or hostile; typically a part of an environmental crediting system established by governing bodies which involves allocating debits and credits, in which debits occur in situations where a natural resource has been destroyed or severely impaired and credits are given in situations where a natural resource has been deemed to be improved or preserved

N

National Fish and Wildlife Foundation (NFWF) - an American government-backed agency dedicated to sustaining, restoring and enhancing the nation's fish, wildlife, plants and habitats for current and future generations; it advances its mission through innovative public and private partnerships, primarily through grants which invest financial resources and intellectual capital into science-based programs designed to address conservation priorities and achieve measurable outcomes

Nationwide permits - a defined group of permits which have been issued by the U.S. Army Corps of Engineers to address a variety of specific activities involving work in the waters of the United States (including wetlands) within the United States

Natural Shoreline Features - tidal wetlands, beaches and dunes, and riparian buffers

Nature-based Features - human-made “structures” constructed to mimic the benefits of natural shoreline features to defend the shoreline; a living shoreline is an example

No Net Loss Policy - a state enacted policy of no net loss of wetland acreage and function, specifying that the Virginia Water Protection Program shall contain compensation requirements sufficient to achieve no net loss of existing wetland acreage and no net loss of functions in all surface waters

Nontidal - inland, freshwater areas of water or shorelines not subject to tidal influence; typically areas where the water table is at or near the surface, or the land is covered by shallow water which encompass a variety of environments such as marshes and swamps, bottomland hardwood forests, wet meadows, inland bogs and the shallow areas of lakes and ponds

Nontidal Wetland - defined in state legislation as "those wetlands (other than tidal wetlands) that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”

Non-vegetated - defined in state legislation as "unvegetated lands lying contiguous to mean low water and between mean low water and mean high water, including those unvegetated areas of Back Bay and its tributaries and the North Landing River and its tributaries subject to flooding by normal and wind tides but not hurricane or tropical storm tides"

O

P

Q

R

Regional Permit (RP) - a defined group of permits which have been issued either by the U.S. Army Corps of Engineers Norfolk District or the Virginia Marine Resources Commission to address a variety of specific activities involving work in the waters of the United States (including wetlands) within the Commonwealth, or for projects involving tidal wetlands or subaqueous beds as defined in the Code of Virginia

Resource Management Area (RMA) - as defined in the Virginia Administrative Code, “shall include land types that, if improperly used or developed, have a potential for causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area”, and “shall be provided contiguous to the entire inland boundary of the Resource Protection Area;” land categories to “be considered for inclusion in the Resource Management Area and, where mapping resources indicate the presence of these land types contiguous to the Resource Protection Area, should be included in designations of Resource Management Areas: 1. Floodplains; 2. Highly erodible soils, including steep slopes; 3. Highly permeable soils; 4. Nontidal wetlands not included in the Resource Protection Area; and 5. Such other lands considered by the local government … to be necessary to protect the quality of state waters”

Resource Protection Area (RPA) - as defined in the Virginia Administrative Code, “shall consist of lands adjacent to water bodies with perennial flow that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may cause significant degradation to the quality of state waters”; such “lands provide for the removal, reduction or assimilation of sediments, nutrients and potentially harmful or toxic substances in runoff entering the bay and its tributaries, and minimize the adverse effects of human activities on state waters and aquatic resources;” and “shall include: 1. Tidal wetlands; 2. Nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow; 3. Tidal shores;” … “4. Such other lands considered by the local government … and to be necessary to protect the quality of state waters;” and “5. A buffer area not less than 100 feet in width located adjacent to and landward of the components listed” above, “and along both sides of any water body with perennial flow”

Return Walls - these are walls located at each end of the bulkhead and shoreline, approximately perpendicular to the bulkhead and shoreline, which tie the bulkhead into the upland and prevent the bulkhead from being flanked

Revetment - a sloped structure consisting of multiple layers of stone or other material placed along a bank

Riparian - a zone or area which is the interface between land and a waterbody

Riparian Buffer - areas of trees, shrubs, and other vegetation found next to tidal and non-tidal streams and other waterways in which chemical and biological processes of the vegetation remove nitrogen and phosphorous and trap sediment

Riprap - the stone used to build a revetment; frequently, the structure itself is called riprap

S

Sand Dunes - defined in state legislation as “a mound of unconsolidated sandy soil which is contiguous to mean high water, whose landward and lateral limits are marked by a change in grade from ten percent or greater to less than ten percent, and upon which is growing any of the following species..." listed in the Virginia Code; such areas “shall not include any mound of sand, sandy soil, or dredge spoil deposited by any person for the purpose of temporary storage, beach replenishment or beach nourishment, nor shall the slopes of any such mound be used to determine the landward or lateral limits of a coastal primary sand dune”

Screw Anchors – an anchoring method used in bulkhead construction that consists of rods that screw into the upland

Shoreline Erosion Advisory Service (SEAS) - a technical assistance program provided free of charge in the Commonwealth to assist private landowners and localities in Virginia with erosion problems; services are available in both tidal and non-tidal areas, and include technical assistance, site investigations, written reports, plan reviews, construction inspections, and information

Shoreline Management - a process of making choices to address the desire to protect upland property from erosion, balanced with the benefits and uses of natural and nature-based shoreline features

Shoreline Management Model (SMM) - a GIS model developed by the Virginia Institute of Marine Science that predicts the best management practices for a shoreline, and where living shorelines are suitable, using available map data and decision tree logic; shoreline conditions factored into the model include: presence or absence of natural buffers (tidal marshes, beaches, riparian forests, submerged aquatic vegetation), bank height, nearshore bathymetry, wave exposure (fetch), and existing defense structures and proximity of upland development

Shoreline Processes - the interaction of water, wind, waves, biological activities, and the shore that shape diverse beach, bluff, cliff, bank, riverine, and estuarine areas; such processes interact to form shorelines exhibiting variable measures of stability and thereby benefit shoreline ecosystems along with the many organisms that live within them

Sill - a continuous low-profile breakwater structure

Soil and Water Conservation District (SWCD) - political subdivisions of the Commonwealth established to develop comprehensive programs and plans to conserve soil resources, control and prevent soil erosion, prevent floods and conserve, develop, utilize and dispose water; such districts serve as local resources for citizens in nearly all Virginia localities, and manage conservation programs, employ staff and deliver conservation services free of charge; districts also help deliver many programs aimed at controlling and preventing nonpoint source pollution

Spur - a structure attached to the downdrift side of a groin and oriented perpendicular to a groin, and parallel to the shoreline; the structure may be aligned anywhere between mean low water and the channelward end of the groin; its purpose is to prevent characteristic erosion of sand immediately downdrift of the groin

Standard Permit - an individual permit issued by the U.S. Army Corps of Engineers Norfolk District, the Virginia Marine Resources Commission, or a local wetlands board to address a variety of activities involving work in the waters of the United States (including wetlands) within the Commonwealth, or for projects involving tidal wetlands or subaqueous beds as defined in the Code of Virginia when projects have more than minimal individual or cumulative impacts; such permits are evaluated using additional environmental criteria, and involve a more comprehensive public interest review.

State-owned - areas of land owned in fee simple by the Commonwealth

State-owned Bottomlands - also called state-owned marine lands, state-owned subaqueous bottoms, state-owned subaqueous beds, or state-owned subaqueous lands, are areas of land owned in fee simple by the Commonwealth that lie beneath bodies of water; in tidal areas such areas of land are located seaward of mean low water; in non-tidal areas such areas of land are located waterward of ordinary high water

Subaqueous - areas and resources upon these areas that are typically underwater most of the time

Submerged - under water

Submerged Aquatic Vegetation (SAV) - a term used to describe rooted, vascular plants that grow completely underwater except for periods of brief exposure at low tides

Submerged Lands - land which are typically underwater

Submerged Lands Act - state legislation which specifies it is unlawful for a person to build on, dump into or encroach upon the beds of the bays and ocean, rivers, streams, creeks that are the property of the Commonwealth unless first obtaining a permit from the Virginia Marine Resources Commission

T

Tidal - periodically rising and falling or flowing and ebbing waters caused as a result of either lunar gravitational forces or prevailing wind patters

Tiebacks - rods used to connect the bulkhead to the land anchor pile or deadmen (usually the horizontal piles connected to the anchor pile)

Tombolo - the name for the area of build-up of sand landward of gapped breakwaters

Total Maximum Daily Load (TMDL) - a regulatory term in the federal Clean Water Act, describing a plan for restoring impaired waters that identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards

U

United Stated Army Corps of Engineers (USACE) - a federal agency under the Department of Defense that primarily oversees dams, canals and flood protection in the United States, as well as a wide range of public works throughout the world; the agency which administers federal regulatory programs involving work in the waters of the United States (including wetlands)

United States Geological Survey (USGS) - a scientific agency of the federal government which studies the landscape of the United States, its natural resources, the natural hazards that threaten it, and provide information to the general public.

Updrift and Downdrift - refer to longshore drift, or the movement of sediment along the shore; sediment may move in both directions along a particular shoreline; the net direction of movement determines the net accumulation of sediment by a groin; groins necessarily deprive downdrift shorelines of their sand supply, worsening any existing erosion problems

V

Virginia (VA) - the Commonwealth of Virginia

Virginia Administrative Code (VAC) - the compilation of permanent regulations that have the force of law in the Commonwealth; the Virginia Register of Regulations is published by the Virginia Code Commission and is the official publication of state government regulations, petitions for rulemaking, emergency regulations, Governor's executive orders, state lottery regulations and director's orders, and State Corporation Commission orders and regulations

Virginia Coastal Policy Center (VCPC) - located at the College of William & Mary Law School, it provides science-based legal and policy analysis of ecological issues affecting the state's coastal resources, providing education and advice to a host of Virginia’s decision-makers, from government officials and legal scholars to non-profit and business leaders; with two partners - the College of William & Mary's Virginia Institute of Marine Science, and Virginia Sea Grant - it works with scientists, local and state political figures, community leaders, the military, and others to integrate the latest science with legal and policy analysis to solve coastal resource management issues

Virginia Coastal Zone - defined in state legislation as including all of “Tidewater Virginia” and means the following counties: Accomack, Arlington, Caroline, Charles City, Chesterfield, Essex, Fairfax, Gloucester, Hanover, Henrico, Isle of Wight, James City, King and Queen, King George, King William, Lancaster, Mathews, Middlesex, New Kent, Northampton, Northumberland, Prince George, Prince William,

Richmond, Spotsylvania, Stafford, Surry, Westmoreland, and York; and the Cities of Alexandria, Chesapeake, Colonial Heights, Fairfax, Falls Church, Fredericksburg, Hampton, Hopewell, Newport News, Norfolk, Petersburg, Poquoson, Portsmouth, Richmond, Suffolk, Virginia Beach, and Williamsburg

Virginia Coastal Zone Management Program - a network of state agencies and local governments which administers enforceable laws, regulations, and policies that protect the Commonwealth's coastal resources and fosters sustainable development; the lead agency is the Virginia Department of Environmental Quality

Virginia Conservation Assistance Program (VCAP) - an urban cost-share program that provides financial incentives and technical and educational assistance to property owners installing eligible best management practices in Virginia's participating Soil and Water Conservation Districts

Virginia Institute of Marine Science (VIMS) - a research institution associated with the College of William & Mary's College of Marine Science whose mission is to conduct research in coastal ocean and estuarine science, educate students and citizens, and provide advisory service to policy makers, industry, and the public

Virginia Marine Resources Commission (VMRC) - the lead agency for administering the stewardship and protection programs for the Commonwealth's marine and tidal aquatic resources; including managing saltwater recreational and commercial fishing, and managing water bottoms in public trust for the citizens of the Commonwealth

Virginia Water Protection (VWP) - the Virginia Water Protection Compliance Program comprised of 3 overlapping program areas that function to fulfill Virginia Water Protection regulations: permitting, compliance and enforcement; regulatory compliance is a system to make sure permittees and other members of the public are aware of and take steps to follow the State Water Control Law (§ 62.1-44.15:21 and § 62.1-44.15:20), the Virginia Water Protection Permit Program Regulation (9 VAC 25-210), and the associated general permit regulations; compliance strives to protect wetlands, streams, and other state waters from being filled, excavated, drained, or dredged without a Virginia Water Protection permit

Vegetated Wetlands - defined in state legislation as "lands lying between and contiguous to mean low water and an elevation above mean low water equal to the factor one and one-half times the mean tide range at the site of the proposed project in the county, city, or town in question, and upon which is growing any of the species..." listed in the Virginia Code

Vegetated Wetlands of Back Bay and its Tributaries or Vegetated Wetlands of the North Landing River and its Tributaries - defined in state legislation as "all marshes subject to flooding by normal and wind tides, but not hurricane or tropical storm tides, and upon which is growing any of the species..." listed in the Virginia Code

Vegetative Control - the use of wetlands vegetation to deter erosion, either alone or in concert with an offshore breakwater or sill; vegetation may be planted or allowed to colonize naturally

W

Water Quality Impact Assessment (WQIA) - as defined in the Code of Virginia, an evaluation undertaken "to (i) identify the potentially adverse impacts of proposed development on water quality and lands within the Chesapeake Bay Preservation Areas; (ii) ensure that, where use, development or redevelopment takes place within the Chesapeake Bay Preservation Areas it will be located on those portions of a site and in a manner that will be least disruptive to the natural functions of the Resource Protection Areas and other sensitive lands; and (iii) specify means to avoid, minimize or mitigate the impacts of development for water quality protection

Wetlands - means those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions; generally include swamps, marshes, bogs, and similar areas

Wetlands Act - state legislation initially adopted in 1972 that recognizes the environmental value of tidal wetlands, establishes a permitting system for their protection, and authorizes localities to establish a local wetlands board and adopt a wetlands ordinance

Wetlands Guidelines - last reprinted in 1993, an advisory document adopted by the Virginia Marine Resources Commission that provides guidance for wetland permit decision-making; including a brief description of each wetlands community type with an environmental value rank and criteria for evaluation of wetland disturbing activities.

Whaler - a structural member of a wood bulkhead or groin which runs horizontally between pilings and braces the sheeting

Wind Tidal - waterbodies that are regularly subject to normal lunar tides as well as by variations governed primarily by prevailing wind patterns; such areas are located in the southeastern corner of the Commonwealth in the cities of Virginia Beach and Chesapeake

X

Y

Z

Appendix 2: Form Letter Templates

Application and Permit Hearing

- Board Decision
- Enclosed Permit
- Receipt of Application - Fee Request
- Receipt of Fee
- Sample Letter of Credit
- Sign Documents
- Subpoena
- Wetland Permit

Violation and Restoration

- After-the-Fact Application
- Restoration Order
- Restoration Complete
- Restored Not Completed
- Additional Time for Restoration
- Show Cause
- Stop Work
- Sworn Complaint

Compliance

- Final Inspection
- Letter of Credit Release
- Surety Bond