

Comprehensive Coastal Resource Management for Tidewater Virginia Localities

Issue Statement

Coastal ecosystems reside at the interface between the land and the water, and are naturally very complex. They perform a vast array of functions that encompass biological, chemical and physical processes. Humans derive benefits from coastal ecosystems such as habitat, water quality, and shoreline stabilization.

For example, coastal wetlands absorb nutrients that drain off the upland. This is an important filtering process that improves water quality in the adjacent receiving waters. Humans benefit from having good water quality; therefore, the wetland is providing a service in that capacity.

Beaches and dunes are another component of the coastal ecosystem valued by humans. Although typically regarded for their recreational value, beaches and dunes also provide a number of other important direct and indirect services. Beaches and dunes provide habitat, foraging and nesting areas for shore birds, turtles, and crustaceans, among other organisms. They also act as the first line of defense to incoming high energy storm waves and therefore provide an important function protecting uplands from erosion and structural loss.

The science behind coastal ecosystem resource management has revealed that traditional resource management practices limit the ability of the coastal ecosystem to perform many of these essential functions. The loss of these services has already been noted throughout coastal communities in Virginia as a result of development in coastal zone areas, coupled with common erosion control practices. Beaches and dunes are diminishing due to a reduction in a natural sediment supply. Wetlands are drowning in place as sea level rises and barriers to inland migration have been created by construction of bulkheads and revetments. There is great concern by scientists at the Virginia Institute of Marine Science and on the part of the Commonwealth of Virginia that the continued armoring of shorelines and construction within the coastal areas will threaten the long-term sustainability of coastal ecosystems under current and projected sea level rise.

In the 1980s, interest arose in the use of planted wetlands to provide natural shoreline erosion control. Today, a full spectrum of living shoreline design options is available to address the various energy settings and erosion problems found. Depending on the site characteristics, they range from marsh plantings to the use of rock sills in combination with beach nourishment. Studies have found that these approaches minimize impacts to the natural coastal ecosystems while successfully combating shoreline erosion.

Research continues to reinforce the principle that an integrated approach for managing tidal shorelines enhances coastal resources. Therefore, adoption of new guidance and shoreline best management practices for coastal communities is now necessary to insure that functions

performed by coastal ecosystems will be preserved and the benefits derived by humans from coastal ecosystems will be maintained into the future.

Policy Statement

In 2011, the Virginia Assembly passed legislation to amend §28.2-1100 and §28.2-104.1 of the Code of Virginia and added section §15.2-2223.2, to codify a new directive for shoreline management in Tidewater Virginia. In accordance with section §15.2-2223.2, all local governments shall include in the next revision of their comprehensive plan beginning in 2013, guidance prepared by the Virginia Institute of Marine Science (VIMS) regarding coastal resource management and, more specifically, guidance for the appropriate selection of living shoreline management practices. The legislation establishes the policy that living shorelines are the preferred alternative for stabilizing eroding shorelines. Adoption of the VIMS shoreline guidance will help communicate to stakeholders, including private and public property owners, contractors, and developers the Commonwealth's preference for a living shorelines approach wherever possible.

This guidance, known as Comprehensive Coastal Resource Management Guidance, is being prepared by VIMS for localities within the Tidewater region of Virginia and shared through their Comprehensive Coastal Resource Management Portal (CCRMP). It explicitly outlines where and what new shoreline best management practices should be considered where coastal modifications are necessary to reduce shoreline erosion and protect our fragile coastal ecosystems. This guidance will include a full spectrum of appropriate management options which can be used by local governments for site-specific application and consideration of cumulative shoreline impacts. The guidance applies a decision-tree method using a based resource mapping database that will be updated from time to time, and a digital geographic information system model created by VIMS.

Recommendations

- Refer to the guidance presented in the locality's Comprehensive Coastal Resource Management Portal (CCRMP) prepared by VIMS to guide regulation and policy decisions regarding shoreline erosion control.
- Utilize VIMS Decision Trees for onsite review and subsequent selection of appropriate erosion control/shoreline best management practices:
<http://ccrm.vims.edu/decisiontree/index.html>.
- Utilize VIMS' CCRMP Shoreline Best Management Practices for management recommendation for all tidal shorelines in the jurisdiction.
- Consider a policy where the above Shoreline Best Management Practices become the recommended adaptation strategy for erosion control, and where a departure from these recommendations by an applicant wishing to alter the shoreline must be justified at a hearing of the board(s).
- Encourage staff training on decision making tools developed by the Center for Coastal Resources Management at VIMS.

- Follow the development of the state-wide General Permit being developed by VMRC. Ensure that local policies are consistent with the provisions of the permit.
- Evaluate and consider a locality-wide permit to expedite shoreline applications that request actions consistent with the VIMS recommendation.
- Seek public outreach opportunities to educate citizens and stakeholders on new shoreline management strategies including Living Shorelines.
- Follow the development of integrated shoreline guidance under development by VMRC.
- Evaluate and consider a locality-wide regulatory structure that encourages a more integrated approach to shoreline management.
- Consider preserving available open spaces adjacent to marsh lands to allow for inland retreat of the marshes under rising sea level.
- Evaluate and consider cost share opportunities for construction of living shorelines.