



Revised Tidal Wetlands Guidelines for Virginia: A New Mandate for Living Shoreline Use and Sea Level Rise Adaptation

By: Henry R. "Speaker" Pollard, V

07.22.2021

Can you still build a bulkhead along the shoreline in coastal Virginia to protect your property? Well, it depends, but now the answer is more likely to be "no." Major changes to how Virginia tidal waterfront property owners and operators can protect their shorelines were recently adopted as part of a revised version of Virginia's Tidal Wetlands Guidelines ("Guidelines") issued by the Virginia Marine Resources Commission ("VMRC"). Driving many of the core changes were a living shoreline use mandate and climate change resiliency objectives contained in Senate Bill 776 ("SB776") passed by the General Assembly last year. While it is still unclear how VMRC and local wetlands boards implementing the revised Guidelines will address the practical and technical concerns raised by the new requirements, the net result is that tidal waterfront owners in Virginia will face a much greater burden when seeking to construct hardened structure improvements (e.g., bulkheads, sea walls, and revetments).

1. SB776's New Mandates and Standards.

The passage of SB776 in the 2020 General Assembly session set three new benchmarks for shoreline management permitting in Virginia. First, it converted the existing statutory preference for use of living shoreline approaches as a means of shoreline management and protection into a mandate for their use, "unless the best available science shows that such approaches are not suitable." Even if a complete living shoreline approach is not suitable based on "best available science," elements of living shoreline approaches must be included in the proposed project "to the maximum extent possible." *Id.* This mandate is the latest of several legislative steps to incorporate living shorelines into tidal shoreline protection. Indeed, VMRC had developed prior to SB776 a general permit (like a permit-by-rule) to streamline the permitting process for using living shorelines in tidal wetlands and waters. See 4 Va. Admin. Code Chaps. 20-1300, 20-1330;

Second, SB776 also changed Va. Code § 28.2-1301.B expressing VMRC's duty to ensure the

preservation and protection of tidal wetlands while accommodating necessary economic development. This provision now also requires VMRC to ensure the protection of shorelines and sensitive coastal habitats from sea level rise and coastal hazards. Mechanisms contemplated by statute to accomplish these directives include VMRC's guidelines and minimum standards. See Va. Code § 28.2-1301.

Third, SB776 addressed in similar terms the role of local wetlands boards for many Tidewater Virginia localities that act as the initial decision-maker for shoreline management projects, subject to appeal to the VMRC. When implementing local tidal wetland protection ordinances, these local boards now must account for sea level rise and coastal hazards in the same manner as VMRC and otherwise follow VMRC's guidelines and standards in this regard when reviewing permit applications for such projects. Va. Code §§ 28.2-1303, -1307 & -1308. Now that the Guidelines have been revised and issued, the living shoreline mandate also pertains to local wetlands board review of shoreline protection projects. Therefore, local wetlands boards will be compelled to determine if "best available science" demonstrates that a living shoreline approach is not suitable and, if not, require shoreline elements to be implemented to the maximum extent possible.

2. Guidelines Revisions.

- a. Updated Tidal Wetland Science and Jurisdictional Clarification. The revised Guidelines first set out a modified framework for distinguishing between nonvegetated tidal wetlands and vegetated tidal wetlands and their respective functionalities, clarifying VMRC's jurisdictional authority over each, and describing how alterations to each affect their functionality and warrant mitigation, and potential mitigation options for each set of impacts. Guidelines at 4-6.
- b. Accounting for Sea Level Rise and Climate Change. Nodding to SB776's requirement to incorporate sea level rise and climate change into tidal wetlands protection standards, the revised Guidelines now expressly incorporate sea level rise and climate change considerations into the requirements for any shoreline alteration. Any shoreline alteration project must now:
 - o be designed and constructed to mitigate coastal hazards including storm-level hydrological energy that may reasonably be expected over the useful life of the project, and
 - o be functionally resilient and structurally designed to endure the impacts of sea level rise using the 2017 National Oceanic and Atmospheric Administration ("NOAA") Intermediate-High scenario projection curve or, in the future, any updated projection based on the best available science and selected through the Coastal Master Plan process.

Guidelines at 9. Therefore, such projects must now *mitigate* the effects of coastal hazards generally, not just resist storm-level hydrological energy, as previously had been required. "Useful life" is now defined as "the average amount of time in years that the project is estimated to function when installed properly and routine maintenance is practiced." Id.

Furthermore, as noted above, shoreline alteration projects must now be designed to withstand projected sea level rise based on the 2017 NOAA Intermediate-High scenario. That scenario predicts that sea

levels will rise at the Sewell's Point tide gage in Norfolk, Virginia by almost 2.5 feet between 2020 and 2050 and by 6.7 feet between 2020 and 2100. For projects with a long useful life, factoring in sea level rise based on such projections may change the design and costs significantly.

Interestingly, the final revised Guidelines also cross-reference pending amendments to the Virginia Chesapeake Bay Preservation Act (CBPA) regulations addressing coastal resiliency activities and requirements within 100 feet of regulated waters (including tidal waters). (See our March 2021 newsletter for a review of the proposed CBPA regulation amendments; we will cover the final CBPA regulatory amendments in a separate article once they are finalized.) For example, the revised Guidelines prohibit permitting a project when the relevant locality determines the project does not comply with the local CBPA ordinance or CBPA regulations promoting coastal resiliency and adaptation to sea level rise and climate change.

c. Living Shoreline Mandate. Operative language in the revised Guidelines incorporating the statutory mandate for living shoreline approaches to shoreline management is found in several places, including the provisions addressing allowable impacts to tidal wetlands. Reflective of statutory policy balancing protection of tidal wetlands with economic development and riparian property rights, waterfront project-related scenarios with impacts to tidal wetlands may now be permitted only to:

Gain access to navigable waters by:

- Commercial, industrial, and recreational interests for which it has been clearly justified that waterfront facilities are required and the interest is water dependent;
- Owners of land adjacent to waters of navigable depth or waters which can be made navigable with only minimal adverse impact on the environment.

Protect property from significant damage or loss due to erosion or other natural causes, *provided that only living shoreline approaches are used unless the best available science shows that such approaches are not suitable.*

Guidelines at 7-8 (emphasis added to show new living shoreline mandate text). Even if a project falls into one of these permissible scenarios, there are other conditions and design standards that must be met before a permit can be issued, including those for the avoidance and minimization of adverse impacts on neighboring properties, water quality, and habitat. The revised Guidelines still assert these conditions and prohibitions reflect a recognition of riparian rights and reserve the shoreline for those uses or activities that require water access. *Id.* at 8. However, as discussed below, from a tidal waterfront owner's perspective, the latest revisions to the Guidelines further restrict, if not eliminate in many cases, traditional riparian owner options to protect residential and commercial waterfront uses from erosion and storm surges.

Living shorelines can serve as cost-effective and multi-functional shoreline protection alternatives to hardened improvements to shorelines like bulkheads, revetments, groins, and jetties. Living shorelines also have been demonstrated to help create, supplement, and maintain tidal wetlands, to mitigate water quality impacts from development, and to minimize recurrent flooding impacts. Therefore, they can be a

viable means of controlling erosion, addressing climate change impacts to shorelines, and improving shoreline habitat and water quality. Some owners and operators are finding opportunities for the use of living shorelines where appropriate along the shore to complement hardened structures, achieving a hybrid result.

Despite their potential benefits, significant practical challenges for using living shorelines can arise, because they often entail either creation or expansion of natural shoreline features toward or into the water and/or into the upland to create the necessary conditions for long-term success. To the degree that a living shoreline approach requires expansion into the water, this is often accompanied by a rock or other sill structure with sand fill between it and the shore to create appropriate bedding and slope for plantings. If the living shoreline must also extend farther landward, the existing slope or bench along the shoreline may need to be graded back into the property to reduce the slope. Such regrading and conversion of the upland area to wetland or buffer area may conflict with or impair approved or existing uses of or property rights in upland areas. Success of a living shoreline is usually determined by ongoing monitoring and, as needed, replacement of the new plantings or other ecologically enhanced features to be sure the living shoreline is establishing itself and functioning as designed over time. Layering the living shoreline mandate over the previously existing conditions and prohibitions and the other new obligations mentioned above therefore adds a material new and even different challenge for protection of tidal waterfront properties with many issues to resolve for the property owner.

The fundamental question presented by the mandate is, when would best available science show that a living shoreline approach is not suitable for a shoreline management project? Begged by this question are the more discrete issues of what is "best available science," who gets to decide what it is, and what is meant by "not suitable"? Interestingly, and apparently intentionally, the term "best available science" is not defined in the revised Guidelines, leaving the issue open for each proposed project. In some cases, the determination of the applicable "best available science" may be rather straightforward. Still, each property shoreline presents its own unique set of facts and considerations that may affect which "best available science" is most applicable.

Lack of a definition of "best available science" only makes more important the role of arbiter of what constitutes "best available science" and who will at least assist VMRC and local wetlands boards in determining the applicable "best available science" for a particular project. This was a key question for VMRC and stakeholders that arose during the drafting of the amendments to the Guidelines. The revised Guidelines designate the Virginia Institute of Marine Science ("VIMS") Office of Research and Advisory Services for those roles. *Id.* at 7 & 14. VIMS has published its own guidance and research studies on living shoreline design. [See here](#). As an arm of the College of William and Mary and a well-recognized center of excellence for the study of marine sciences and coastal impacts of climate change in Virginia and even other states, VIMS is a logical, but also narrow, choice. Limiting the role of determining what constitutes "best available science" exclusively to VIMS may preclude a project applicant from presenting information that may have been determined to be "best available science" by other reliable sources — including other Virginia academic institutions or Virginia-licensed professional engineers and wetlands scientists — at least until VIMS has reviewed and blessed it. It remains to be seen how often and to what degree VMRC and local wetlands boards will consult with VIMS in evaluating what is "best available science" presented to them as part of an application relying on

methods other than a living shoreline.

As to what is "not suitable," no hard and fast conditions are provided in SB776 or the revised Guidelines, but the revised Guidelines summarize various factors to be considered by VMRC and local wetlands boards. Such factors include "hydrodynamic setting, local bathymetry, sediment composition at the location of any structures, conditions in the adjoining riparian zone, potential impacts on adjacent properties, and potential impacts on adjacent habitats, such as riparian vegetation, submerged aquatic vegetation (SAV) and oyster reefs," as well as "fetch exposure, bank height and condition, upland structure proximity and vulnerability, offshore water depth and sediment consistency, presence and proximity of submerged aquatic vegetation, potential maximum storm wave conditions, conditions of adjacent shorelines, and sunlight availability." *Id.* at 6 & 9-10. In addition, living shoreline system breakwaters and sills need to "be shown to function under future sea level rise conditions." *Id.* at 10. In this vein, and with perhaps substantial effect on ongoing or potential tidal shoreline land use, the revised Guidelines expressly contemplate the need for tidal wetlands, SAV, and "riparian communities" to be able to migrate uphill to escape inundation from rising sea levels. *Id.* Even with all that said, the revised Guidelines acknowledge that a "definitive guidance cannot be provided in a single document for every shoreline treatment scenario likely to arise in Tidewater Virginia." *Id.* at 6.

Going further, the revised Guidelines also address the potential for use of hardened structures in lieu of living shorelines and make it clear that such structures are to be viewed as the last resort. "Shoreline protection structures can be permitted only if there is active, detrimental shoreline erosion which cannot be otherwise controlled by use of a living shoreline," but even then living shoreline elements must be used in tandem to the maximum extent possible in keeping with the statutory mandate. *Id.* at 10.

Still, the revised Guidelines acknowledge that "[a] structural approach to shoreline stabilization may be necessary in certain limited instances in response to hydrological and geological shoreline factors, and/or to sufficiently address erosion control. Shoreline modification to address upland and landscape issues other than storm water runoff is not permitted." *Id.* Indeed, hardened structures, such as revetments or bulkheads, will be permitted "only when absolutely necessary and where the best available science shows that a living shoreline approach is not suitable." *Id.* Any permitted hardened structure "must be specifically designed for the shoreline segment in question and must be shown to function under future sea level rise conditions." *Id.* at 10. A bulkhead or seawall is not allowed unless VMRC or the local wetlands board finds that this approach "is necessary and that no other alternative approach is suitable." *Id.* at 11. "Rock revetments are the preferred alternative" in such cases. *Id.* at 10-11. Any necessary seawall or bulkhead structure "should ordinarily be placed as far landward as possible as long as the local government determines it is consistent with the [CBPA] and any regulations adopted thereunder required to promote coastal resilience and adaptation to sea level rise and climate change." *Id.* at 11. Uses of groins and channel jetties are also addressed with limitations and special factors for those structures. *Id.* at 11-12. The combination of the revised Guidelines' now very high bar to using hardened structures with the new living shoreline mandate and obligation to incorporate living shoreline elements to the maximum degree possible in any event seems to render future construction of traditional hardened structures extremely difficult to pursue for many properties.

3. Key Concerns for Property Owners and Operators

From an ecological, practical or economic perspective (or a combination of them), not every shoreline is reasonably well suited to or even feasible for a living shoreline management approach, and it takes a very site-specific assessment to determine which is the best overall approach. Perhaps the most obvious concerns arise for properties that rely on vessel deep water access at or right near the shoreline as these properties typically require hardened infrastructure to protect the shoreline and immediate upland areas servicing vessels from storm events and related erosion and damage. These improvements and structures often provide critical and space-efficient, and in many cases the most cost-effective, means to defend against storms and, over time, rising seas. In doing so, however, these structures often cut off or remove wetland areas at the shoreline or prevent their migration in response to changing water levels, reducing shoreline habitat and eliminating some water quality improvement functionality, so they have their drawbacks as well.

Abrupt elevation differences and certain waterfront land uses can also affect the feasibility and utility of living shoreline approaches extending landward from average tide elevation (and any required regrading of the slope as just noted). Where elevation benches or bluffs exist, a living shoreline can be too impractical or too costly to implement due to the degree of regrading necessary and impacts in upland land uses. Even where elevation difference at the shoreline is not significant, the upland immediately above the shoreline typically is integral to (a) an upland vegetated buffer along the shoreline serving valuable ecological and water quality functions of its own; (b) the residential, commercial or industrial use and value of the property; or (c) both purposes in some respects. There may also be land use restrictions, easements, navigation concerns, or other implications for use of living shoreline that would create legal risk or liability for the landowner depending on how the mandate is imposed. Therefore, for many commercial waterfront operators and many residential waterfront owners, loss of the use of hardened structure options may present substantial practical, financial, and even land use compliance concerns that previously had not existed.

The living shoreline mandate as now expressed in the revised Guidelines can be expected to lead to some ironic but unfortunate results. As a project permit applicant, many property owners and operators seeking to protect their waterfront property may find the mandate's burden of proof too complex or expensive to pursue and instead defer appropriate protection measures or simply leave their shorelines unprotected, resulting in even greater shoreline erosion or decline and damage to unprotected upland structures and existing tidal wetland habitat. The owner or operator will likely need to hire consultant engineers or wetlands scientists (and perhaps a lawyer) to perform the requisite evaluation of the "best available science" to determine suitability of a living shoreline approach. The owner or operator will also then need to evaluate the cost effectiveness or affordability of any feasible living shoreline measures in comparison to or in supplement to traditional bulkhead or rip-rap revetment measures, particularly if a living shoreline needs to migrate inland to keep pace with rising sea levels. Of course, embedded in this analysis are the values of the upland property and improvements and their useful lives. Both living shorelines and structural improvements also require maintenance and even replacement over time, though in different respects given their designs and useful lives. For many property owners, there is concern about the costs of ongoing living shoreline maintenance and periodic replacement.

Another important issue that is not clearly addressed in the Guidelines is how the repair or replacement of existing hardened structures will be handled by VMRC and local wetlands boards. No express grandfathering of such cases from the living shoreline mandate exists in SB776 or the revised Guidelines. Nor do the revised Guidelines address whether or to what degree the living shoreline mandate will be triggered when such work would otherwise essentially maintain the status quo but a permit may still be needed due to access or impacts to tidal wetlands associated with such work.

Finally, depending on the degree to which a living shoreline mandate is imposed, a regulatory takings case or inverse condemnation may arise by application of the revised Guidelines. This would seem especially so where, as a condition for issuance the permit, VMRC or the local wetlands board requires landward extension or migration of tidal wetlands or living shoreline elements into the riparian buffer area or upland space that are inherent to the property's authorized use and value. Consider such an obligation imposed on a residential property with a relatively narrow yard between the house and the waterline or an industrial property with a loading yard or storage structures near the waterfront. The loss of buffer and/or useable space due to a reservation of area for migrating wetlands or living shoreline elements may be substantial enough to constitute a taking of property without just compensation. Of course, such cases are very fact-specific and will depend in part on the degree to which the property interest is burdened for the public benefit (e.g., water quality, habitat, etc.) derived from the living shoreline mandate as applied to that property. If VMRC and the local wetlands boards can strike a reasonable balance in the application of the revised Guidelines to avoid undue burdens on private property and loss of property value in this regard, then such takings can be avoided.

4. Conclusion.

Most stakeholders in the process for developing the revised Guidelines agree that accounting for projected sea level rise and the use of living shorelines warrant consideration and appropriate implementation for shoreline management projects. As is normally the case, the thorniest issues arise as to how best to implement such objectives. For many owners and operators of tidal waterfront properties, though, the revised Guidelines will present new difficulties and often increased costs for shoreline protection projects. VMRC and the local wetlands boards will be tested in how they apply the revised Guidelines to actual applications for projects, and VIMS will be tested as arbiter of what is "best available science" for such projects. These "real world" cases will tell us the most about whether the right balance is being struck and how well these different objectives can be aligned and sustained over time.

SB776, 2021 Va. Acts. c. 809, *codified at* Va. Code Ann. §§ 28.2-104.1.D, 28.2-1301, 28.2-1302 & 28.2-1308

Virginia Marine Resources Commission, *Tidal Wetlands Guidelines* (May 2021 Update), *available here*
George M. McLeod et al., Commonwealth Center for Recurrent Flooding Resiliency, "Future Sea Level and Recurrent Flooding Risk for Coastal Virginia" (February 2020), *available here*

Related People

- Henry R. "Speaker" Pollard, V ? 804.420.6537 ? hpollard@williamsmullen.com

Related Services

- Environment & Natural Resources
- Coastal Flooding & Resiliency
- Construction