



Living Shoreline Stabilization Statewide Activity Approval (SAA) Application Information and Conditions

Authorized Activity

This Statewide Activity Approval (SAA) may be used to construct living shoreline stabilization projects that preserve, enhance and/or restore valuable ecological functions, not to exceed 500 linear feet along the shoreline or bank, in tidal and non-tidal subaqueous lands jurisdiction under 7 Del. C., Chapter 72, The Subaqueous Lands Act, within the State of Delaware.

The stabilization project must maintain or restore a connection between the land and water interface. Projects must have a substantial biological “living” design material component (e.g. wetland vegetation) and/or demonstrate beneficial ecological functions, such as habitat value, improving water quality or carbon sequestration. Shoreline stabilization projects that qualify for this SAA are described as Living Shorelines.

A Living Shoreline represents a variety of techniques that provide shoreline stabilization/resilience through the use of predominantly natural materials, systems, habitats and/or processes exclusively or in combination with a structural (hybrid) component to preserve, enhance and/or restore ecological functions and connections between upland and aquatic areas.

The two classifications of nature-based stabilization solutions that are issued under this SAA are described below.

- **Conventional Living Shoreline** consists of techniques composed entirely of nature-based materials constructed in lower energy systems (e.g. planted marsh with grading or minimal clean fill necessary to support vegetation, natural coir fiber log toe protection, and oyster shell bags toe protection).
- **Hybrid Living Shoreline** consists of techniques used for Conventional Living Shorelines but with an increased use of structural components necessary to withstand and dissipate wave forces in moderate to higher energy systems (e.g. intertidal oyster/mussel reef structures with a planted marsh, marsh toe revetment with an existing marsh and marsh toe sills with a planted marsh).

Standalone shoreline rip-rap, groins, sills, jetties, and/or breakwaters where the primary intent of those structures is wave energy dissipation, beach nourishment and stand-alone intertidal oyster/mussel reef structures are not appropriate for use under this SAA. These techniques may be authorized under this SAA only if used in conjunction with other components that incorporate valuable ecological uplift.

All projects must meet the following applicable criteria identified below, and must comply with all Permit Conditions, in order to use this SAA. Projects that cannot comply with the Criteria or Permit Conditions must acquire the appropriate authorization required through an individual Subaqueous Lands Permit.

Effective Date: November 1, 2020

Expiration Date: October 31, 2025

Authorizing Authority

This SAA has been adopted pursuant to the provisions of 7 Del. C., 7203, and the Delaware Department of Natural Resource and Environmental Control's Regulations Governing the Use of Subaqueous Lands § 2.5 "Statewide Activity Approvals", as administered by the Delaware Department of Natural Resources and Environmental Control, Division of Water Resources, Wetlands and Subaqueous Lands Section (WSLS).

The recipient of the approved project specific SAA, hereto referred to as the permittee, is authorized to perform the herein referenced work in accordance with the applicable terms and conditions specified below.

Process for Obtaining an Authorization Under this SAA

1. Prior to construction, a complete application shall be submitted to this office as detailed below.
 - Basic Application Form with proper applicant
 - Appropriate Appendices (e.g. Appendix H – Fill, Appendix J – Vegetation, Appendix I – Rip Rap)
 - Description of how the proposed shoreline stabilization project demonstrates preservation, enhancement and/or restoration of ecological functions
 - Copy of property Deed
 - Copy of property Survey
 - Plan view indicating mean high water (MHW) and mean low water (MLW)
 - Section view indicating MHW and MLW
 - Vicinity aerial map and driving directions to the site
 - Underwater landowner signature (as appropriate)
 - Check for the appropriate application fee made payable to the State of Delaware
 - Three copies of the complete application mailed to DNREC, Division of Water Resources, Wetlands and Subaqueous Lands Section (WSLS), 89 Kings Highway, Dover, Delaware 19901 or apply online using the following link:
<https://epermitting.dnrec.delaware.gov/signin>
2. If not deemed appropriate, the applicant will be contacted regarding any project modifications that could allow the use of this SAA. Projects that cannot abide by the requirements of the SAA will require an individual Subaqueous Lands Permit and must go through the standard permitting procedure.

3. If approved, the Wetlands and Subaqueous Lands Section will e-mail, fax, or mail the approved project specific SAA authorization, the Department approved project plans and a copy of the Living Shoreline Stabilization SAA Application Information and Conditions to the permittee. Construction shall not begin until the SAA has been received by the Permittee.
4. Construction must be completed in accordance with the Department approved project plans within one (1) year of issuance.

Learn more on State of Delaware permitting services by using the following link:

<https://dnrec.alpha.delaware.gov/water/wetlands-subaqueous/>

Coordinating Agencies

1. Wetlands and Subaqueous Lands Section (WSLS) Coordination

The SAA allows for an abbreviated process with no public notice period for individual projects. As such, the Wetlands and Subaqueous Lands Section shall coordinate internally with agencies during the application processing for comment.

- For all projects, the WSLS shall coordinate with the DNREC, Division of Fish and Wildlife, Species Conservation and Research Program (SCRP) to ensure that the proposed activities will not adversely impact any threatened or endangered plant or animal species and to determine how best to avoid and/or minimize adverse impacts to fish, shellfish and their habitats.
- If any proposed material involves shellfish, whether dead or alive, the DNREC, Division of Watershed Stewardship, Watershed Assessment Shellfish Program and the DNREC, Division of Fish and Wildlife, Fisheries Section shall also be contacted for comment.

2. Applicant Coordination

Under this SAA, the applicant is not required to coordinate directly with the above noted state agencies. However, pre-application coordination may be beneficial to determine qualification for the SAA and for the applicant's permit preparation. When pre-application coordination is desired, the following contact and resource information is provided below:

- The applicant may contact the WSLS or schedule attendance at a Joint Permit Process meeting at (302) 739-9943 to determine eligibility for the SAA.
- The applicant may visit the SCRCP website <https://dnrec.alpha.delaware.gov/fish-wildlife/conservation/reviews/> to view information on obtaining an environmental review in advance of submitting an application.

- If any proposed material involves shellfish, whether dead or alive (e.g. shell, spat, etc.), the applicant may contact the DNREC, Division of Watershed Stewardship, Watershed Assessment Shellfish Program at (302) 739-9939 and the DNREC, Division of Fish and Wildlife, Species Conservation and Research Program at (302) 735-3600 to discuss the project location and specific techniques in which the shellfish/material will be used.

Exclusions

The Department retains discretionary authority to require submission of an individual Subaqueous Lands Permit application for proposed work when it is determined that such a review would be in the public interest (e.g., potential for significant impact on environmental resources, effect on navigation, effect on safety, etc.).

Except as otherwise specified herein, this SAA shall not be used to authorize work in the following circumstances:

- a. where a project-specific State Wetlands Permit is required pursuant to 7 Del. C., Chapter 66 for activities in State-regulated tidal wetlands;
- b. where a project-specific 401 Water Quality Certification (from the WSLs) or a project-specific Coastal Zone Consistency Determination (from DNREC's Coastal Management Program) is required as a result of federal agency involvement in the project, federal funding of the project, or the need to obtain certain federal permits for the project;
- c. where the activity is located at a property which is identified by the Department as having contaminated sediments and has a recorded Contaminated Materials Management Plan (CMMP);
- d. where the project will adversely affect any State or federally listed threatened or endangered species as determined by the Department's Wildlife Species Conservation and Research Program and the U.S. Fish and Wildlife Service;
- e. where the activity is located in a component of the National Wild and Scenic River system (e.g. The White Clay Creek Watershed), unless specific coordination with, and approval from, the National Park Service has been obtained;
- f. where minimal demonstrable shoreline or bank erosion is evident, as determined by the Department.
- g. where fill or structures are proposed to be installed channelward of the Mean Low Water Line.

SAA Special Conditions

Conventional Living Shoreline

1. Fiber logs shall be made of coconut fiber, hemp, or other natural fiber approved by the Department.
2. Timber logs shall be rot-free, consisting of dense and durable (e.g. hardwood) species.
3. All fill material associated with the proposed project and included in the Department approved project plans shall be clean and free from oils, grease, asphalt and other contaminants.
4. Appropriate native vegetation species shall be selected according to site characteristics such as soil properties, anticipated post-construction bank slope, salinity, amount of available sunlight, and expected duration of inundation during high tides and/or high flow events.
5. Wave-attenuating natural materials and other structural elements shall be appropriately anchored or secured to the bottom substrate. The anchoring method shall be constructed in accordance with the Department approved project plans.
6. All loose shell material shall be contained within mesh netting or other similar material in a manner that maintains access to surface area for recruitment. Shell bags shall be of similar dimensions and predominantly filled with oyster shell (clam or conch is not permitted).
7. All shell bag applications will require shell bags to be tightly packed in particular patterns/configurations. No loose or random piling of shell bags is permitted.
8. The width of a stand-alone shell bag configuration (e.g. sill) shall not be less than the height.
9. All shell material shall be processed to prevent the transmission of disease, hitchhikers, etc. The process shall include ageing the shell on land and away from tidal influence for a period of one year and thoroughly washing the shell prior to site placement.
10. If intending to use informational signage, the location of such signage shall be clearly marked on the Department approved project plans.
11. Except to acclimate vegetation to the salinity of the site, all construction materials shall not be stockpiled in subaqueous lands or wetlands.

Hybrid Living Shoreline

Dependent upon the scope of the project, the above relevant Conventional Living Shoreline Special Conditions shall be applicable to Hybrid Living Shorelines.

1. Intertidal oyster/mussel reef structures shall not be seeded with oysters or their spat. Ribbed mussels (*Geukensia demissa*), a non-commercial/non-recreational species, may be utilized for seeding these structures. The applicant shall contact the DNREC, Division of Fish and Wildlife, Fisheries Section at (302) 735-2960 and acquire any necessary permits if sourcing from out of State and shall provide documentation to the WSLs for approval.

2. Projects that construct intertidal oyster/mussel reef structures shall submit to the Department a monitoring report annually for a three (3) year period after construction completion. The applicant shall propose a monitoring plan and upon the discretion of the Department, requirements may be set for the Permittee to monitor metrics which support the proposed preservation, enhancement and/or restoration of ecological functions.
3. Signage shall be required if the average tide of the waterbody (mean tide) is greater than the elevation of the intertidal oyster/mussel reef structure and/or other wave-attenuating structure. Reflective signage shall be installed on elevated pilings on the channelward ends of the reef/wave-attenuating structure to address navigational safety and shellfish consumption concerns (if appropriate). The language on the sign shall state the following: Underwater Reef/Structure and/or Prohibited Shellfish Harvest Area (if appropriate).
4. Filter cloth shall be installed behind or beneath the rip-rap structure (either in a revetment or a sill) to contain sediments, prevent erosion from occurring behind the structure and prevent rock from settling.
5. The height of the crest elevation of the marsh toe revetment, marsh toe sill, or other wave-attenuating component of the project shall not be in exceedance of 1.5 foot above the local mean high water elevation.
6. The slope of the landward and channelward sides of a stone marsh toe sill shall not be steeper than 1.5 foot horizontal to 1 foot vertical.
7. Marsh toe sills and revetments shall be designed so that they follow the natural contour of the shoreline or the pre-existing (prior to shoreline erosion) contour.
8. Tidal gaps or openings shall be incorporated in the sill structure at regular intervals. Tidal gaps shall be 5 to 7 feet wide for every 50 feet of continuous sill. Gap width is always measured from the bottom of the sill structure. The invert elevation of each tidal gap shall be positioned no higher than mean low water whether that be the substrate or the rock lining, if present.
 - a. If the average hydrodynamic site conditions do not favor the placement of tidal gap intervals every 50 feet, tidal gap intervals may be shifted to avoid vulnerable areas as agreed to by the contractors/consultants, WSLS, and SCRP.
9. Rock sills shall be constructed prior to placement of the sandy fill material contained by said structure. Minor placement of fill may be permitted prior to construction of the sill based on the construction sequence.
10. Only fill material appropriate for the habitat being affected and similar to native soil composition (percentage sand, silt, clay) occurring at or near the site should be used when placing fill landward the structure.
11. For marsh toe sills, fill and plantings landward of the rock sill shall be comprised of a wetland vegetative component that is at least twice the square foot area of the footprint of the rock sill (e.g. To assess appropriately, multiply the linear foot of the sill by the sill base width to measure against the vegetative component square foot area).
12. No rock or structural material shall be placed in vegetated wetlands.

13. There shall be no excavation channelward of the permitted alignment either before, during, or after the installation of a marsh toe revetment or marsh toe sill.

SAA General Conditions

1. This Statewide Activity Approval shall be valid for a one year construction window. The Permittee may file a one-time construction expiration date extension request of up to one (1) year if necessary, to complete the authorized work. Such requests must be received by the Department at least thirty (30) days prior to the construction expiration date.
2. The work authorized herein shall be completed in accordance with the terms and conditions of the applicable Department of the Army Authorization.
3. This SAA is granted for the purpose of shoreline stabilization projects that preserve, enhance and/or restore valuable ecological functions as stated herein. Any other use without prior approval shall constitute reason for this SAA being revoked.
4. Upon construction completion, maintenance activities for reinforcement plantings and structural repairs utilizing the authorized materials and techniques is permitted for three (3) years. The applicant shall notify the Department prior to undertaking any activity within subaqueous lands including minor repairs as authorized by this SAA. A determination of the need for a separate approval will be made by this office pursuant to the applicant submitting written notification and revised plans indicating project changes. Failure to contact the Department prior to executing adaptive management strategies to the project shall constitute reason for this SAA being revoked.
5. Upon the discretion of the Department, a monitoring plan may be required to be submitted by the applicant and requirements may be set for the permittee to monitor the performance and proposed benefits to habitat or biota of the shoreline. If required, such monitoring requirements will be added as a special condition upon issuance of the approved project specific SAA authorization.
6. In the event of a catastrophic incident that results in a life-threatening emergency in which action is required for public safety, the Department may waive the provisions of the Regulations Governing the Use of Subaqueous Lands to conduct emergency repairs to the structures authorized herein. The applicant shall contact the Department prior to undertaking any activity within subaqueous lands in order to determine eligibility to the Emergency Waiver process.
7. No activity shall be approved on private subaqueous lands adjacent to the applicant's property without written permission from the underwater landowner.
8. During construction activities, temporary erosion and sediment control measures shall be implemented in accordance with the specifications and criteria in the current Delaware Erosion and Sediment Control Handbook, so as to minimize entry and dispersal of sediment and other contaminants in surface waters.
9. All work shall be planned for minimal impacts during construction activities. In the event that temporary sediment and erosion controls are damaged or destroyed during construction, such controls shall be repaired and/or replaced immediately.

10. There shall be no movement of equipment within subaqueous lands not specifically authorized by this SAA. Any areas disturbed as a direct or indirect result of the activities authorized by this SAA shall be returned to pre-construction conditions and elevations, and appropriately stabilized.
11. The stumps of any trees along the shoreline or bank shall not be removed unless indicated on the Department approved project plans. If proposed as part of the scope of the project, the stumps may be re-purposed for use in the construction of the project.
12. Soil stabilization matting, if used, shall be free of any plastic or other non-degradable materials and shall be comprised of natural degradable materials such as coir or jute.
13. The permittee and contractor shall at all times comply with all applicable laws and regulations of the Department of Natural Resources and Environmental Control.
14. The activities authorized herein shall be undertaken in accordance with the approved project specific SAA authorization, the Department approved project plans, and with the information provided in the permit application.
15. A copy of approved project specific SAA authorization and the Department approved project plans shall be available on-site during all phases of construction activity.
16. The conditions contained herein shall be incorporated into any and all construction contracts associated with the construction authorized herein. The permittee and contractor are responsible to ensure that the workers executing the activities authorized by this SAA have full knowledge of, and abide by, the terms and conditions of this SAA.
17. The permittee shall protect and hold the State of Delaware harmless from any loss, cost or damage resulting from the activities authorized herein.
18. The issuance of this SAA does not constitute approval for any activities that may be required by any other local, state, or federal government agency.
19. The issuance of this SAA does not imply approval of any other part, phase, or portion of any overall project the permittee may be contemplating.
20. Representatives of the Department of Natural Resources and Environmental Control shall be allowed to access the property to inspect all work during any phase of the construction and may conduct pre- and post-construction inspections, collect any samples or conduct any tests that are deemed necessary.
21. The activities authorized herein shall be conducted so as not to violate the State of Delaware's Surface Water Quality Standards in effect at the date of this Permit authorization.
22. All construction materials, waste or debris associated with this activity shall be properly disposed of and contained at all times to prevent its entry into waters or wetlands.
23. The permittee and contractor shall employ measures during construction to prevent spills of fuels, lubricants or other hazardous substances. In the event of a spill, the permittee and contractor shall make every effort to stop the leak and contain the spill, and shall immediately contact the Hazardous Spill Response Team (HAZMAT) at 1-800-662-8802 and this office at (302) 739-9943. The permittee and contractor are

- responsible to comply with all directives to contain and clean up the spilled material(s) as stipulated by the HAZMAT team, and to restore the site as may be required by this office.
24. The permittee shall notify the Wetlands and Subaqueous Lands Section at (302) 739-9943 prior to the commencement of the work authorized by this SAA.
 25. The permittee shall maintain all authorized structures and activities in a good and safe condition.
 26. This Approval does not guarantee the structural stability of the project components.
 27. Any actions, operations or installations which are found by the Department to be contrary to the public interest may constitute reason for the discontinuance and/or removal of said action, operation or installation. Removal and restoration shall be at the expense of the permittee and/or upland property owner within thirty (30) days of receipt of written notice of revocation and demand for removal.
 28. This SAA is personal but may be transferred provided the permittee provides prior notice to the Department of the intent to transfer and the new property owner provides appropriate documentation to substantiate ownership of the adjacent upland property and/or the structures authorized herein. Failure to transfer this SAA to a new owner may result in the revocation of the SAA and the removal of all structures authorized by this SAA at the expense of the permittee.
 29. Failure to comply with any of the terms or conditions of this SAA may result in enforcement action, which could include the revocation of this SAA and subsequent restoration of the site to preconstruction conditions.

Definitions

Department = Department of Natural Resources and Environmental Control

Intertidal Oyster/Mussel Reef = a structure constructed in the intertidal zone that can be colonized by a living sessile community and whose dual function is providing aquatic habitat and functions as well as wave attenuation. (e.g. oyster castles®, reef balls®)

Intertidal Zone = The area between the mean high tide and mean low tide.

Living Shoreline = Represents a variety of techniques that provide shoreline stabilization/resilience through the use of predominantly natural materials, systems, habitats and/or processes exclusively or in combination with a structural (hybrid) component to preserve, enhance and/or restore ecological functions and connections between upland and aquatic areas.

Marsh Toe Revetment = Consists of a low-profile line of rock constructed directly in front of an existing eroding marsh edge.

Marsh Toe Sill = Consists of a low-profile line of free-standing rock placed offshore of an eroding shoreline. Typically, with sandy fill deposited between the sill and the eroding bank upon which marsh grasses are planted to create a protective marsh fringe.

Mean High Tide = (A tidal datum) means the point on a bank, tide flat, beach or shore, up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation (non-aquatic), physical markings or characteristics, known vegetation lines, and may be further identified by tidal

gauge data, or any other suitable means delineating the mean height reached by a rising tide.

Mean Low Tide = (A tidal datum) means the average lowest point on a bank, tide flat, beach or shore, found during normal tide conditions. This may be determined by physical or biological characteristics, interpolation from mean high water based on knowledge of tidal range for an area or tide gauge information, if corrected to account for local conditions.

Mean Tide or Mid Tide = The arithmetic mean of mean high water and mean low water.

Native Vegetation = Vegetation listed in the current “Delaware Native Plants for Landscaping and Restoration” or native plants or a native plant seed mix, approvable by this office.

Public Interest = means demonstrable environmental, social, and economic benefits which would accrue to the public at large as a result of a proposed action, and which would exceed all demonstrable environmental, social, and economic costs of the proposed action. In determining the public interest in a request for use, sale, lease, or transfer of interest in subaqueous lands, the Department shall consider the ultimate project and purpose to be served by said use, sale, permit, lease, or transfer of lands or materials.

Structural Components or Wave-Attenuating Materials = A combination of specific materials and methods of deployment for the purpose of dampening (attenuating) wave energy. When possible, the structural or wave-attenuating material should have a dual purpose of ecological uplift.

Resources

Cited below are resources and tools to aid in the assessment, implementation and monitoring of living shorelines. This list is not all-encompassing but is provided as a resource to practitioners and is specific to Delaware. The Department does not require nor guarantee the use of these resources but does recommend thoroughly researching the subject matter before undertaking a living shoreline project.

- Delaware Living Shorelines Committee (July 17, 2020). Living Shorelines. Retrieved July 21, 2020, from <https://www.delawarelivingshorelines.org/>
- National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. *Decontamination of Shells used for Habitat Restoration*. Retrieved August 11, 2020, from http://www.oyster-restoration.org/wp-content/uploads/2012/06/decontamination_shells-NOAA.pdf
- Delaware Living Shorelines Committee. *Site Evaluation for Living Shoreline Projects in Delaware*. A report prepared by the Delaware Living Shorelines Committee Design and Engineering Sub-committee. April 9, 2020.
- Delaware Living Shoreline Committee. *Developing monitoring plans for living shoreline projects in Delaware: A goal-based framework*. A report prepared by the Delaware Living Shorelines Committee Standards of Practice Subcommittee. April, 2018.