Virginia Conservation Assistance Program (VCAP) Specfications

Section 3.14 Living Shorelines (LS)

Living Shorelines is a shoreline management practice that provides erosion control and water quality benefits; protects, restores or enhances natural shoreline habitat; and maintains coastal processes through the strategic placement of plants, stone, sand fill and other structural and organic materials (Va Code Section 28.2-104.1).

Living Shorelines encompasses a range of shoreline stabilization techniques along estuarine coasts, bays, sheltered coastlines and tributaries. A living shoreline incorporates vegetation and/or other soft elements alone or in combination with harder shoreline structures (e.g. oyster reefs or rock sills) for added stability. Living Shorelines maintain continuity of the natural land-water interface and reduce erosion while providing habitat value and enhancing coastal resilience.

Policies Regarding LS

Living Shorelines under this manual shall include marsh management techniques using vegetation. Marsh management refers to the enhancement of existing marshes, planting new marsh at existing grade, or planting new marsh on sand fill. It can also include riparian vegetation enhancement to improve adjacent wetland buffer and transition into upland area. Sills may

be used where applicable when incorporated with vegetation. Breakwaters, Bulkheads and Revetments are not eligible for funding.

A. Criteria

This practice should only be installed in areas with eroding shorelines as determined by a site evaluation.

☐ Applicants must obtain and comply with all applicable local, state and federal permits, coordination with applicable agencies and specific design conditions.

☐ Sills shall always be combined with suitable wetland planting. Sills should only be used in energy environments that warrant the additional protection beyond the marsh vegetation. Low energy environments may not warrant the use of sills or other structures. Sills shall always be constructed using materials acceptable for use in aquatic environments.

☐ Vegetation establishment must include proper slope preparation including bank grading and/or sand fill. Slope of sand fill shall be 10:1 or flatter.

☐ Sills run parallel to the shoreline and shall be limited to a maximum length of 500 feet. Sills shall have at least one 5-foot opening, drop down or overlap every 100 feet. Deviation from this drop down requirement shall be allowable through coordination with the local Wetland Boards, Virginia Marine Resource Commission and National Marine Fisheries Service.

☐ Sill height shall not exceed 6 inches above the normal high water elevation or the height of the adjacent wetland

substrate, whichever is greater. The side slope shall be

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no flatter than 2:1 (H:V) and the bottom width shall be no wider than 15 feet.

☐ For water bodies narrower than 150 feet, Sills shall not encroach more than one sixth (1/6) the width of the water body. All other shorelines, the landward edge shall be positioned no more than 30 feet water-ward of the existing mean high water line. The Sill shall not be within a navigation channel marked or maintained by a state or federal agency. The Sill shall not interfere with leases or franchises for shellfish culture.

☐ Perennial native species that are adapted to the site conditions must be used. Therefore, selected species must have the capacity to achieve adequate density and vigor within an appropriate time frame to stabilize the site sufficiently to permit suited uses with ordinary management activities. Invasive or noxious species are prohibited. Plant species must be considered native “Flora of Virginia”.

☐ This practice should be initiated as closely as possible to the optimum time for vegetation establishment. Within riparian areas, temporary conservation cover must be established within 14 calendar days if permanent vegetation cannot be established.

☐ Design Criteria from a locality’s Shoreline Management Plan and/or the Living Shoreline Design Guidelines for Shore Protection in Virginia’s Estuarine Environments shall be referenced.

B. Plans and Specifications

a. A design plan for the site must be submitted by the landowner with a professional seal; or a waiver of liability may be accepted on a case-by-case basis (see Appendix D, VCAP Form-5). The installed practice must be in accordance with the approved design unless changes were pre-approved by the local SWCD. Information required in the plan includes:

i. Site Evaluation Checklist

ii. Square footage of the area being planted and linear feet of shoreline being protected.

iii. Slope of the marsh fringe and upland bank.

iv. The mean high water (MHW) and low water (MLW) elevations must be clearly labeled with a measurement of the mean tide range. The tidal wetland-riparian transition elevation, and the upper limits of tidal wetland to be clearly labeled to include the high marsh zone above MHW.

v. Plan to control and/or eliminate unwanted existing vegetation.

vi. Landscape planting plan including: species, rate of seeding or planting, minimum quality of planting stock, time of year and method of establishment.

vii. Post-construction inspection plan including frequency of inspections, responsible parties, and maintenance actions until planted vegetation is well-established.

b. Certification by a Licensed Professional may be required by the District to verify practice installation.

c.It is the program participant's responsibility to ensure that any

contractors meet all local codes and responsibilities.

C. Operation and Maintenance

a. Maintenance of the planted area will be conducted annually by the landowner, or a designated sub-contracted agent of the landowner.

b. Maintenance will include:

i. Annual survey of planted area to evaluate for invasive species and plant survival/success. New vegetation must maintain a cover of 75 % or more.

ii. If invasive species are present (according to: www.dcr.virginia.gov/natural_heritage/documents/invlist.pdf), remove to reduceinvasivecovergroundcovertolessthan5%usingtechniques appropriate for wetland habitats.

iii. Trash and debris should be removed at least annually. This may include vegetative debris if it is adversely affecting the planted vegetation.

iv. Issues of trespass, leading to damaged vegetation, will be addressed as necessary.

v. Structures such as Sills shall be assessed for stability.

D. Cost Share Rates/Incentives

☐ Living Shorelines will be reimbursed at 75% of total costs with a maximum payment of $20,000.00 per parcel per year.

E. HelpfulTechnicalReferences

☐ Living Shoreline Design Guidelines for Shore Protection in Virginia's Estuarine Environments. VIMS Shoreline Studies Program. 2010. http://www.vims.edu/research/departments/physical/programs/ssp/_docs/living_ shorelines_guidelines.pdf

☐ Virginia Institute of Marine Science, Shoreline Studies Program. http://www.vims.edu/research/departments/physical/programs/ssp/shoreline_management/living_shorelines/index.php

☐ Virginia Institute of Marine Science, Center for Coastal Resources Management Comprehensive Coastal Resource Management Portals for local governments http://ccrm.vims.edu/ccrmp/index.html

☐ Department of Conservation and Recreation. Shoreline Erosion Advisory Service. http://www.dcr.virginia.gov/soil-and-water/seas