The Living Shorelines Stewardship Initiative (LSSI) is a collaborative project that is supported by several public and private entities.

- The overall goal of the LSSI is to improve water quality and enhance habitat for living resources in the Chesapeake Bay through the shoreline management efforts of individual waterfront property owners.
- Key strategies to reaching the goal include: using science to drive appropriate types and locations for “living shorelines” treatments; and facilitating the institutionalization of living shorelines approaches through contractors and shoreline management policy makers.
- The ultimate desired outcome is to have: “Maryland and Virginia shorefront property owners routinely consider and frequently choose living shoreline alternatives as their preferred shoreline management treatment”.

“Living shoreline” treatments can be used to reduce sediment and nutrients by stabilizing shorelines in low and medium wave energy areas and to establish vital habitats that help sustain or enhance a variety of plant communities, beach strand habitat and living resources found at the water’s edge. These naturalized shoreline treatments emphasize the use of techniques such as:

- marsh plantings
- supplementary beach nourishment
- low profile breakwaters and sills
- small artificial island systems; and
- strategically placed structural and organic materials (e.g. biologs, oyster reefs etc.)

The purpose of these treatments is to restore or protect critically important habitat for living resources by facilitating natural coastal processes such as sediment trapping and nutrient reduction; wave attenuation; free movement of sands, sediment and gravel in the littoral zone and detritus cycling.
The Case for Living Shorelines

Most residents and visitors to the Chesapeake Bay are familiar with the expansive and inspiring scenes of the Chesapeake's fringe marshes.

Many of these individuals understand the importance estuarine wetland systems have in maintaining a healthy Bay. At the same time scientists are warning us about the coming widespread loss of these wetlands from the steady onslaught of sea level rise, damage from invasive and nuisance species and the relentless hardening of our shorelines. Recently, attention is being paid to the concept of making more widespread use of "living shorelines" at the land-water interface.

Many shorefront landowners are unaware of these techniques and would prefer a natural shoreline to hardened shorelines such as stone revetments or bulkheads. These private shorefront property owners collectively control the majority of Maryland and Virginia's shoreline and thus, represent a significant opportunity to improve the water quality and habitat of the Chesapeake and Coastal Bays. For this reason, a Living Shorelines Stewardship Initiative has been initiated.

Benefits to Property Owners Include:

- Reduced costs (in many situations) over traditional shoreline stabilization techniques;
- Creating a more habitat friendly shoreline that will help improve local water quality and enhance wildlife; and
- Providing opportunities for enhanced property values as more waterfront home buyers are educated about the amenity features of living shorelines, such as, improved water access and aesthetics.
Components of the LSSI

The LSSI represents a specific approach to achieve a property owner-based contribution toward improving water quality and living resource habitat in the Bay.

The Campbell Foundation funded Living Shorelines Stewardship Initiative represents a 3 to 5 year commitment involving collaborative partnerships between private and public organizations to complete specific activities that will contribute to reaching the goal.

Achieving the outcome of “property owners routinely considering and frequently selecting appropriate living shorelines treatments” involves two primary efforts: 1) technical documentation of living shoreline practices and 2) an educational outreach campaign. The focus of the campaign is to provide scientific and basic technical information about living shorelines installation techniques, associated costs, risks, ecological and other benefits. Key messages and materials will be developed for waterfront property owners. Educational outreach presentations to groups such as realtor and homebuilder associations; watershed organizations; and homeowner associations are also necessary.

Facilitating the institutionalization of living shorelines approaches through contractors and shoreline management policy makers will require specific science and technically driven activities. These activities include:

1. field assessments of living shoreline projects that document physical and biological changes and future implications associated with various treatment types;

2. strategic selection of sites to demonstrate different living shoreline treatment techniques in a variety of geographic locations;

3. development of design guidelines and location criteria to help institutionalize effective treatment practices; and

4. training of professional contractors to expand business opportunities and acquaint them with living shoreline construction techniques.
The LSSI Is Divided Into Seven Distinct Components:

1. *Project Management & Oversight -*
   The Campbell Foundation for the Environment has committed grant support for a project manager and other entities to provide continuity for the duration of the project and overall coordination to ensure that each component of the LSSI results in a cohesive series of end products that achieve results.

   A Technical Committee comprised of representatives from the Chesapeake Bay Foundation, Virginia Institute of Marine Science, University of Maryland, Maryland Department of Natural Resources and 2 private contractors provides oversight and recommendations to guide key efforts of the LSSI.

2. *Strategic Demonstrations of Living Shoreline Treatment Types -*
   To demonstrate living shoreline practices that hold strong promise for successful, widespread application, the LSSI team will identify a select number of demonstration projects. An initial goal of 5 project sites has been identified. The demonstrations will be funded primarily through competitive grant programs.

   Three projects are in the planning stages:

   1) An innovative revetment naturalization project is being initiated by the U.S. Fish and Wildlife Service;

   2) A bulkhead naturalization project on the South River will be implemented by the Chesapeake Bay Foundation; and

   3) A “living breakwater” system and shoreline marsh restoration project, designed by the Chesapeake Bay Foundation for their Holly Beach Farm facility on Whitehall Bay, will be constructed in 2005.

3. *Field Assessments -*
   Field surveys and assessments investigating the physical and biological responses of past and emerging living shoreline treatments are needed to better understanding how variations in treat-
ment type designs, maintenance & other factors affect structural integrity, coastal processes, biological and water quality factors. Both professional and volunteer monitoring assistance are being used to accomplish this goal.

Three separate assessment projects funded by the Chesapeake Bay Trust, the Campbell Foundation and Maryland Department of Natural Resources will be completed by 2005. A variety of living shoreline treatments in 8 different locations have been assessed in Maryland by the University of Maryland Center for Estuarine Science, Horn Point Laboratory and Burke Environmental Associates.

In Virginia, VIMS researchers are being funded by the Campbell Foundation to conduct a similar field assessment of a representative number of living shorelines projects. Their assessment will look primarily at the effectiveness of marsh toe revetments and sill structures in reducing shoreline erosion and their effects on adjacent properties.

4. **DESIGN GUIDELINES AND LOCATION CRITERIA**

The development of general design guidelines and site location criteria is needed to help property owners, regulators, contractors and other professionals understand what treatment types are most appropriate for particular shoreline environments.

A National Fish and Wildlife Foundation grant request submitted by The Chesapeake Bay Foundation to develop a Living Shoreline and Estuarine Restoration Framework for the South River of Maryland has been recently approved. The project will develop, among other deliverables, suggested alternatives and guidelines which support the recommended treatment types. It is hoped that the approach will be transferable to other major tributary systems in the Chesapeake Bay.

VIMS researchers have received NOAA grant funds to develop a comprehensive rationale for the expanded use of living shorelines for tidal shoreline protection in Virginia. The project seeks to define a series of metrics to classify shorelines suitable for “soft shoreline control”. VIMS field assessment work, recently funded by the Campbell Foundation, would be incorporated into a broad array of data needed to develop the VIMS classification framework.
5. Contractor Training

The acceptance, understanding and support of living shorelines techniques are needed within the contractor community to provide on-the-ground results to property owners. Few contractors are routinely involved with living shorelines approaches and more trained providers may be needed to fulfill the potential demand generated by a successful advocacy campaign.

An effort is now underway to develop training workshops that address: a) marketing of the living shoreline concept; b) securing permits and local approvals for projects; c) design elements; and d) “hands-on” training to implement local demonstration projects.

As a first step, VIMS will sponsor a training workshop aimed at contractors and others that highlights the results of field investigations concerning the performance of living shorelines in Virginia. The session will address the value of living shorelines; their effectiveness in shore erosion control; cost effectiveness and permitting issues; and a field trip to select sites.

A number of organizations who are working to advance living shoreline treatments are planning a marine contractor workshop, to be held in Maryland, during the Spring of 2005. Entities expressing interest in the workshop include: Chesapeake Bay Foundation; University of Maryland; Chesapeake Bay Environmental Center; and Maryland Department of Natural Resources.

6. Publication and Outreach Materials

Cooperative partners and funding support is needed for the production of several principal deliverables that would advance the goals associated with the LSSI. These include reports or other publications documenting the results of demonstration projects; informative brochures designed for easy distributions to homeowners, related contractors and service professionals; and website and multi-media presentations for outreach activities.

Some initial outreach materials are planned: VIMS will post the results of their field assessment and other living shorelines related issues to their website and in their newsletter which is circulated to 1600 shoreline managers, legislators, wetland professionals and property owners. The University of Maryland will post their field assessment results to the UMCES website and produce posters for display at the Chesapeake Bay Environmental Center.

A description of the Living Shorelines Stewardship Initiative is available for download from the web at: www.campbellfoundation.com/html/related_projects.html
7. Outreach Presentations -
Institutional support is being sought for "in-kind" services such as hosting and participating in educational and training sessions relating to the LSSI. The intent is to execute a broad scale, face-to-face campaign that shares important and motivating information designed to prompt shoreline owners into taking action by installing appropriate living shoreline treatments. The LSSI manager is available for on-site group presentations.

For more information about the Living Shorelines Stewardship Initiative and how you can participate contact the Campbell Foundation’s LSSI project manager:

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