Living Shoreline Contractor Training Class Materials & 2017 Shoreline Digitizing

Shoreline Studies Program
Virginia Institute of Marine Science
William & Mary

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This project consisted of two separate efforts, shoreline digitizing and holding a living shoreline design training class.

Shoreline Digitizing and Rate of Change

To keep the shoreline evolution data consistent, the existing shoreline database uses the 1937-2009 time frame to determine rates of shoreline change. With the release of the 2017 VGIN aerial photography, an opportunity arose to update the shoreline change data to the latest time period. Last year, the 2017 shoreline was digitized along the Chesapeake Bay shoreline in Accomack, Northampton, Virginia Beach, Norfolk, Hampton, York, Poquoson, Gloucester, Mathews, Middlesex, Lancaster, and Northumberland County. Due to limited funding, only the sandy shorelines directly adjacent to the Bay were digitized. For this project, the 2017 shoreline was digitized along the main stem of James, York, Rappahannock, Piankatank, and Potomac Rivers. No creeks or smaller rivers were digitized. In addition, the rate of change was calculated between 1937 and 2017. These shoreline change rates were added to the Shoreline Evolution Database online viewer (www.vims.edu/research/departments/physical/programs/ssp/gis_maps).

Living Shoreline Contractor Class Materials

Revised Plan for Living Shoreline Design Course

Due to the spread of the Covid-19 virus in 2020, restrictions were placed on gatherings so no onsite training courses could be held. To adjust the training course curriculum for the restrictions, an online curriculum was created with both asynchronous and synchronous components. The course materials are available on the updated Living Shoreline Design Guidance webpage. (www.vims.edu/research/departments/physical/programs/ssp/shoreline_management/living_shorelines/class_info).

General topics that will be covered:

- Design process under unpredictable water levels; site and field parameters; tools;
- What is success for shore protection projects? Monitoring and assessment; what happens long-term
- Collective lessons learned; resilience; when do you design for it? What do you do for the long-term now and/or later?
- Site-specific design considerations and discussion

Asynchronous

The asynchronous component of the class consisted of pre-recorded videos by VIMS personnel and presentations designed to provide participants with background information. The videos and presentations highlighted components of living shoreline design, assessment, and resiliency. In addition, a hands-on design exercise was included in the pre-workshop material for participants to review.

The videos included:

- Planning and Methods for Shoreline Management in Chesapeake Bay – Introduces shoreline management in Chesapeake Bay and discusses the process used to develop site specific management (50:20)
- Shoreline Management and Living Shoreline Resiliency- Discusses the latest research on performance of sills and breakwaters and how to make the system resilient (28:06).
- Concept to Construction – Describes a project from its conception, through the data collection, design process, and construction. Poor sound recording quality (26:51).

Presentations included:

- Determining Site-Specific Parameters for Living Shoreline Design - Description, location and use of tools to do a site evaluation so that an effective living shoreline can be designed.
- General Site Evaluations & Design Guidelines for Non-Structural Practices: Additional site evaluation parameter considerations and non-structural living shoreline options.

Tools updated:

The Google Earth tools for determining mean and great diurnal (spring) ranges were updated using updated VDATUM grids. Also updated was the conversion from NAVD88 to MLW tool. (www.vims.edu/research/departments/physical/programs/ssp/shoreline_management/living_shorelines/class_info/tideranges_and_conversions)

Synchronous

The synchronous component was a 2-hour webinar-style zoom conference. It provided an overview of the topics as well as review of what was learned in asynchronous material. Because the class is aimed at coastal design and construction professionals, the class was limited to no more than 40 people to maximize interaction between attendees and the course instructors. Registration was on a first come, first serve basis, but preference was given to design professionals, followed by coastal managers. The class filled up within several days. A waiting list was established, and when that number reached 25, a decision was made to add a second class. Forty-seven participants attended the first class on 25 March 2021. Thirty-one participants attended the second class on 31 March 2021. These represented 31 private businesses, nine non-governmental organizations, and 13 local-state-federal governmental agencies from Virginia, Maryland, North Carolina, or other coastal state. One participant was from the Caribbean. Most of the participants had 1-10 years of experience working in the coastal environment. Only a few participants had no prior experience.

The webinar was recorded. It is available on the Living Shoreline Design Guidance page. Also available are the presentation created for the class.

- Living Shoreline Design Exercise: Site evaluation information for Robin Grove Park in Colonial Beach and suggested design presented at the 2021 Living Shoreline Design Workshop
- Design Elements of Marsh Sills: Presentation at the 2021 Living Shoreline Design Workshop https://www.vims.edu/research/departments/physical/programs/ssp/_docs/designelements_final_lr2.pdf
- What is Success? Presentation at the 2021 Living Shoreline Design Workshop https://www.vims.edu/research/departments/physical/programs/ssp/_docs/whatissuccess_final_lr.pdf