

# Day 3 Overview - 9:30-4 p m

- Arrival and Check in 9:15am
- Plan for the Day
- Mussels
- Living Shoreline Design Options
- Contractor Panel Discussion
- Best Practices for Permit Drawings
- Lunch
- Materials Demo
- Survey Tools Demo
- Concept Drawing Activity
- Introduce Assignment Drawings/Design/JPA Assignment

## Instructors/Speakers

- Kati Grigsby, CBF
- Noah Tait, VIMS
- Marina Cuselli, VIMS
- Aaron Wendt
- Jim Cahoon, Bay Environmental
- Ryan Walsh, JRA
- Ellen Grimes, CRM
- Vince Bowhers, LRN

## CBLP Staff

- Stacie McGraw
- Perry Verge

# Design Considerations

- What level of protection is needed and how does the design meet that need?
- How have you incorporated planning for future conditions into the design?
- What other approaches were considered?

# Homework Due October 8 @ 5 PM

Finalize Design

Prepare Drawings - Plan View and 1 or more Cross Sections

Complete JPA for Site

Save to PDF and email to [stacie@cblpro.org](mailto:stacie@cblpro.org)

To earn certificate - work on a living shoreline installation project

# Homework: Finalize Design, Prepare Drawings and Complete JPA for Site

- Using what you have learned throughout the workshop, refine the concept drawing begun in class and develop permit drawings for a living shoreline appropriate for the site discussed in class. Submit a pdf of the drawings to [stacie@cblpro.org](mailto:stacie@cblpro.org) by 5pm on Oct. 8.
- Complete a Joint Permit Application for the site design you develop. Submit along with the drawings at 5 pm on Oct. 8
- Answer the following questions pertaining to your design:
  - How will your shoreline adapt to the intermediate high rate of sea level rise?
  - What is the expected life of your project?

#### Part 4 - Project Drawings

**Plan view and cross-sectional view drawings are required for all projects.** Application drawings do not need to be prepared by a professional draftsman, but they must be clear, accurate, and should be to an appropriate scale. If a scale is not used, all dimensions must be clearly depicted in the drawings. If available, a plat of the property should be included, with the existing and proposed structures clearly indicated. *Distances from the proposed structure(s) to fixed points of reference (benchmarks) and to the adjacent property lines must be shown.* A vicinity map (County road map, USGS Topographic map, etc.) must also be provided to show the location of the property. **NOTE:** The sample drawings have been included at the end of this section to provide guidance on the information required for different types of projects. Clear and accurate drawings are essential for project review and compliance determination. Incomplete or unclear drawings may cause delays in the processing of your application.

The following items must be included on **ALL** project drawings: (plan and cross-sectional, as appropriate)

- name of project
- north arrow
- scale
- waterway name
- existing and proposed structures, labeled as such
- dimensions of proposed structures
- mean high water and mean low water lines
- all delineated wetlands and all surface waters on the site, including the Cowardin classification (i.e., emergent, scrub-shrub, or forested) for those surface waters (if applicable)
- limits of proposed impacts to surface waters, such as fill areas, riprap scour protection placement, and dredged areas, and the amount of such impacts in square feet and acres
- ebb/flood direction
- adjacent property lines and owner's name
- distances from proposed structures to fixed points of reference (benchmarks) and adjacent property lines

A Vicinity Map (County road map, USGS Topo, etc.) must also be provided. *NOTE:...Clear and accurate drawings are essential for project review and compliance determination.*

# Filling out the JPA



# What is needed for a complete Joint Permit

## Part 1 – General Information

- Applicant and Agent's information, including project location
- Description of the project, including cost

## Part 2 – Signatures

- Approval letters from adjacent property owners

## Part 3 – Appendix B

- Maximum encroachment channelward of mean high water plus square footage
- Areas that will be impacted
- Type of construction and all materials
- Any proposed vegetative stabilization measures to be used

## Part 4 – Project Drawings

- Vicinity Map (USGS topographic map, road map or similar showing project location)
- Plan View Drawing (overhead, to scale or with dimensions clearly marked)
- Section View Drawing (side-view, to scale or with dimensions clearly marked)

## Part 5 – Chesapeake Bay Preservation Act Information

# JPA Guided Resource: Shoreline Management Handbook

## Center for Coastal Resources Management

Home / ... / Shoreline Management Handbook / Permit Information

### Permit Information

What are the permit types, applications, and required information?

#### Permits Types

There are two categories of permits used to review and authorize activities in Virginia's tidal wetlands, beach and dunes, and/or subaqueous lands. Certain activities that are anticipated to have minor adverse impacts can qualify for one of three general permits issued by the Virginia Marine Resource Commission. The general permits expedite the review process and do not require a public hearing. Activities that do not qualify for a general permit are reviewed as an individual permit. In either case, one permit application is used by all regulatory and advisory agencies.

#### Individual Permits

Each applicable regulatory agency conducts an independent review and issues a permit for their jurisdiction. The table shows which agencies have permit authority for tidal shorelines in Virginia. See [Conduct a Hearing](#) for a description of the permit review and approval process.

#### General Permits

VMRC has several general permits for activities along the shoreline and on submerged lands.

The most relevant of these permits for Wetland Boards are:

| Jurisdiction                          | Administrative Process                        | Issue/Sign     | Comments and Substitutions                                                                                                                                                               |
|---------------------------------------|-----------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tidal Wetlands Act                    | Local: Wetlands Board<br>VMRC Final Board     | VMRC           | Local: Wetlands Board<br>1. Complete a WMA<br>2. Submit a WMA to the Local Board<br>3. Obtain a WMA from the Local Board<br>4. Submit a WMA to the VMRC<br>5. Obtain a WMA from the VMRC |
| Coastal Primary Sand Dune & Beach Act | Local: Wetlands Board<br>VMRC Final Board     | VMRC           | Local: Wetlands Board<br>1. Complete a WMA<br>2. Submit a WMA to the Local Board<br>3. Obtain a WMA from the Local Board<br>4. Submit a WMA to the VMRC<br>5. Obtain a WMA from the VMRC |
| Chesapeake Bay Preservation Act       | Local: Wetlands Board<br>"Dry" Board on Staff | DBD            | Local: Wetlands Board<br>1. Complete a WMA<br>2. Submit a WMA to the Local Board<br>3. Obtain a WMA from the Local Board<br>4. Submit a WMA to the DBD<br>5. Obtain a WMA from the DBD   |
| Subaqueous Lands                      | VMRC                                          | VMRC           | Local: Wetlands Board<br>1. Complete a WMA<br>2. Submit a WMA to the Local Board<br>3. Obtain a WMA from the Local Board<br>4. Submit a WMA to the VMRC<br>5. Obtain a WMA from the VMRC |
| Virginia Water Protection Permit      | DBD                                           | County         | Local: Wetlands Board<br>1. Complete a WMA<br>2. Submit a WMA to the Local Board<br>3. Obtain a WMA from the Local Board<br>4. Submit a WMA to the DBD<br>5. Obtain a WMA from the DBD   |
| Clear Water Act                       | Corps of Engineers                            | DBD and County | Local: Wetlands Board<br>1. Complete a WMA<br>2. Submit a WMA to the Local Board<br>3. Obtain a WMA from the Local Board<br>4. Submit a WMA to the DBD<br>5. Obtain a WMA from the DBD   |

Jurisdiction Table - [click to enlarge](#)

### JPA Required Information

The Tidewater JPA (the most commonly used JPA for tidal shoreline projects) is comprised of five parts. Applications are determined complete by the permitting authority. In order to be complete, the application must at a minimum include the following:

#### Part 1 - General Information

Information listed as required in the Tidal Wetlands Act (Wetlands Zoning Ordinance)

- Applicant
- Proposed Activity
- Plan View Map & Cross Section Views
- Equipment and Access
- Adjacent Owners
- Cost
- Project Purpose
- Public Benefit

#### Mitigation

#### Expected Timeline

#### Suggested Information

#### Additional Information

#### Part 2 - Signatures

#### Part 3 - Appendices

Submit the appendices that are as applicable to your project:

- A - Projects for Access (piers, etc)
- B - Shoreline Stabilization (most commonly used for shoreline erosion control projects)
- C - Crossings
- D - Aquaculture Related Structures

#### Part 4 - Project Drawings

#### Part 5 - Chesapeake Bay Preservation Act Information

All proposed activities related to the Tidewater JPA must comply with the Chesapeake Bay Preservation Area and Designation Management Regulations and requires the submission of a Water Quality Impact Assessment (WQIA).

A WQIA is an application that requests information to identify the impacts of proposed activities on water quality and lands in Resource Protection Areas (RPAs).

## Part 1, 4. Provide a detailed description...example

The applicant proposes to install a 40 linear foot living shoreline with a 40 linear foot return on property at the East Ocean View Community Center. A previous phase of living shoreline at this facility has been highly successful and is publicly accessible. The project includes a total of 60 linear feet of oyster castles stacked 3 blocks high (40 foot along the MLW line and a 20 foot return to tie the project back into the eroding bank) and approximately 315 square feet of sand fill with a total planting area of 915 square feet. 20 feet of 12" coir log will be used along the sand fill for toe protection. The project will impact 540 square feet of tidal wetlands (315 SF sand fill, 225 SF oyster castle). Elevations are currently appropriate for low marsh planting, however, the upper marsh bank is eroding. The sand fill is intended to provide a gently sloping tie in to the bank while also providing additional low and high marsh planting zones. The oyster castles will abate wave energy to protect the plantings while also providing habitat for oyster spat set.

# Part 1, 8. & 10 examples

8. What are the *primary and secondary purposes of and the need for* the project? For example, the primary purpose may be “to protect property from erosion due to boat wakes” and the secondary purpose may be “to provide safer access to a pier.”

Primary purpose is to restore and abate shoreline erosion. Secondary purpose is to create a living shoreline with oyster habitat that is publicly accessible for educational purposes.

10. Describe alternatives considered and the measures that will be taken to avoid and minimize impacts, to the maximum extent practicable, to wetlands, surface waters, submerged lands, and buffer areas associated with any disturbance (clearing, grading, excavating) during and after project construction. *Please be advised that unavoidable losses of tidal wetlands and/or aquatic resources may require compensatory mitigation.*

a riprap revetment would stem the shoreline erosion but would not be the ecologically preferred method.

## Part 3. Appendix B: Projects for Shoreline Stabilization

1. Describe each **revetment, bulkhead, marsh toe, breakwater, groin, jetty, other structure, or living shoreline project** separately in the space below. Include the overall length in linear feet, the amount of impacts in acres, and volume of associated backfill below mean high water and/or ordinary high water in cubic yards, as applicable:

The project includes 60 linear feet of oyster castles stacked three blocks high and 20 linear feet of 12" coir log with 315 square feet (approximately 12 cubic yards) of clean medium fine sand fill. Low marsh to be planted with *Spartina alterniflora* on 18 inch centers up to elevation of MHW, and high marsh to be planted with *Spartina patens* on 18 inch centers from MHW up to upper limits of tidal wetlands at tie in with bank. *Hibiscus moscheutos* quarts will be planted on approximate 5 foot centers within the high marsh zone above MHW. Goose protection fencing to be installed around entire planting area.

## Part 3. Appendix B: Projects for Shoreline Stabilization

2. What is the maximum encroachment channelward of mean high water? 24 feet.  
Channelward of mean low water? 0 feet.  
Channelward of the back edge of the dune or beach? n/a feet.
3. Please calculate the square footage of encroachment over:
- Vegetated wetlands 0 square feet
  - Non-vegetated wetlands 540 square feet
  - Subaqueous bottom 0 square feet
  - Dune and/or beach n/a square feet

Direct impacts caused by the project,  
DO NOT list the creation of wetlands

## Part 3. Appendix B: Projects for Shoreline Stabilization

5. Describe the type of construction and **all** materials to be used, including source of backfill material, if applicable (e.g., vinyl sheet-pile bulkhead, timber stringers and butt piles, 100% sand backfill from upland source; broken concrete core material with Class II quarry stone armor over filter cloth).

**NOTE: Drawings must include construction details, including dimensions, design and all materials, including fittings if used.**

commercially manufactured oyster castle placed on geotechnical fabric

12" diameter premium density coir log

clean medium fine sand with less than 10% fines

# Part 3. Appendix B: Projects for Shoreline Stabilization

6. If using stone, broken concrete, etc. for your structure(s), what is the average weight of the:
- |                              |     |                  |            |       |
|------------------------------|-----|------------------|------------|-------|
| Core (inner layer) material  | n/a | pounds per stone | Class size | _____ |
| Armor (outer layer) material | n/a | pounds per stone | Class size | _____ |
7. For **beach nourishment**, including that associated with breakwaters, groins or other structures, provide the following:
- Volume of material

|    |                                            |
|----|--------------------------------------------|
| 0  | cubic yards channelward of mean low water  |
| 12 | cubic yards landward of mean low water     |
| 6  | cubic yards channelward of mean high water |
| 6  | cubic yards landward of mean high water    |
  - Area to be covered

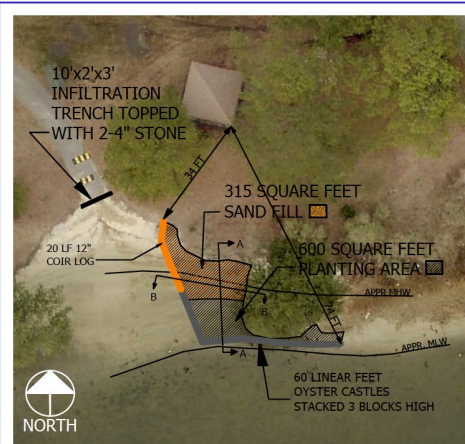
|     |                                            |
|-----|--------------------------------------------|
| 0   | square feet channelward of mean low water  |
| 315 | square feet landward of mean low water     |
| 115 | square feet channelward of mean high water |
| 200 | square feet landward of mean high water    |

# Part 3. Appendix B: Projects for Shoreline Stabilization

- Source of material, composition (e.g. 90% sand, 10% clay): 100% sand
- Method of transportation and placement:  
skid steere to top of bank, then hand graded
- Describe any proposed vegetative stabilization measures to be used, including planting schedule, spacing, monitoring, etc. Additional guidance is available at  
<http://www.vims.edu/about/search/index.php?q=planting+guidelines>:

Low marsh to be planted with *Spartina alterniflora* on 18 inch centers up to elevation of MHW, and high marsh to be planted with *Spartina patens* on 18 inch centers from MHW up to upper limits of tidal wetlands at tie in with bank. *Hibiscus moscheutos* quarts will be planted on approximate 5 foot centers within the high marsh zone above MHW. Goose protection fencing to be installed around entire planting area.

# Part 4. Project Drawings and Descriptions example

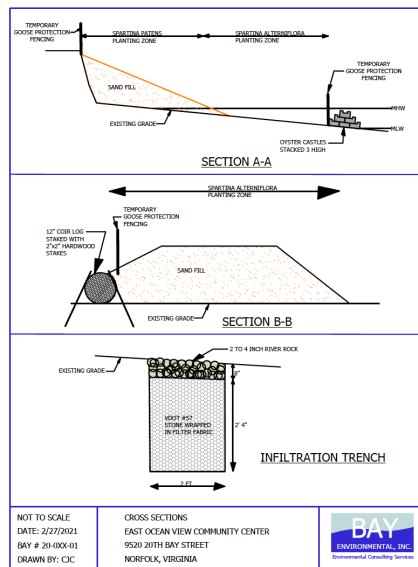


EXISTING ELEVATIONS ARE APPROPRIATE FOR SPARTINA ALTERNIFLORA AND SPARTINA PATENS PLANTING, SAND FILL INTENDED TO LEVEL OUT EXISTING EROSION SCARP, OYSTER CASTLES WILL ABATE WAVE ENERGY TO ESTABLISH PLANTINGS.

INFILTRATION TRENCH IS INTENDED SOLELY TO SLOW VELOCITY OF STORMWATER COMING OFF OF PAVED KAYAK LAUNCH PATH.

SCALE: APPR. 1"=20'  
DATE: 2/27/2021  
BAY # 20-000-01  
DRAWN BY: CIC

LIVING SHORELINE PLAN  
EAST OCEAN VIEW COMMUNITY CENTER  
9520 20TH BAY STREET  
NORFOLK, VIRGINIA



NOT TO SCALE  
DATE: 2/27/2021  
BAY # 20-000-01  
DRAWN BY: CIC

CROSS SECTIONS  
EAST OCEAN VIEW COMMUNITY CENTER  
9520 20TH BAY STREET  
NORFOLK, VIRGINIA



## Wetlands - General Conditions

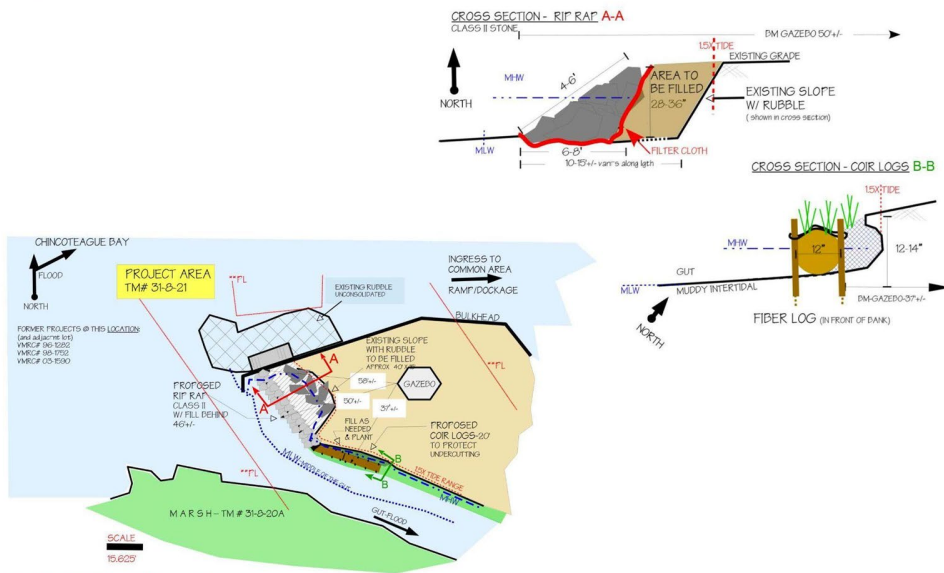
1. There will be a minimum five foot opening in any section of coir log in excess of 100 feet in length.
2. Goose fencing will be installed according to the attached specifications and maintained for two growing seasons unless approved to be removed by Wetlands Board staff.
3. Wetlands grasses will be installed on 12 or 18 -inch centers and fertilized with one ounce of Osmocote 18-6-12 slow release fertilizer or equivalent.
4. Plant mortality will be addressed by replacing plants during the next available growing season.
5. Wetland planting will achieve an 85% coverage within two full growing seasons to be considered successful.
6. Sand fill (for living shoreline projects) will meet the following standard: Using the Unified Soil Classification System, sand will be SM (silty sands), SP or SW with a medium grain size of around 0.25 mm with no more than 20 percent passing through a #100 sieve (0.149mm) and no more than 10 percent passing through a #200 sieve (0.074mm). (Norfolk staff strongly recommends Vulcan White Sand #31152)

# Part 4. Styles vary Legibility & Details



## Living Shoreline JPA Plan & Cross Section Examples

Day 1: Design Options/Small Group Discussion

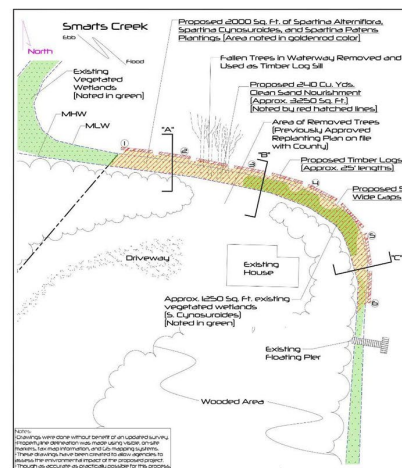


CRM, INC

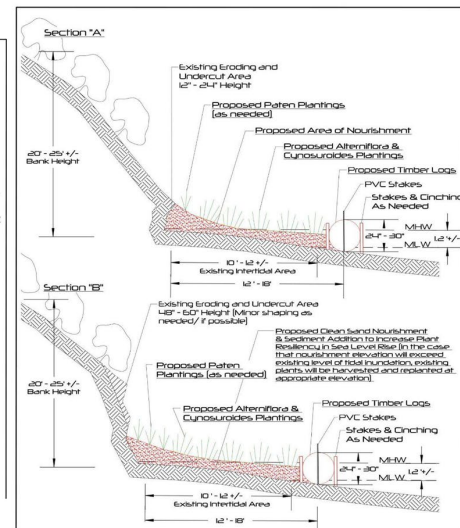


## Living Shoreline JPA Plan & Cross Section Examples

Day 1: Design Options/Small Group Discussion



J. Scott



# Permitting Discussion

