

**WETLANDS AND WATERWAYS PROGRAM
TIDAL WETLAND APPLICATION GUIDELINES**

PROPOSED LIVING SHORELINE PROJECT

Check list outlines the minimum required information for a proposed project; additional information may be required based on the project and/or the applicant's project site. Applicants are encouraged to schedule a pre-application meeting to answer questions, discuss the applicant's site, discuss the proposed project, and determine if any additional information/plan sheets are required due to the uniqueness of the applicant's site.

- Exempt from application processing fee (**No other project types are proposed at applicant's site**)
- Requires application processing fee (other project types proposed in conjunction with living shoreline i.e. living shoreline & revetment, living shoreline & pier, etc)

***Reference the fee guidelines and tables to determine appropriate application review fees.**

GENERAL PLAN REQUIREMENTS

- Plan sheets should be on 8.5" x 11" paper, black and white, and single sided; Plans are to be legible and not cluttered; usable written or visual scale no smaller than 1" = 50' on proposed plan sheets and a usable written or visual scale no smaller than 1" = 100' on existing plan sheets. All plan notes should be placed at the bottom of the page or on a separate page. The plan sheets should be numbered to reference the plan sheet in relation to the total number of plan sheets i.e. Page 1 of 3, Page 2 of 3, etc.
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VICINITY MAP & AERIAL PHOTO PLAN SHEET

- Plan sheet should include the type of projects proposed by applicant i.e. living shoreline.
 - Plan sheet should include the name of the applicant(s) and mailing address including the town/city, county, state, and zip code.
 - Vicinity map and aerial photo should be sized to clearly depict the project site and surround area, but each map should no smaller than 4" by 4" in size.
 - Vicinity map should include a North arrow and be scaled to clearly show project site, general location on the waterway, the immediate surrounding area.
 - Aerial photograph should be no more than 10 years old from date of application.
 - Aerial photograph should, at a minimum, show the proposed project site (clearly marked) with any existing structures and the adjacent property owners' property with any existing structures.
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PROJECT AREA CONDITIONS PLAN SHEET(S)

- Plan sheets should be on 8.5" x 11" paper, black and white, and single sided; Plans are to be legible and not cluttered; usable visual scaled appropriate for area of project vs. 8.5" x 11" sheet. All plan notes should be placed at the bottom of the page or on a separate page. The plan sheets should be numbered to reference the plan sheet in relation to the total number of plan sheets i.e. Page 1 of 3, Page 2 of 3, etc.
- Plan sheet should include the type of projects proposed by applicant i.e. living shoreline.
- Plan sheet should include the name of the applicant(s) and mailing address including the town/city, county, state, and zip code.

PROJECT AREA CONDITIONS PLAN SHEET(S) (CONTINUED)

- Plan sheet should include the Mean High Water Line (MHWL) of project's shoreline and the MHWL of the opposite shoreline reflecting the maximum fetch.
- Plan sheet should include the name of the waterway, North arrow, and direction of ebb/flow tide.
- Plan sheet should include the maximum fetch.
- Plan sheet should include the property lines (labeled) extended channelward.

EXISTING CONDITION PLAN SHEET(S)

- Plan sheets should be on 8.5" x 11" paper, black and white, and single sided; Plans are to be legible and not cluttered; usable written or visual scale no smaller than 1" = 100' on existing plan sheets. All plan notes should be placed at the bottom of the page or on a separate page. The plan sheets should be numbered to reference the plan sheet in relation to the total number of plan sheets i.e. Page 1 of 3, Page 2 of 3, etc.
- Plan sheet should include the type of projects proposed by applicant i.e. living shoreline.
- Plan sheet should include the name of the applicant(s) and mailing address including the town/city, county, state, and zip code.
- Plan view should include the Mean High Water Line (MHWL) and the Mean Low Water Line (MLWL; referenced to 0.0 feet).
- Plan view should include water depths marked as either contours or spot depths that extend channelward a minimum of 100 feet channelward of the Mean High Water Line (MHWL) or 100 feet channelward of the channelward most proposed structure.
- Plan view should include the name of the waterway, North arrow, and direction of ebb/flow tide.
- Plan view should include the property lines (labeled) extended channelward.
- Plan view should include the linear feet of shoreline proposed to be impacted by construction of the living shoreline.
- Plan view should include the applicant's property and directly adjacent riparian properties clearly labeled with their name, site address, town/city, county, state, and zip code.
- Plan view should include all existing structures, including vegetated wetlands and SAV, on the applicant's property and adjacent riparian properties.

PROPOSED CONDITION PLAN SHEET(S)

- Plan sheets should be on 8.5" x 11" paper, black and white, and single sided; Plans are to be legible and not cluttered; usable written or visual scale no smaller than 1" = 50' on proposed plan sheets. All plan notes should be placed at the bottom of the page or on a separate page. The plan sheets should be numbered to reference the plan sheet in relation to the total number of plan sheets i.e. Page 1 of 3, Page 2 of 3, etc.
- Plan sheet should include the type of projects proposed by applicant i.e. living shoreline.
- Plan sheet should include the name of the applicant(s) and mailing address including the town/city, county, state, and zip code.

PROPOSED CONDITION PLAN SHEET(S) (CONTINUED)

- Plan view should include the Mean High Water Line (MHWL) and the Mean Low Water Line (MLWL; referenced to 0.0 feet). *If the MHWL or the MLWL are to be altered during construction the proposed MHWL and MLWL should also be labeled.*
- Plan view should include the name of the waterway, North arrow, and direction of ebb/flow tide.
- Plan view should include the property lines (labeled) extended channelward.
- Plan view should depict the linear feet of shoreline proposed to be impacted by construction and accurately depict the max channelward encroachment along the entire project.
- Plan view should include the applicant's property and any erosion control structures on adjacent riparian properties that may be abutted by the sill or groin structures.
- Plan view should clearly depict the area of low marsh plantings, the area of high marsh plantings, the species of plant in each area, and the channelward extent.
- Plan view should clearly depict the channelward extent of any proposed sand containment structure i.e. low profile sill or groin structures and any window openings associated with each structure.

CROSS-SECTION PLAN SHEET(S)

- Plan sheets should be on 8.5" x 11" paper, black and white, and single sided; Plans are to be legible and not cluttered. All plan notes should be placed at the bottom of the page or on a separate page. The plan sheets should be numbered to reference the plan sheet in relation to the total number of plan sheets i.e. Page 1 of 3, Page 2 of 3, etc.
- Plan sheet should include the type of projects proposed by applicant i.e. living shoreline.
- Plan sheet should include the name of the applicant(s) and mailing address including the town/city, county, state, and zip code.
- Cross-Section views should include the Mean High Water (MHW), the Mean Low Water (MLW; referenced to 0.0 feet), and top of the proposed sill or proposed groin. Example: MLW = 0.0', MHW = + 1.9', + 2.4' Top of sill.
- Proposed Living Shoreline Cross-Section(s) should depict existing bank and slope, proposed slope (including slope ratio) and fill area, existing and proposed Mean High Water Line (MHWL), depiction of proposed sill or groin with channelward extent, proposed low marsh with channelward extent, proposed high marsh with channelward extent, and species of plant proposed to be planted in each area.
- Proposed Sill Opening Cross-Section(s) should include the Mean High Water (MHW), the Mean Low Water (MLW; referenced to 0.0 feet), and top of the proposed sill or proposed groin. Example: MLW = 0.0', MHW = + 1.9', + 2.4' Top of sill.

**WETLANDS AND WATERWAYS PROGRAM
TIDAL WETLAND APPLICATION GUIDELINES**

PROPOSED LIVING SHORELINE PROJECT - SUPPLEMENTAL CHECKLIST

Checklists outline additional information that may be required for the proposed project based on the project and/or the applicant’s project site. Applicants are encouraged to schedule a [pre-application meeting](#) to answer questions, discuss the applicant’s site, discuss the proposed project, and determine if any additional information/plan sheets are required due to the uniqueness of the applicant’s site.

For minimum requirements for all living shoreline applications, please see [Tidal Wetland Application Guidelines for Living Shorelines](#).

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PURPOSE AND NEED

Checklist outlines supplemental information that may be required for a proposed living shoreline. Additional information may be required based on the project and/or the applicant's project site.

ADDITIONAL INFORMATION THAT MAY BE REQUESTED

Provide detailed explanation of avoidance and minimization of impacts to resources such as SAV beds and open water. If filling areas colonized by SAV in the last five years is proposed, provide a detailed justification for why proposed impacts are unavoidable and minimized to the maximum extent practicable to achieve water-dependent project goals.

- Does the proposed project meet COMAR's definition of a "nonstructural shoreline erosion control measure" ([COMAR 26.24.01.02.B.\(35-1\)](#))? Is the living shoreline dominated by tidal wetland vegetation?
 - Does the proposed project meet the goals of the [Living Shoreline Protection Act of 2008](#)? In addition to controlling shoreline erosion, will the proposed project trap sediment, filter pollution, and provide aquatic and terrestrial habitat?
-

Demonstrate the need for shoreline stabilization. This could include site photographs documenting ongoing erosion. If erosion is occurring, what is/are the source(s) of erosion, rates of erosion, and how will this project address those sources?

- Possible Source of Information on erosion rates:
 - [MD DNR - The Coastal Atlas](#)
-

If shoreline presents existing stabilization structures (e.g., bulkhead) provide details regarding structure age, construction method (e.g., fill, excavation), and current condition. If existing structures are to remain and/or if no landward grading is proposed, provide water-dependent justification for this approach.

- If the existing shoreline is natural, provide details regarding sources of erosion and how will this project address those sources. If hardened structures (e.g., stone sills) are proposed to protect this shoreline, provide justification for their construction and design (i.e., size, height) in lieu of natural shoreline or a softer shoreline (e.g., coir log) approach.
-

SUBMERGED AQUATIC VEGETATION

Checklist outlines supplemental information that may be required for a **proposed living shoreline that is within or adjacent to (i.e., within 50 feet) a submerged aquatic vegetation (SAV) bed**. Information below may be required for projects with impacts to submerged aquatic vegetation and/or projects that require a Wetlands License. Additional information may be required based on the project and/or the applicant's project site. When impacting SAV, considerations should be taken to minimize high marsh plantings, maximize low marsh plantings and open water areas, and consider landward placement of the living shoreline to minimize channelward extent.

EXISTING AND PROPOSED CONDITIONS PLAN SHEET(S)

Plan view should include outline of SAV offshore of the applicant's property and adjacent riparian properties.

- Outline of SAV should depict the last five years of available SAV mapping from the Virginia Institute of Marine Sciences (VIMS). VIMS SAV Interactive Map can be found at: [VIMS - SAV Interactive Map](#). Delineation data can be found at : [VIMS - SAV Reports and Data](#)
 - If the applicant has conducted ground-truthed SAV survey, the survey boundary outline should also include an overlay on plan view containing all VIMS SAV mapping data. Observed SAV species should be noted on the plan, if applicable. Information on SAV species identification can be found at: [Eyes on the Bay - Submerged Aquatic Vegetation \(SAV\) Identification Key](#)

-
- Plan view should note the year(s) that SAV was mapped, species observed (if available), and the density of the bed(s) for each year that SAV was mapped offshore of the applicant's property and adjacent riparian properties. Information on density and SAV species can be found on the [VIMS SAV Interactive Map](#).

-
- Proposed Conditions plan view should quantify the area of impact (square feet) to SAV within the proposed project footprint.
-

ADDITIONAL INFORMATION THAT MAY BE REQUESTED

Has the project's watershed met or exceeded the SAV restoration goals of the Chesapeake Bay Watershed Agreement in the past five years?

- Sources for this information include:
 - [Chesapeake Bay Program - SAV Fact Sheets](#)
 - [VIMS - SAV Area by Segment](#)
 - [VIMS - SAV Data Tables](#)
 - [Eyes on the Bay - Bay Grass Coverage and Habitat Status](#)
 - [Chesapeake Progress - Submerged Aquatic Vegetation \(SAV\)](#)

-
- How does the proposed living shoreline provide ecological uplift that could offset the loss of SAV? Provide documentation of the functional lift expected from the project based on approved ecological assessment methods or applicable research.

-
- Will impacts to SAV be temporary or permanent? If impacts are temporary, provide supporting documentation explaining why SAV is expected to recolonize the impacted area . This should include an examination of grain size, water velocities, and depths present under proposed conditions and a relative comparison to existing conditions that support SAV.
-

Provide a narrative that explains how open water and/or low marsh vegetation has been maximized in the design plans.

To minimize impacts to existing aquatic resources or to minimize channelward extent, can the project be moved landward into the uplands?

COASTAL RESILIENCY

Checklist outlines supplemental information that may be required for a **proposed living shoreline that is designed for coastal resiliency, sea level rise, and climate change**. Additional information may be required based on the project and/or the applicant's project site.

GENERAL REQUIREMENTS

Provide the predicted sea level rise elevation used for the project design (e.g., a +1.5 ft rise in mean sea level by 2050). Include source of predicted elevation. Sea level rise prediction should use the best available data.

- Example sources:

- [MDOT SHA - Climate Change Vulnerability](#)
 - [MD DNR - The Coastal Atlas](#)
 - [NOAA - Sea Level Rise Viewer](#)
 - [University of Maryland Extension - Guidance for Using Maryland's 2018 Sea Level Rise Projections](#)
 - [VIMS - U.S. Sea-Level Report Cards](#)
-

Provide a detailed narrative explaining how the project has incorporated sea level rise into the proposed project design.

Provide detailed justification of the proposed channelward extents of the project.

Provide detailed justification for the proposed height of any stone, sand containment structures.

Provide information on recent or historic shoreline erosion at the site.

Provide details regarding potential marsh migration areas in existing uplands and a discussion of how the proposed shoreline is reasonably anticipated to facilitate tidal wetland transgression under predicted sea levels.

ADDITIONAL INFORMATION THAT MAY BE REQUESTED

Reference sites and examples that use similar design elements may be provided.

COARSE WOODY DEBRIS

Checklist outlines supplemental information that may be required for a **proposed living shoreline that incorporates coarse woody debris (CWD) into the design**. Additional information may be required based on the project and/or the applicant's project site.

GENERAL REQUIREMENTS

- Provide detailed information about the purpose and need for the use of CWD in the proposed project design.
-

Describe the energy level of the shoreline and explain why the CWD will not become a navigation hazard. Energy level of the shoreline is applicant defined and supporting documents and information with sources for the description should be provided. Note: CWD may not be appropriate at high energy shorelines as a foundational design element. Additional justification for use of CWD in high energy shorelines may be required.

- Example Source: The Coastal Resiliency Assessment layer found in the Maryland Coastal Atlas mapping tool presents wave hazard scoring that may reflect energy conditions at your site. ([MD DNR - The Coastal Atlas](#)).
- Wave Hazard scoring can be found in the Shoreline Hazard Index sublayer under the Coastal Resiliency Assessment layer. When this layer is shown on the map, click on the point and a table displays information on the wave hazard at the site.
-

- Provide description of the type of wood (i.e. soft or hard wood) that will be used as CWD.
-

PROPOSED CONDITION PLAN SHEET(S)

- Plan view should depict the placement of any CWD, the anchoring system, the approximate size of the CWD, and channelward extent of the CWD and anchoring system. Plan detail may be provided to accurately depict the system.
-

CROSS-SECTION(S)

- Cross-section views should include the Mean High Water (MHW), the Mean Low Water (MLW; referenced to 0.0 ft), the proposed CWD, and the proposed anchoring system.
-

TOTAL MAXIMUM DAILY LOAD (TMDL) PROJECTS

Checklist outlines required information for a **proposed living shoreline which will be utilized for Chesapeake Bay TMDL goals or to achieve Municipal Separate Storm Sewer System (MS4) targets**. Additional information may be required based on the project and/or the applicant's project site.

GENERAL REQUIREMENTS

Provide documentation verifying that the project is an MS4/Chesapeake Bay TMDL-related restoration project, which may include:

- Watershed Implementation Plan
 - Comprehensive Watershed Assessment
 - Design Report
-

What sediment and/or nutrient reduction credits will be received?

Provide justification for the dimensions of the proposed project. The proposed project should be sited and designed in accordance with applicable recommendations for living shorelines as a Best Management Practice (BMP).

- [Chesapeake Bay Program - Quick Reference Guide for BMPs \(Shoreline Management\)](#)
-

BENEFICIAL USE OF DREDGED MATERIAL

Checklist outlines supplemental information that may be requested for a **proposed living shoreline that utilizes beneficially used dredged material**. Additional information may be required based on the project and/or the applicant's project site.

GENERAL REQUIREMENTS

Please investigate whether suitable dredged material can be used for construction of the living shoreline in accordance with the Department's guidance on [Innovative Reuse and Beneficial Use of Dredged Material](#).

- Additional information regarding opportunities for incorporating dredged material can be found here:
 - [MD DNR - The Coastal Atlas](#)
 - [MD DNR - Beneficial Use of Dredged Material](#)
-

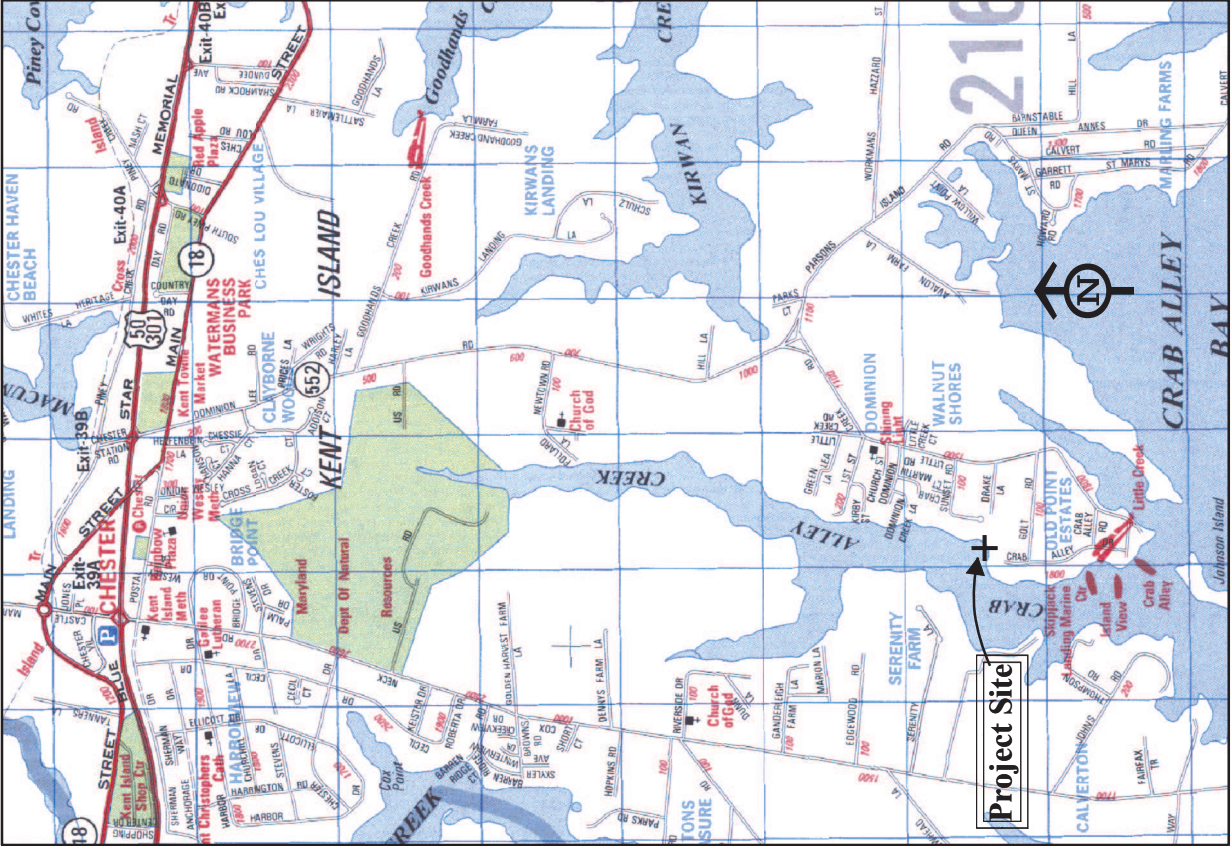
The application for dredging will be required to provide additional information including:

- Grain Size Analysis using ASTM D-422 or the most recent methodology (authorization required from State for sediment bores).
 - If there is reason to believe that contamination exists at the dredge site, then additional sampling may be necessary.
 - Acceptance letter from the property owner of the living shoreline stating the volume of material that they will accept.
 - Other information required by the Department.
-

The application for dredging or the living shoreline will be required to provide additional information including:

- Information regarding placement of material (e.g. directly on living shoreline below MHWL or material dewatered in the uplands).
 - Information regarding material containment during placement and grading (e.g. construction or placement of sill, turbidity curtain, sill fence, etc.).
 - Other information required by the Department.
-

- DNR's [BUILD tool](#) allows project planners to proactively identify sources of dredged material and potential placement sites.
-



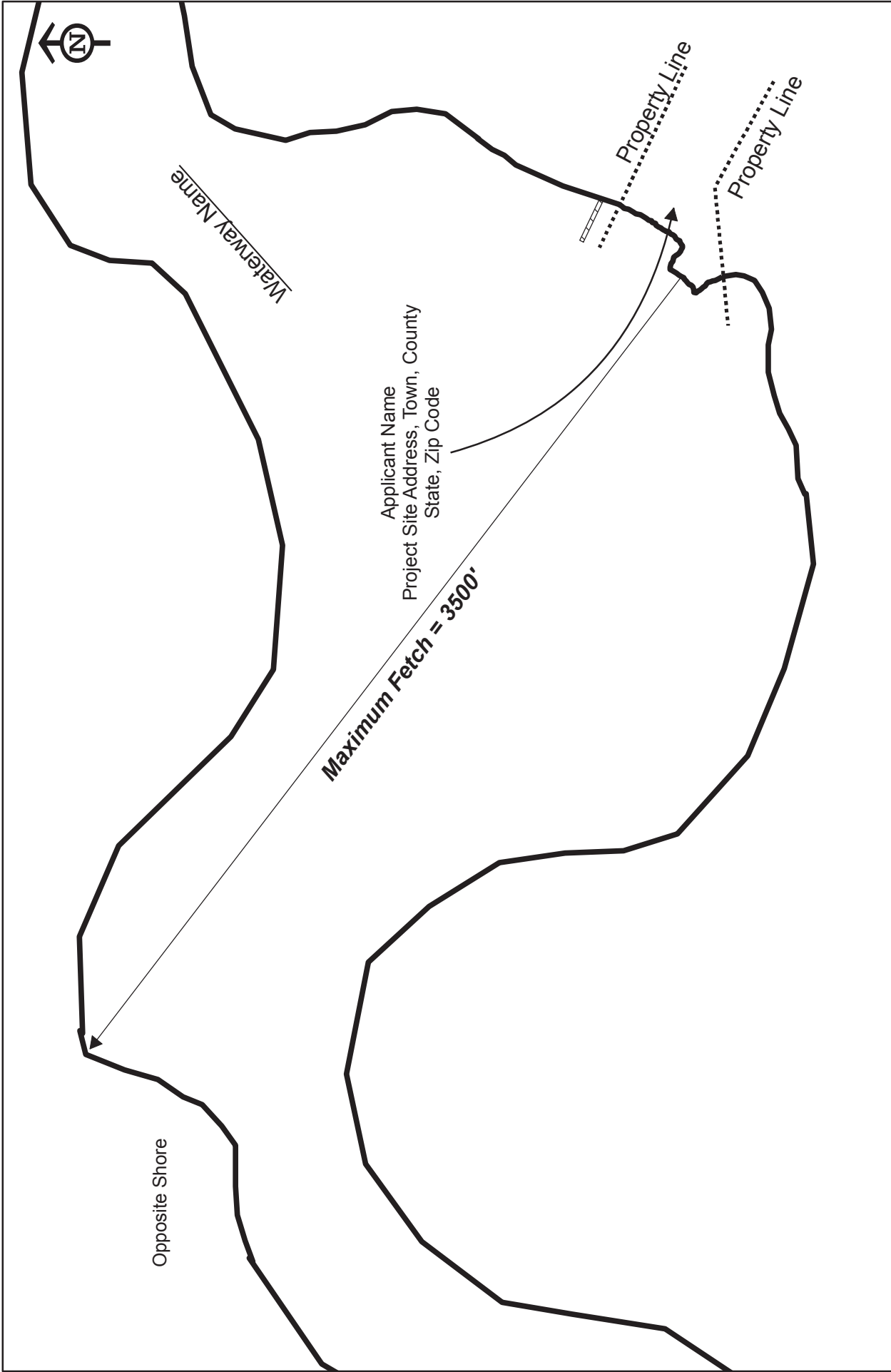
Vicinity Map & Aerial Photo

Project: [INSERT TYPE OF PROJECT]

Proposed Project for:
 Applicant NAME
 Mailing Address, Town, County, State, Zip Code

NOTES

DATE, Page X of Y



Project Vicinity Conditions
 Project: Living Shoreline

Proposed Project for:
 Applicant NAME
 Mailing Address, Town, County, State, Zip Code

PROJECT NOTES

0 120 240 480 720 960 Feet
 1 inch = 500 feet

DATE, Page X of Y



Waterway Name
← EBB →
← FLOW →

Maximum Fetch = 3500'

-6.0'
-5.0'
-4.0'
-3.0'
-2.0'
-1.0'

Existing Bulkhead & Pier
MLWL
MHWL

Adjacent Property Owner
Address
City/Town, State Zip Code
County

Applicant Name
Project Site Address, Town, County
State, Zip Code

Adjacent Property Owner
Address
City/Town, State Zip Code
County

Existing Revetment

Water depths referenced to mean low water
(MLW = 0.0')

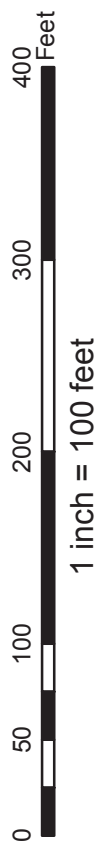
Existing Conditions

Project: Living Shoreline

Proposed Project for:
Applicant NAME

Mailing Address, Town, County, State, Zip Code

PROJECT NOTES







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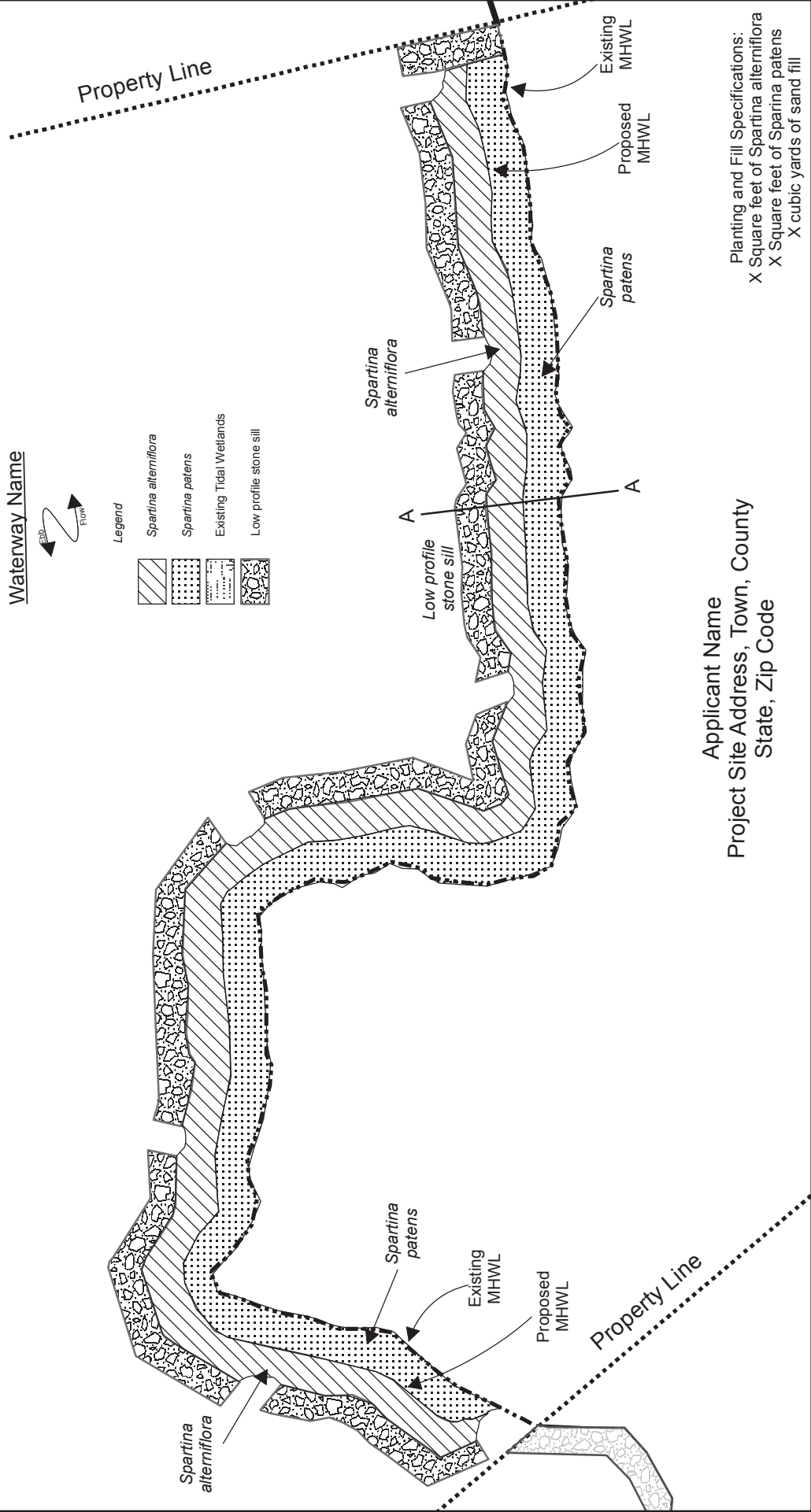


Waterway Name



Legend

-  *Spartina alterniflora*
-  *Spartina patens*
-  Existing Tidal Wetlands
-  Low profile stone sill



Applicant Name
 Project Site Address, Town, County
 State, Zip Code

Planting and Fill Specifications:
 X Square feet of *Spartina alterniflora*
 X Square feet of *Spartina patens*
 X cubic yards of sand fill

Proposed Conditions

Project: Living Shoreline

Proposed Project for:



Applicant NAME

Mailing Address, Town, County, State, Zip Code

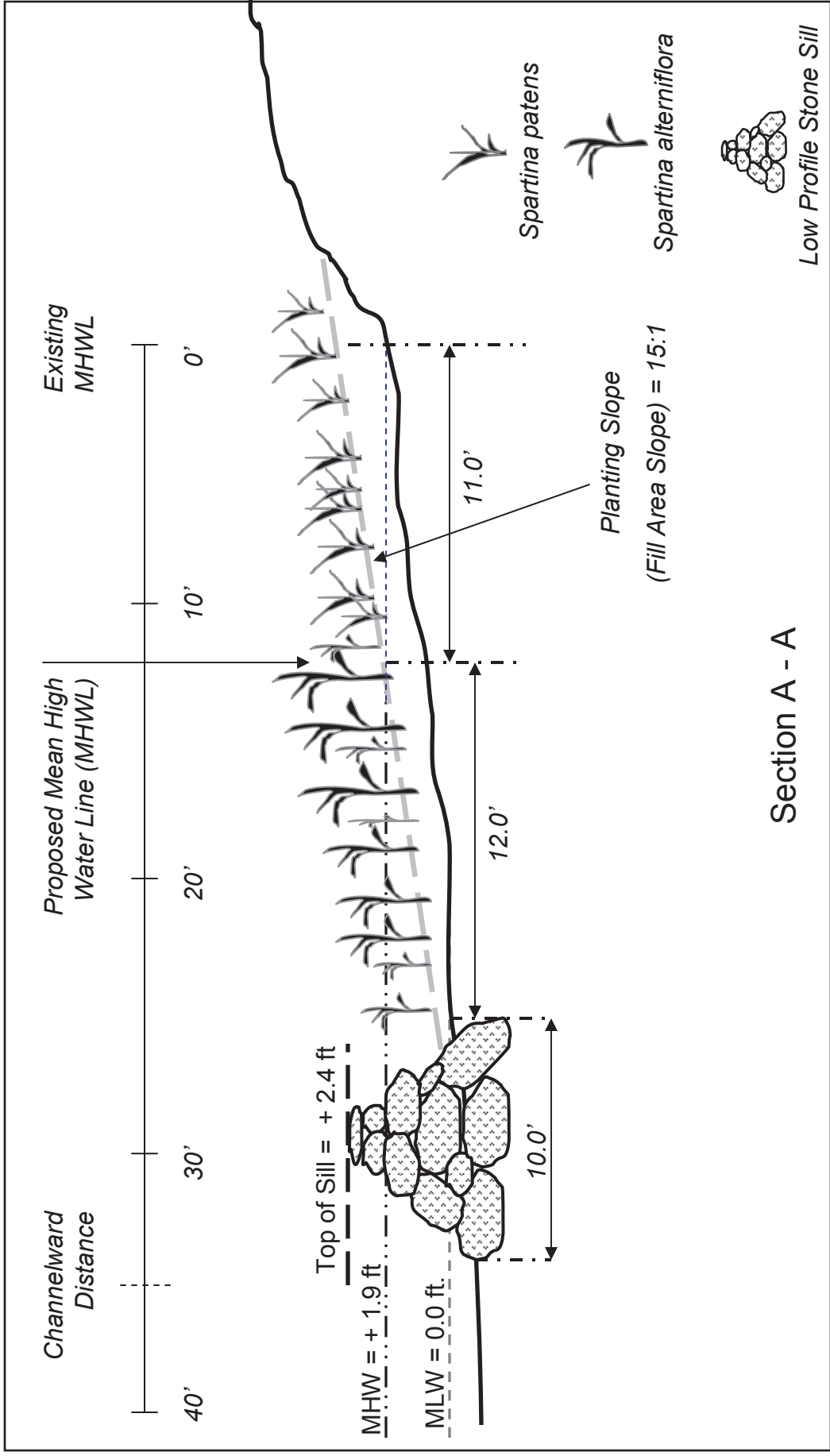


1 inch = 50 feet

PROJECT NOTES

-  Existing Structure
-  Proposed Structure

DATE, Page X of Y



Project: Living Shoreline

Notes: Maximum Channelward Distance; Amount of Clean Sand Fill (cubic yds.), Amount of Planting Area (Sq Ft.) for both low marsh (*S. alterniflora*) and high marsh (*S. patens*), Slope of planting area; number of plants; Marsh maintenance plan (draft)

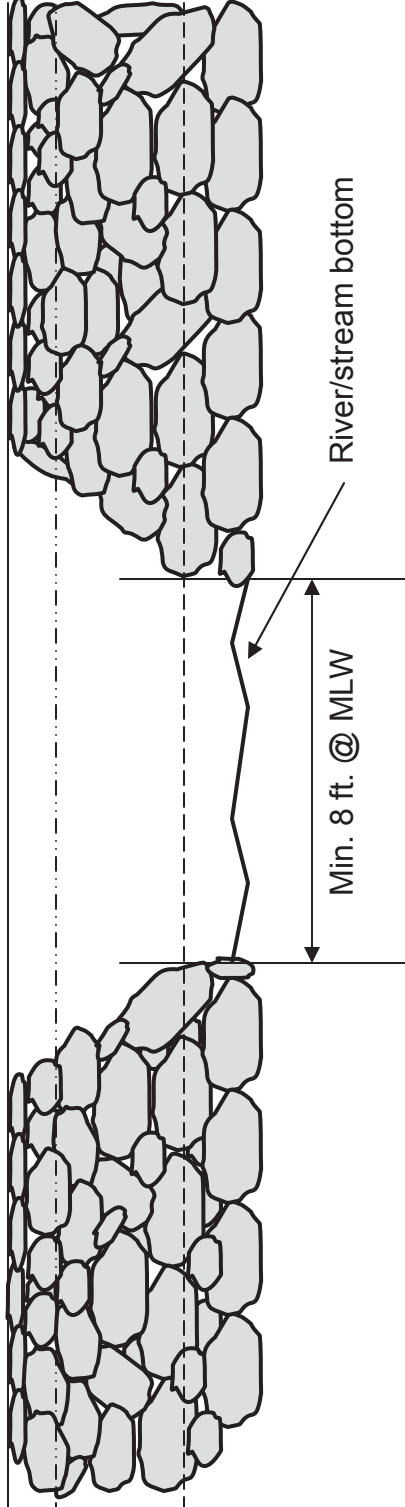
Proposed Project Cross-section for:
 Applicant Name
 Mailing Address, Town, County, State

DATE, Page X of Y

Top of Sill = + 2.4 ft

MHW = + 1.9 ft

MLW = 0.0 ft.



Cross-Section: Typical Sill Opening

Project: Living Shoreline

Proposed Project Cross-section for:
Applicant Name
Mailing Address, Town, County, State

Notes: Bottom of sill opening below the MLWL