CONNECTICUT LIVING SHORELINES

"Projects into Practice'

UCONN, CIRCA
November 20, 2017
Groton CT

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SCOPE OF PRESENTATION

- Regulatory Program Goals
- Geographic Jurisdictional Limits
- Review Process
- Alternatives Analysis & Public Interest Review
- Living Shoreline Features & Evaluation

REGULATORY PROGRAM MISSION & GOALS

Mission

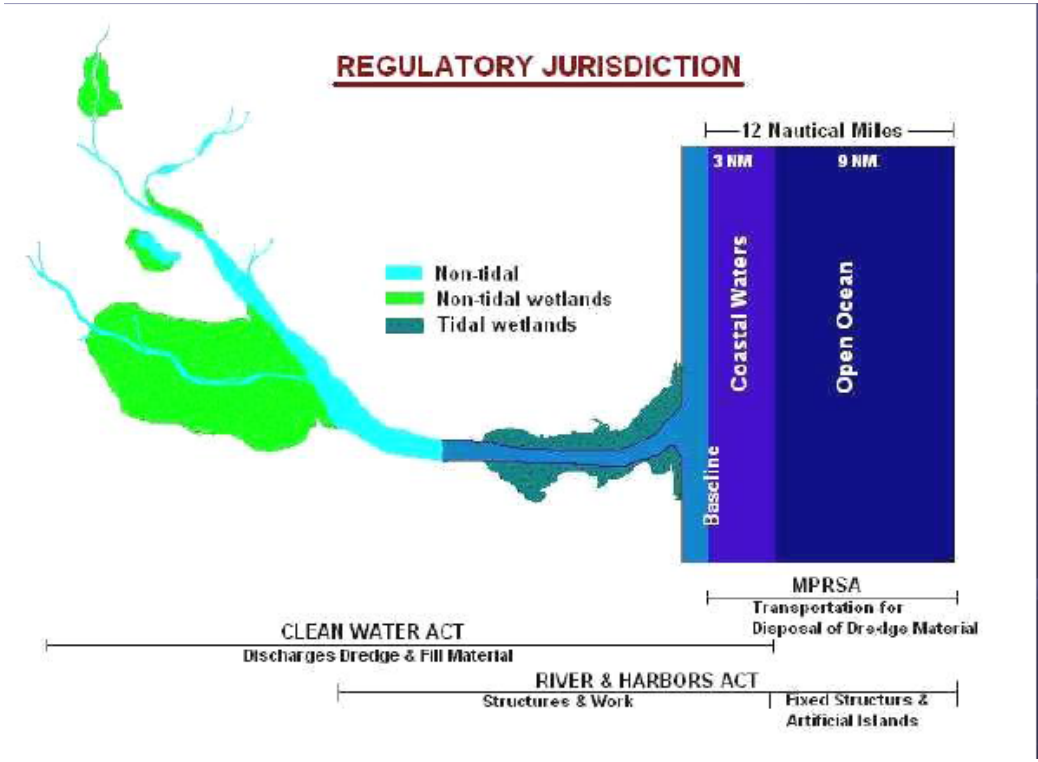
- Balance human use and development with environmental protection

Goals

- Protect aquatic environment
- Enhance regulatory efficiency
- Make fair, reasonable and timely decisions
- Achieve “no net loss” of aquatic resources

SECTION 10 **RIVERS & HARBORS ACT**

- "Navigable Waters" are those waters subject to the ebb and flow of the tide, waterward of MHW and/or those waters that are presently used, have been used in the past, or may be susceptible for use in the future for the transport of interstate commerce.



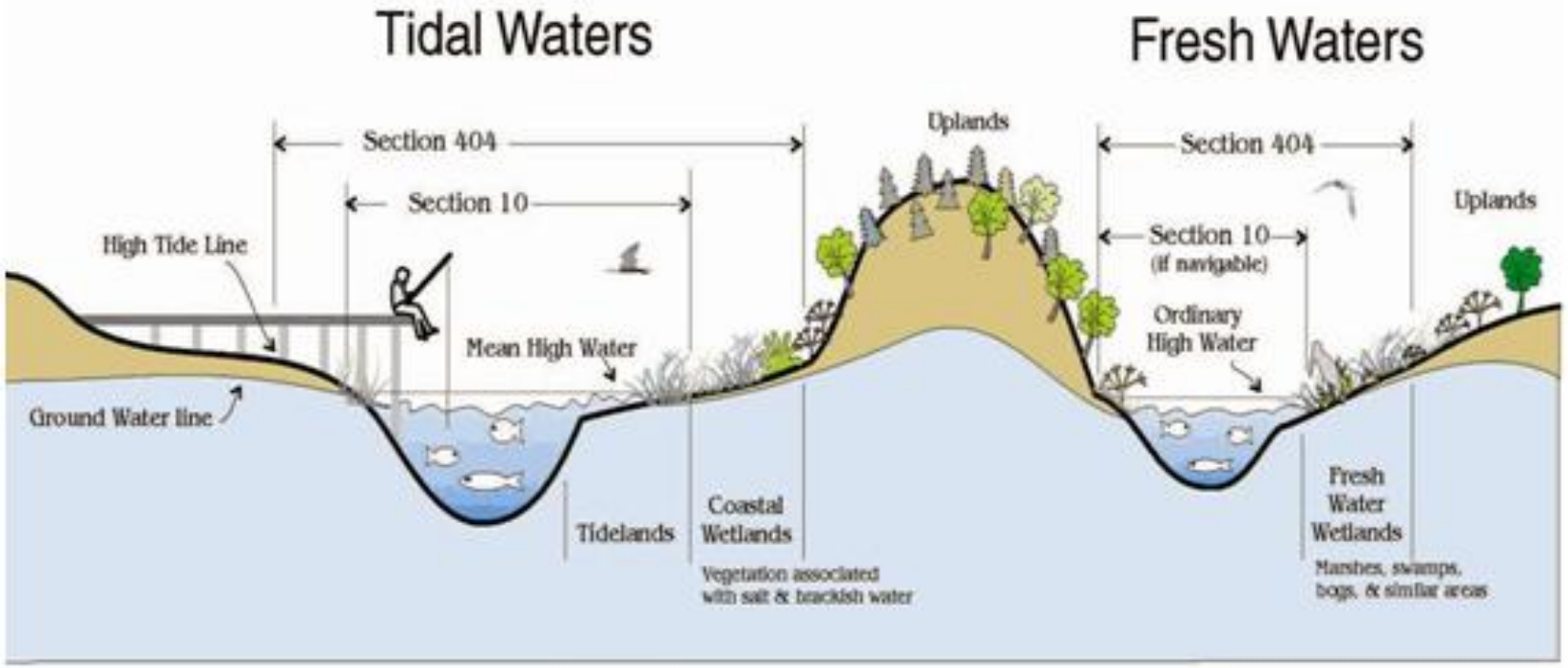
SECTION 10 **RIVERS & HARBORS ACT**

- Regulates any "work" in, over or under navigable waters of the U.S. that may affect their course, condition, location of capacity of the waters.
- Prohibits the unauthorized obstruction or alteration of a navigable water.





CORPS OF ENGINEERS REGULATORY JURISDICTION



	Section 103	Section 404	Section 10
	Ocean Disposal of Dredged Material	Discharge of Dredged or Fill Material (all waters of the U.S.)	All Structures and Work (navigable waters)
Typical examples of regulated activities	Ocean discharges of dredged material	All filling activities, utility lines, outfall structures, road crossings, beach nourishment, riprap, jetties, some excavation activities, etc.	Dreding, marinas, piers, wharves, floats, intake / outtake pipes, pilings, bulkheads, ramps, fills, overhead transmission lines, etc.

SECTION 404 **CLEAN WATER ACT**

- Goal is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters"
- Requires a Dept. of Army authorization for discharge of dredge or fill material into Waters of the U.S. and adjacent wetlands.
- All discharges of dredged or fill material in Waters of the U.S. requires a Dept. of Army Permit.
- Applies to both permanent and temporary discharges
- "Waters of the U.S. includes navigable waters, inland rivers, lakes, streams and adjacent, contiguous and bordering wetlands including mudflats and wet meadows – 33 CFR §328.3

CWA **404(b)(1) GUIDELINES**

- Rebuttable presumption that upland alternatives are not available.
- Avoid & minimize discharge to greatest extent practicable
- Review impact for location, type discharge, site stabilization, construction BMPs to ensure discharge is minimized.
- Factual determination & technical evaluation of impact on substrate, water circulation/quality, aquatic function, secondary & cumulative impacts
- Unavoidable impacts contributing to wetland loss mitigated
- Corps can only issue an authorization for the least environmentally damaging practicable alternative (LEDPA)

PUBLIC INTEREST REVIEW

- Addresses both Project Purpose and Project Need
- NEPA requires an evaluation of the probable impacts of a proposed activity, and its intended use, on the public interest.
- Agency compliance with Federal law is mandatory
- Complete & objective evaluation; fully-informed decision after case-specific analysis

REGULATORY REVIEW PROCESS

- Corps is impartial – cannot favor one type of project over another.
- Corps must evaluate effect of a project under existing authorities. If a project involves a discharge of fill, the agency must consider practicable alternatives to reduce discharges that are consistent with the overall project purpose of the project.
- Ensure that the best practicable environmental alternative is selected to accomplish project purpose.

Graphic courtesy Burke Environmental Associates

Riparian Vegetation Management

Bank Grading

Fiber Logs

Tidal Marsh Enhancement

Tidal Marsh Creation

Beach Nourishment & Dune Restoration

Marsh Toe Revetment

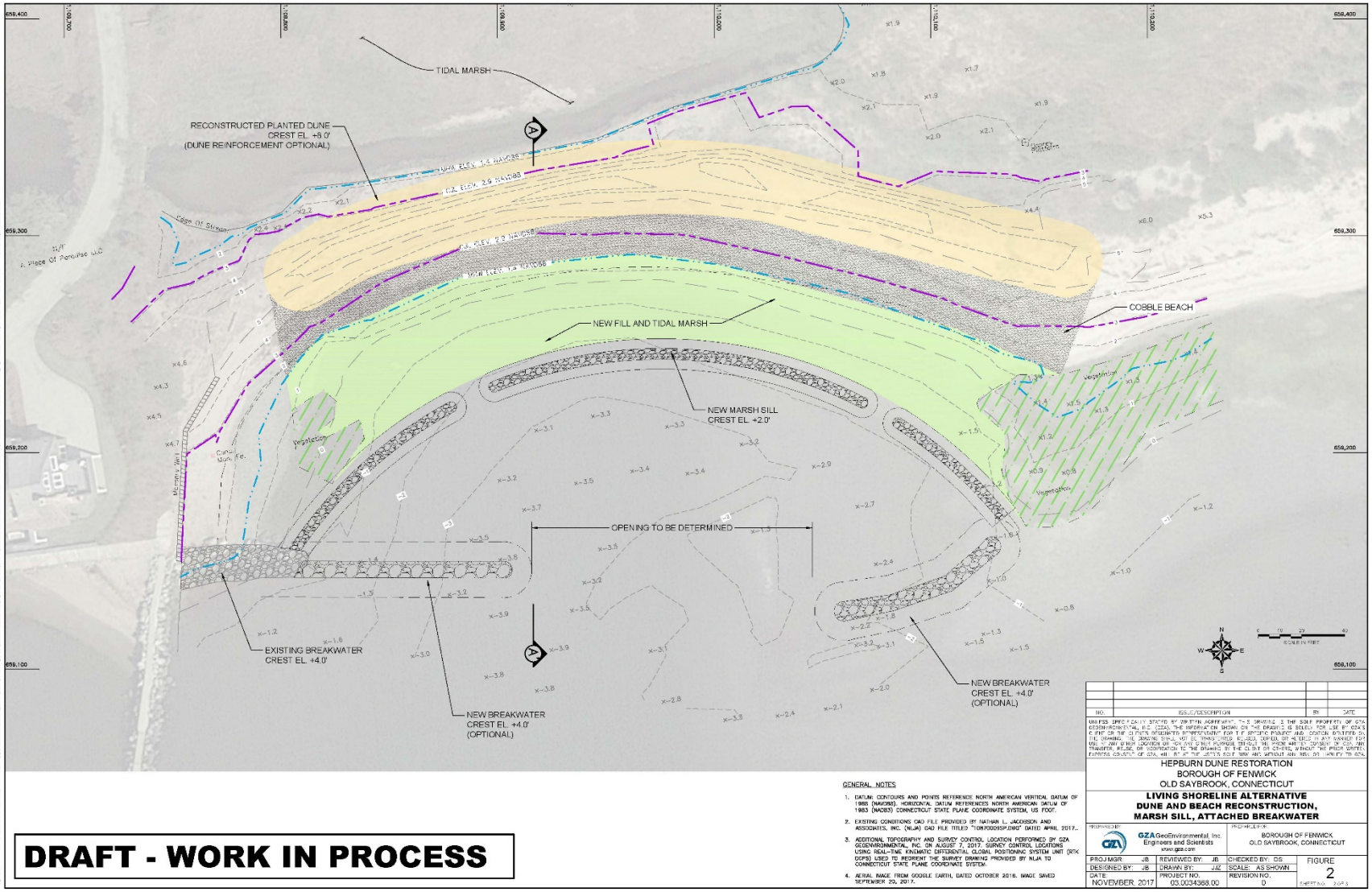
Marsh Sill

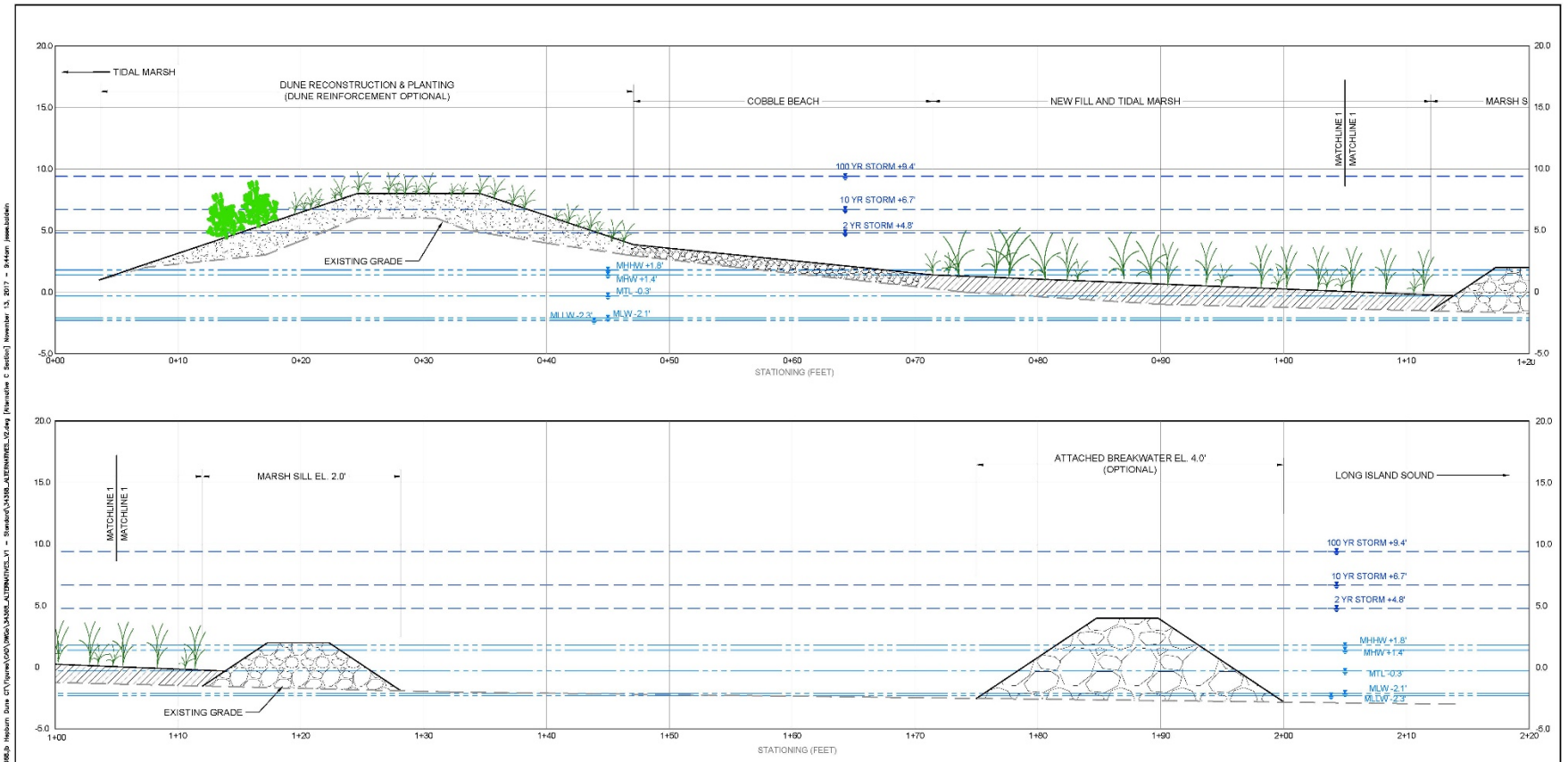
Marsh with Groins

Living Breakwater

Offshore Breakwater System

Oyster Reefs





DRAFT - WORK IN PROCESS

HEPBURN DUNE RESTORATION
BOROUGH OF FENWICK
OLD SAYBROOK, CONNECTICUT

LIVING SHORELINE ALTERNATIVE
CROSS SECTION

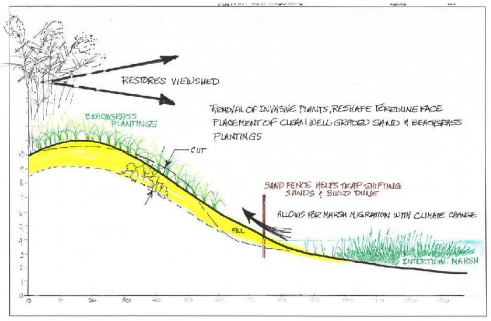
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: BOROUGH OF FENWICK OLD SAYBROOK, CONNECTICUT

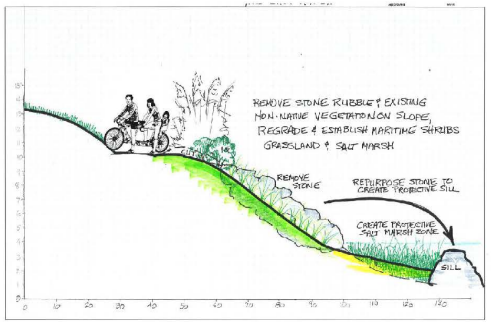
PROJ MGR:	JB	REVIEWED BY:	JS
DESIGNED BY:	JB	DRAWN BY:	JJZ
DATE: NOVEMBER, 2017		PROJECT NO. 03.0034368.00	
CHECKED BY:	DS	SCALE: AS SHOWN	
REVISION NO. 0		FIGURE 3	SHEET NO. 3 OF 3

EAST SHORE PARK LIVING SHORELINE
New Haven, CT

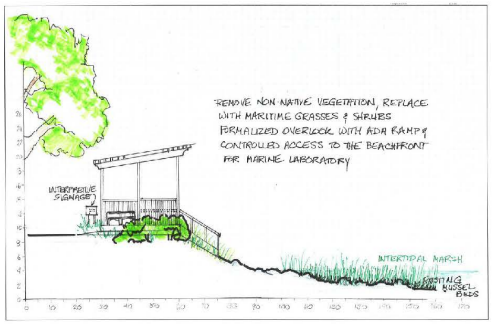
PROPOSED CONCEPT #2 created by GEI in partnership with Save the Sound



Restore viewshed from land by removing invasive phragmites and establishing beachgrass. Install sand fence to help trap sands and build dune.



Remove stone revetment and repurpose to create a protective sill and establish new tidal marsh.



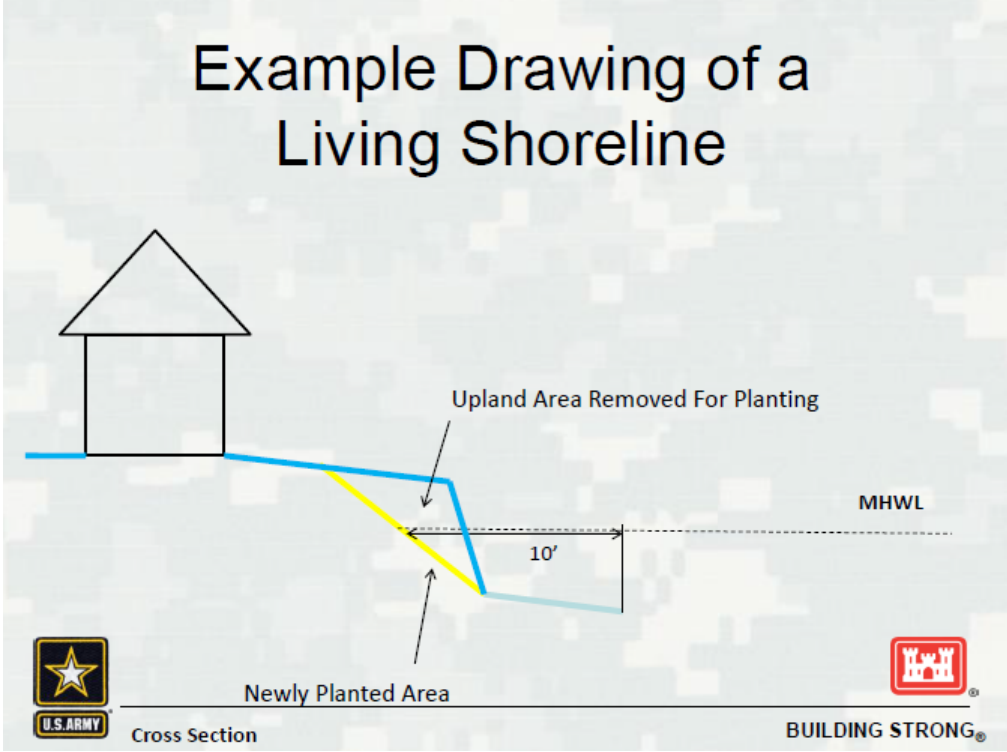
Create an overlook and other places of intentional access to the waterfront , opening up the shoreline as an amenity to park users.

EVALUATE THE OBVIOUS FIRST

Practicable alternatives that avoid waterway encroachment.

- Relocation of threatened features
- Modification @/above MHW

Dunes/vegetated slopes



FACILITATING EVALUATION

- Do not place fill in wetlands, mudflats, submerged aquatic vegetation of natural shellfish beds.
- Use the least amount of hard material to achieve project goal.
- Limit fill discharge to minimum necessary to achieve adjacent wetland elevation.
- Regardless of energy level design for continuity of the shoreline.

FACILITATING EVALUATION

- Ensure design maintains normal hydrologic regime.
- Make sure to consider and incorporate access for marine & terrestrial organisms.
- Design so that natural erosion and accretion processes are not impeded or accelerated.
- Use natural particle size and natural materials consistent with the proposed site.

SUBMIT AN INFORMED APPLICATION

- Ensure plans depict <u>both</u> existing condition MHW and MLW and proposed MHW and MLW elevation after shoreline modification.
- Limit height of structures if they are necessary to ≤ MHW
- Ensure application includes analysis of bank erosion rate, source of sediment, elevation, wave energy, prevailing wind/wave direction, substrate & vegetation type.

PLAN FOR POST-CONSTRUCTION

- Expect compliance monitoring such as erosion rate, substrate elevation, plant survival & invasive control
- Develop criteria & standards for monitoring up-front with regulatory agencies
- Leverage local educational partnerships

KEY RESOURCES

- LIVING SHORELINES IN NEW ENGLAND STATE OF THE PRACTICE, THE NATURE CONSERVANCY BY WOODS HOLE GROUP
  https://www.conservationgateway.org/ConservationPractices/Marine/crr/Documents/Final_StateofthePractice_7.2017.pdf
- NOAA GUIDANCE FOR CONSIDERIN GTHE USE OF LIVING SHORELINES
  http://www.habitat.noaa.gov/pdf/noaa_guidance_for_considering_the_use_of_living_shorelines_2015.pdf
- NORTHEAST OCEAN DATA PORTAL
  http://www.northeastoceandata.org/
- NOAA DIGITAL COAST
  https://coast.noaa.gov/digitalcoast/
- US ARMY CORPS OF ENGINEERS ENGINEERING WITH NATURE
  https://ewn.el.erdc.dren.mil/index.html

QUESTIONS?