# Living Shoreline Opportunity: Edith Read Wildlife Sanctuary

# PROJECT DESIGN TEAM

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Coastal Ecologist

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Project Manager

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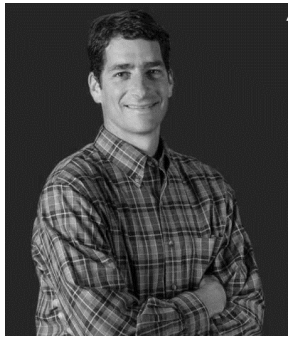
Regulatory Specialist



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2d Hydrodynamic Modeler

MIKE DOHERTY, PLA
Landscape Architect

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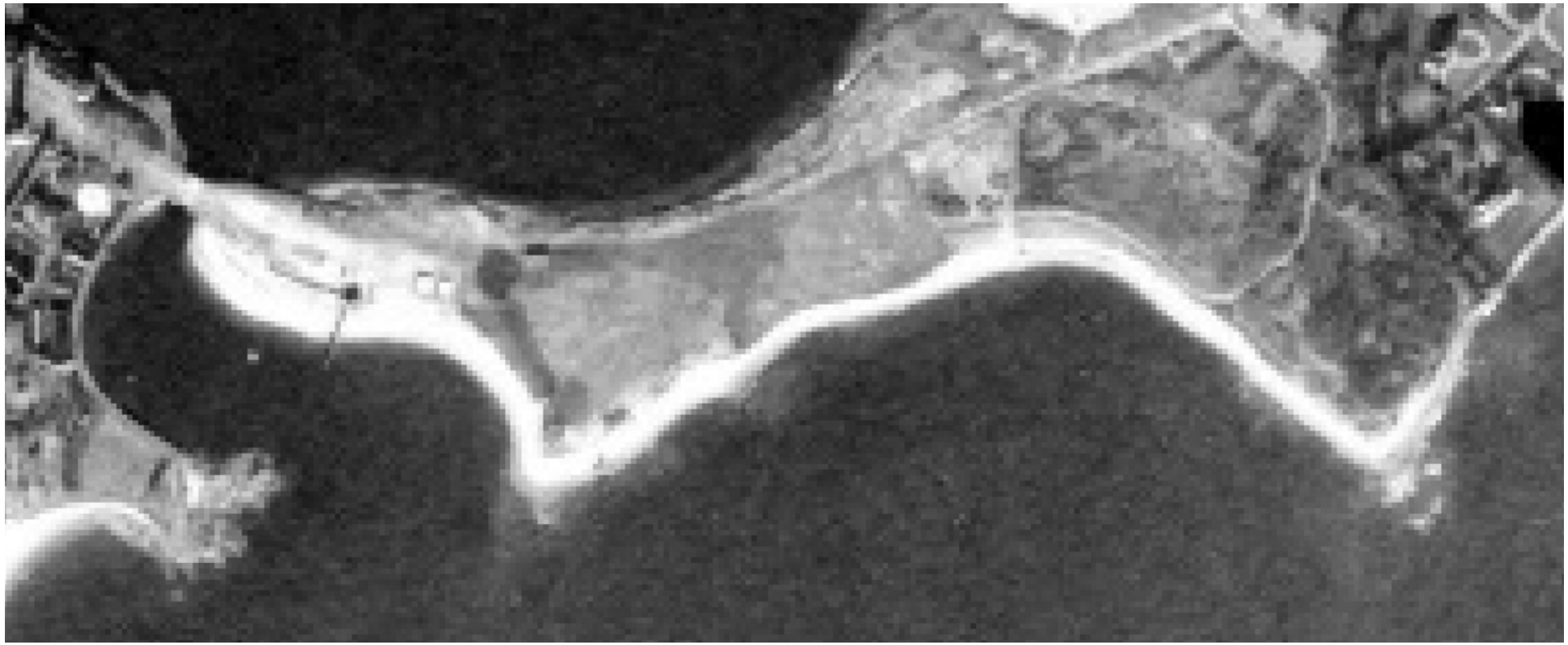
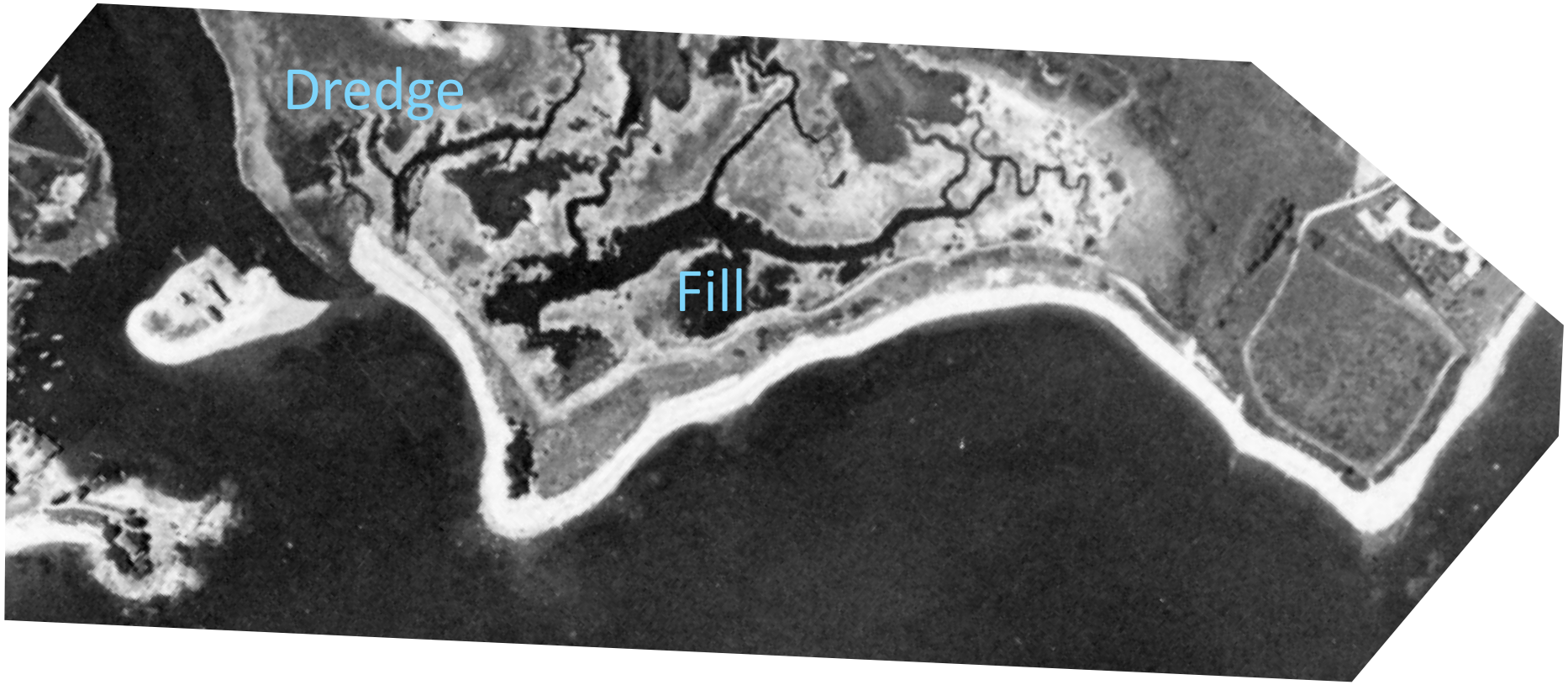
# HISTORIC AERIAL IMAGERY
# 1940



# HISTORIC AERIAL IMAGERY
# 1925



# HISTORY & timeline

- Playland built in 1928
- Manursing Pond created between 1925 and 1940.
- Nor'easter in December 1992: Shoreline and sanctuary access road severely eroded by strong wave action.
- Further damage to the Sanctuary and Playland Park during subsequent tropical cyclones and other storms.
- County installed hard armoring and dune system along the shoreline to improve its resilience to coastal erosion.
- Dunes substantially destroyed and eventually eliminated during Hurricane Sandy in 2012.

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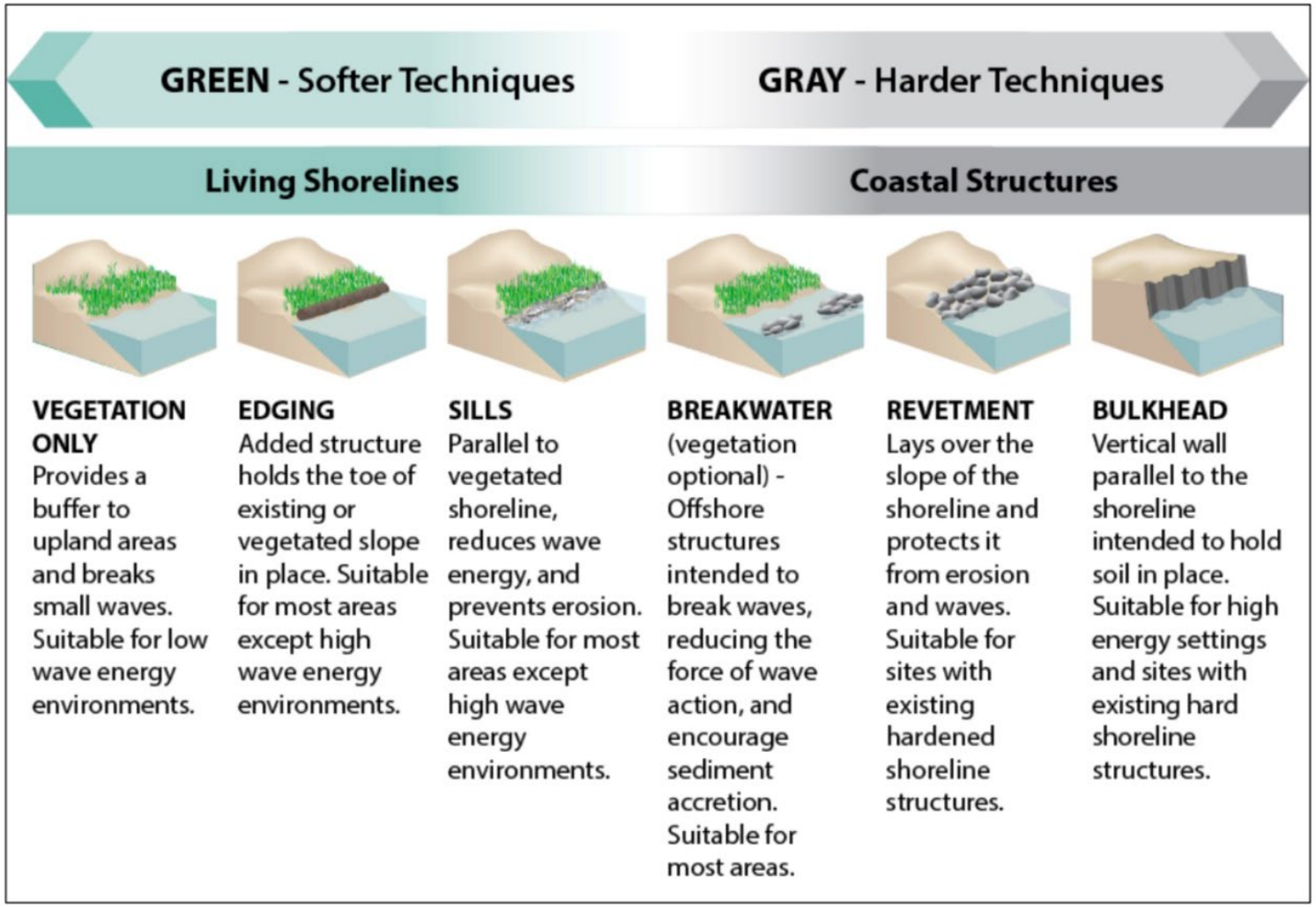
# … IS A "LIVING SHORELINE?"




**Source:** CRS, adapted from NOAA, *Guidance for Considering the Use of Living Shorelines*, 2015, p. 8, at https://www.habitatblueprint.noaa.gov/wp-content/uploads/2018/01/NOAA-Guidance-for-Considering-the-Use-of-Living-Shorelines_2015.pdf.

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# LIVING SHORELINE (ls) DEFINITION

- The National Oceanic and Atmospheric Association (NOAA) defines a living shoreline as follows:
  - **"A living shoreline is made up mostly of native material.** It incorporates natural vegetation or other living, natural soft elements alone or in **combination** with some type of harder shoreline structure, like **oyster reefs, rock sills, or anchored large wood for added stability.** Living shorelines connect the land and water to stabilize the shoreline, reduce erosion, and provide ecosystem services, like **valuable habitat**, that enhances **coastal resilience**."
- Examples can include beach nourishment, dune creation or restoration, tidal marsh (wetland) restoration with or without rocky structures, artificial reefs, and bioengineered bank stabilization

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Playland Lake
(aka Manursing Pond)
Tide Gates
Former Shore
Protection Project
Eroded Shoreline
Project Area
Edith G. Read Natural Park
& Wildlife Sanctuary
Eroded
Shoreline
Playland Park
Flood
Ebb
Tidal
Wave Direction
Long Island Sound


Hurricane Sandy
October 29, 2012
Erosion
Erosion
Deposition
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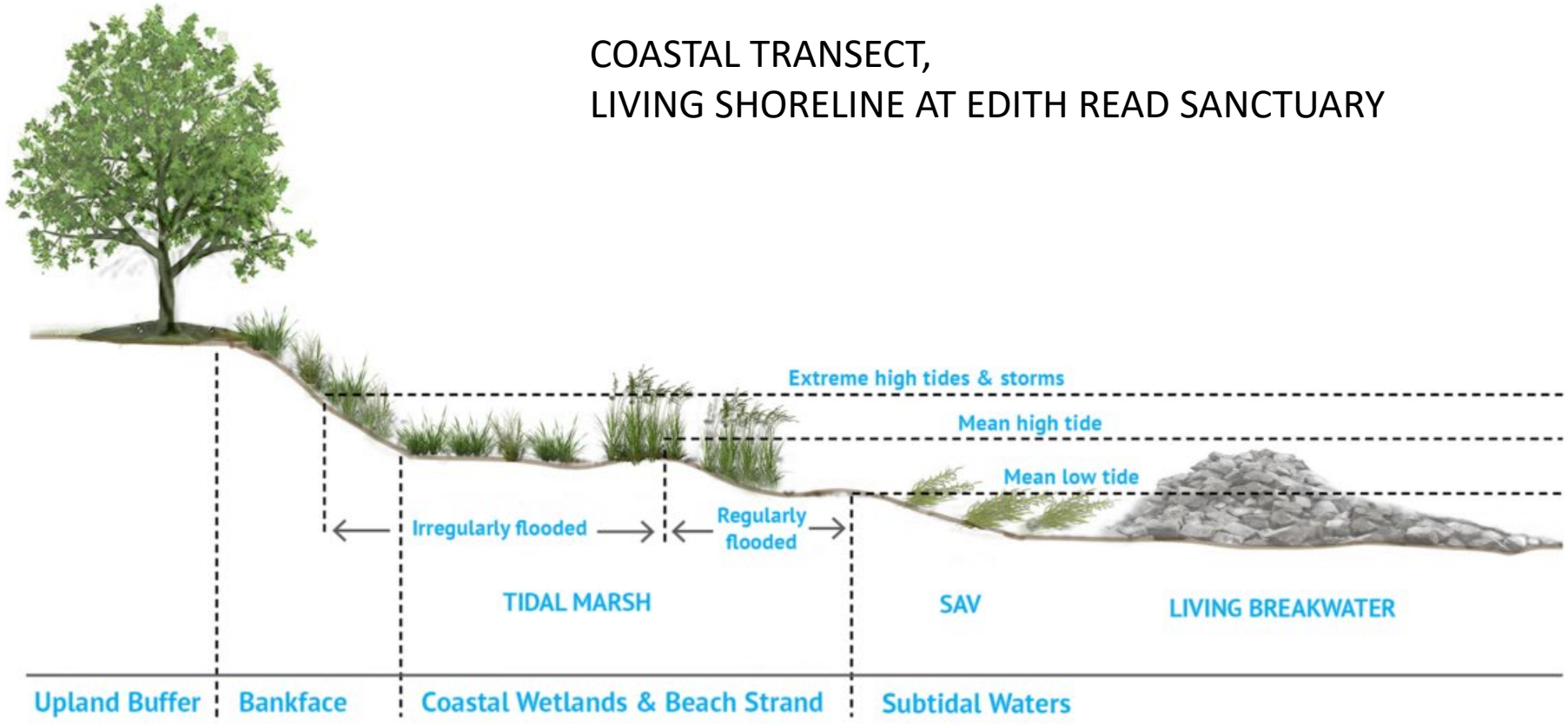
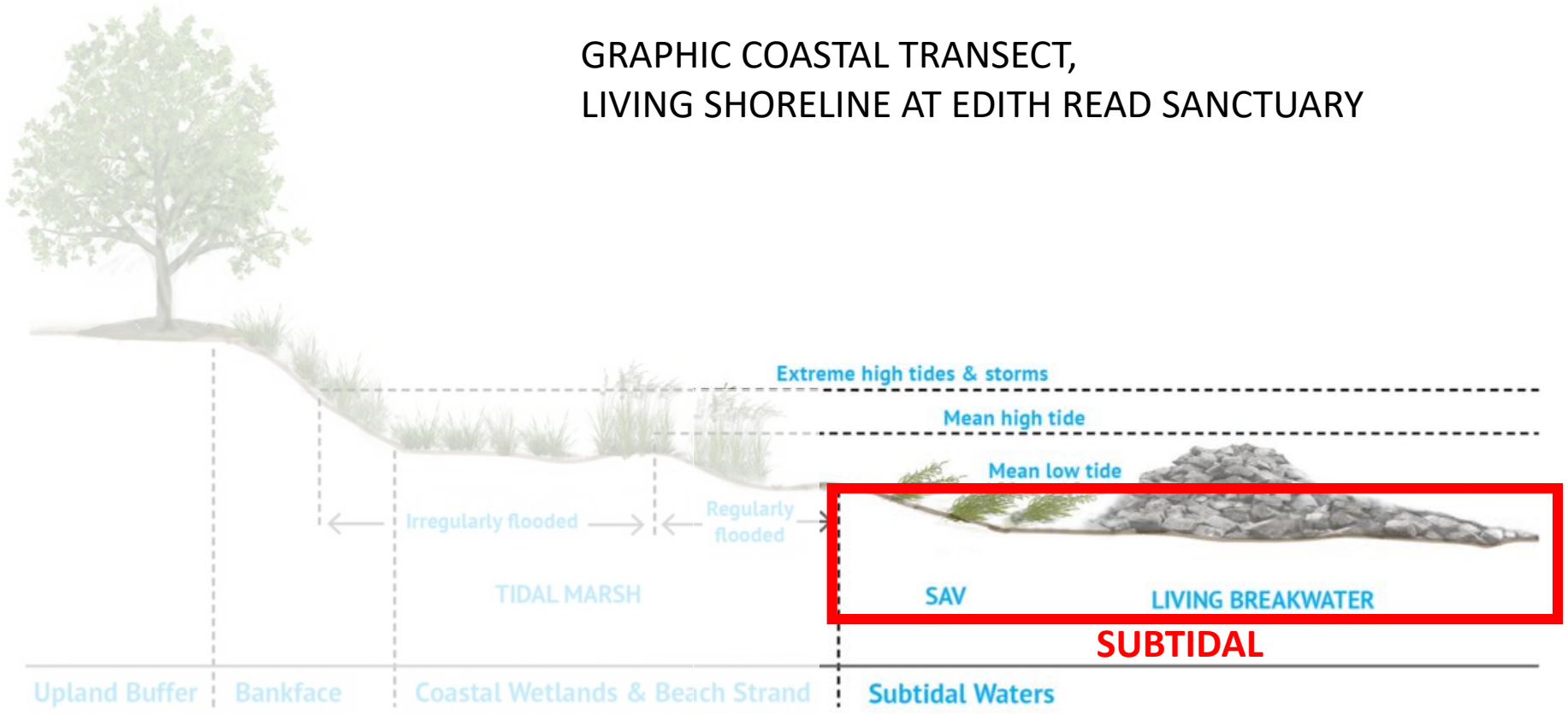
# shoreline components

COASTAL TRANSECT,
LIVING SHORELINE AT EDITH READ SANCTUARY



# shoreline components

GRAPHIC COASTAL TRANSECT,
LIVING SHORELINE AT EDITH READ SANCTUARY




**THREE PRIMARY ZONES**

# Subtidal/Intertidal Wave Attenuation

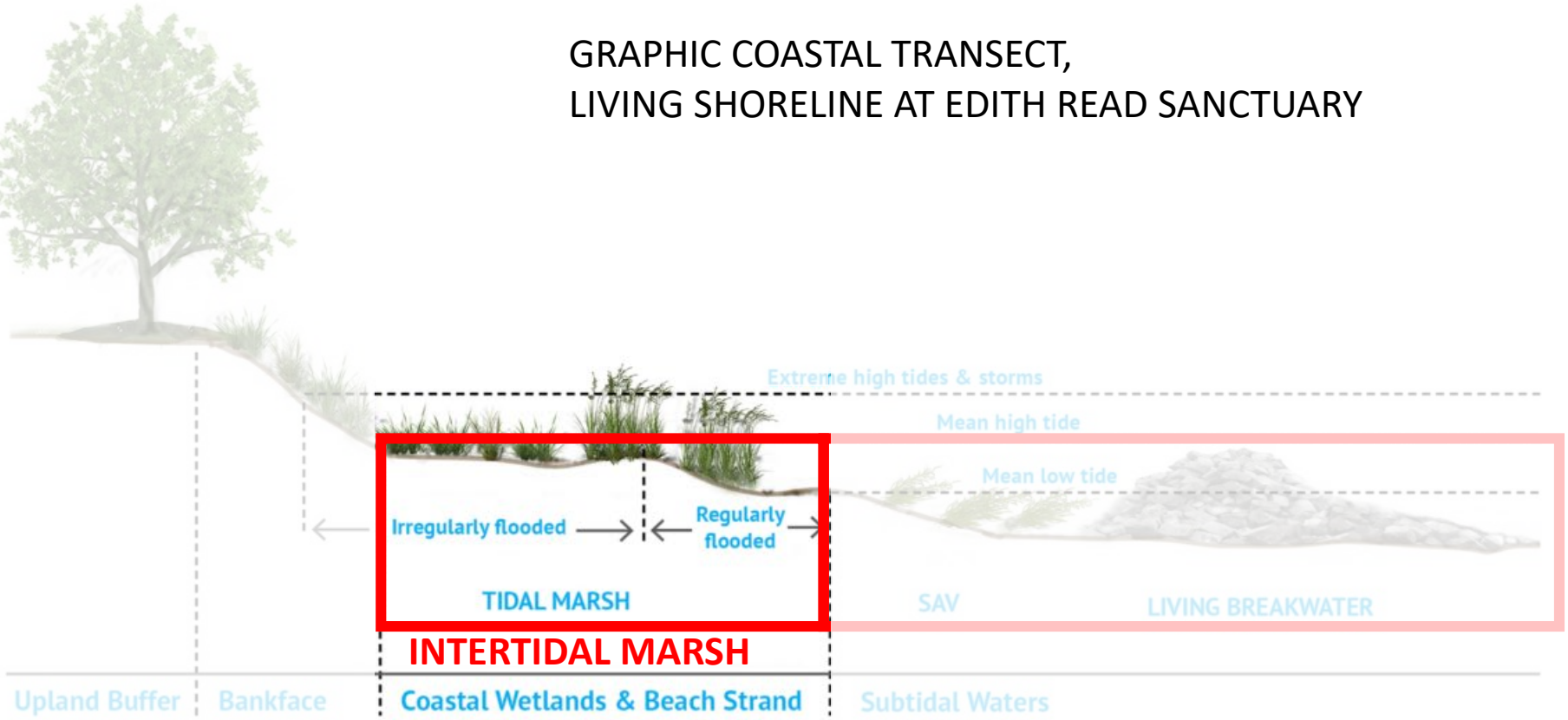
- Oyster Reef & Boulder Sills (Elevation -4'-1' NAVD)

“Reef ball”

Boulder Sill

# shoreline components

GRAPHIC COASTAL TRANSECT,
LIVING SHORELINE AT EDITH READ SANCTUARY



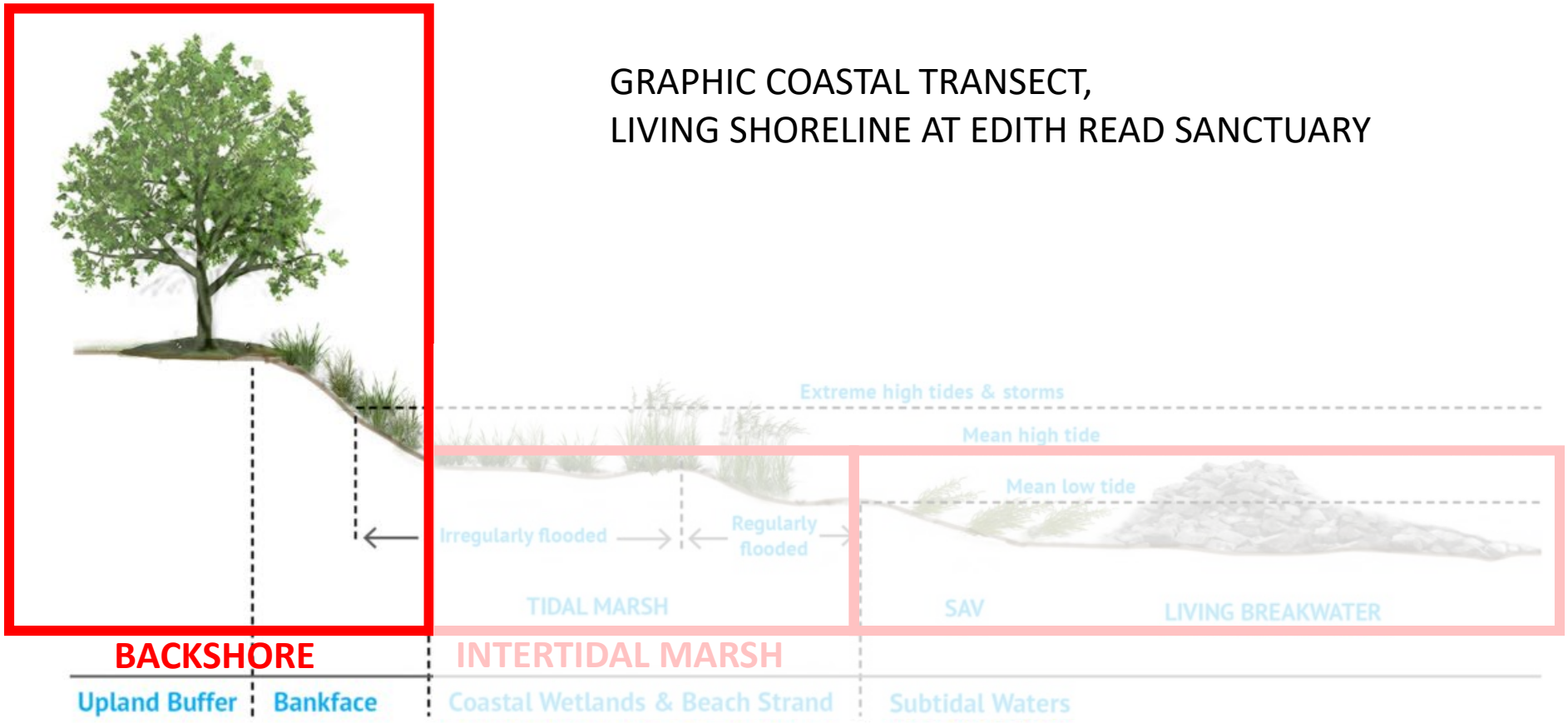

**THREE PRIMARY ZONES**

# Intertidal Marsh

- (Elevation 1' – 5' NAVD)

Intertidal Marsh: peat recruitment and spartina in reduced wave energy zone

# shoreline components




GRAPHIC COASTAL TRANSECT,
LIVING SHORELINE AT EDITH READ SANCTUARY

**THREE PRIMARY ZONES**

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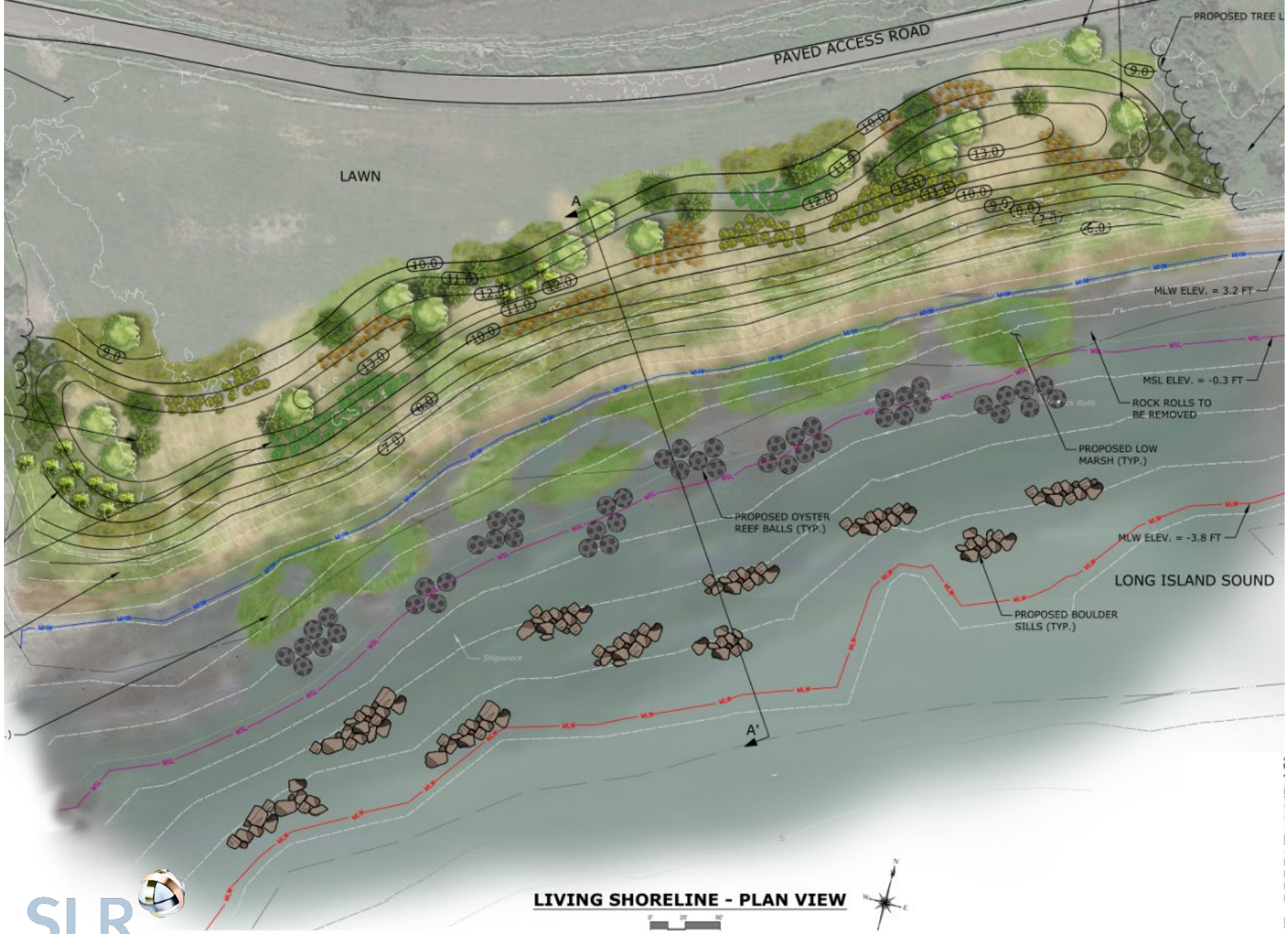
# Backshore Coastal Berm

- (> Elevation 5' NAVD)

Salt-tolerant native shrubs and trees planted on berm


PAVED ACCESS ROAD
LAWN
A
A'
MLW ELEV. = 3.2 FT
MSL ELEV. = -0.3 FT
ROCK ROLLS TO BE REMOVED
PROPOSED LOW MARSH (TYP.)
PROPOSED OYSTER REEF BALLS (TYP.)
MLW ELEV. = -3.8 FT
LONG ISLAND SOUND
PROPOSED BOULDER SILLS (TYP.)
LIVING SHORELINE - PLAN VIEW
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# NEXT STEPS:

- SUMMER 2021:  Begin design and 2d wave modeling
- FALL 2021: Advance design drawings
- WINTER 2021: Regulatory Permitting
- FALL 2022: Final design
- WINTER 2022/2023: Construction