

06.13.2020



LANDSCAPE ARCHITECTURE CAPSTONE DESIGN STUDIO

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WATCH HILL

WESTERLY, RHODE ISLAND

SENIORS OF

LANDSCAPE ARCHITECTURE

Faculty Lead: Professor Richard Sheridan, **RLA ASLA**

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Kevin León Curvelo, **ASLA**

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Aidan Walsh

MESM

Seth Pilotte, **BS Civil Engineering**

SENIORS OF

LANDSCAPE ARCHITECTURE

Synopsis:

Watch Hill is undoubtedly one of New England's coastal gems. Historically developed to take optimal advantage of its superb peninsular shore location, its natural and historic fabric are assets to be treasured and preserved.

Working with stakeholders in the Watch Hill Conservancy, students are challenged to address 3 feet of sea level rise, storm surge, historic character, and commercial development in a multidisciplinary fashion, understanding unique design problems that are broad in scale and complex in nature.

Scenes:

SCENE **01**: why watch hill?

SCENE **02**: site visit

SCENE **03**: meeting the stakeholders

SCENE **04**: inventory

SCENE **05**: analysis

SCENE **06**: guidance from beta

SCENE **07**: charette

SCENE **08**: conceptualization

SCENE **09**: drawing + diagramming

Investing in
good design is
good business

good design

HEY YOU!

WHAT'S YOUR VIBE?

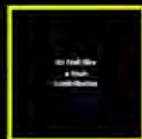
LandDesign.
CREATING PLACES
THAT MATTER.

silence in
a silo



**creative
collaboration**





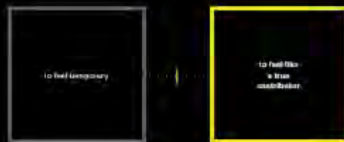
to know every
single CAD
command ever



to make an
impact



**creative
collaboration**



**to feel like
a true
contributor**



**to make an
impact**

“Make no little plans; they have no magic to stir people's blood

and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone be a living thing, asserting itself with ever-growing insistency.

Remember that our children and our grandchildren are going to do things that would stagger us. Let your watchword be order and your beacon beauty.”

- DANIEL BURNHAM, FAIA

Director of Works, World's Columbian Exposition in Chicago | 1893

Napatree Point

INTRODUCTION



August 2019

VOGUE

WHY?

WATCH HILL

VOGUE

TRAVEL

The Charming Rhode Island Village You Should Visit This Summer

BY MICHAELA BECHLER

August 8, 2019

WATCH HILL | WESTERLY, RHODE ISLAND

STUDIO CITY | WESTERLY, RHODE ISLAND

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SCAPE ARCHITECTURE

August 2019

WHY WATCH HILL?

VOGUE



WHY WATCH HILL?

August 2019

VOGUE



WATCH HILL | WESTERLY, RHODE ISLAND

SENIOR STUDIO | INTEGRATED CAPSTONE

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LANDSCAPE ARCHITECTURE

WHY WATCH HILL?

August 2019

VOGUE



“**Watch Hill is undoubtedly one of New England’s coastal gems.** Historically developed to take optimal advantage of its **superb peninsular shore location**, its natural and historic fabric are assets to be treasured and preserved.”

- Capstone Project Statement

Integrated Capstone, 2020

WHY WATCH HILL?





Taylor Swift Sea Wall

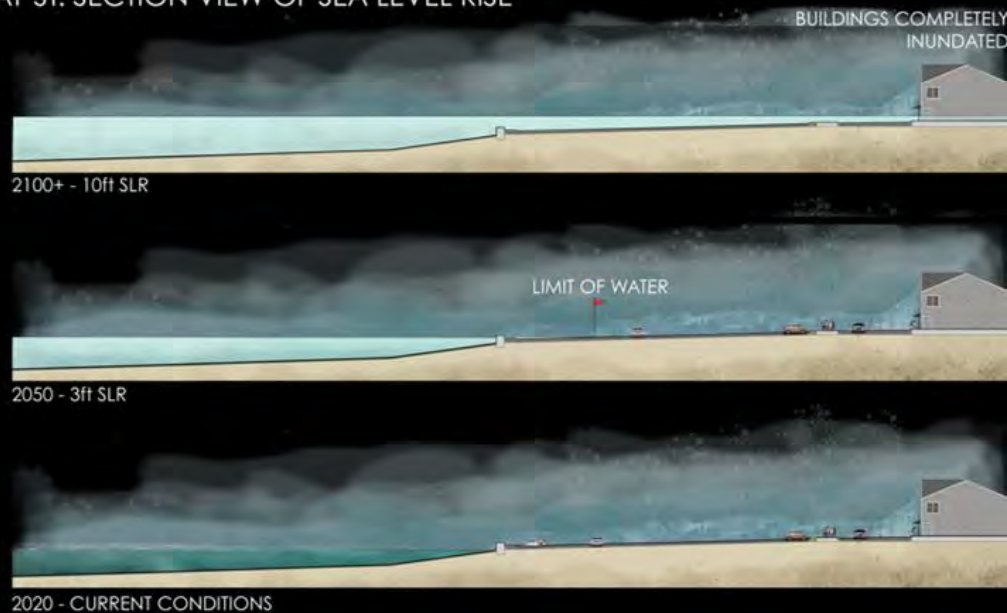
ANALYSIS

SEA LEVEL RISE BY YEAR



StormTools Online Imagery

BAY ST. SECTION VIEW OF SEA LEVEL RISE



A

A'

MEET **NATHAN SOCHA**, RLA ASLA



Class Collaboration



Local Perspective

ANALYSIS GROUPS

COMMERCIAL / RESIDENTIAL

HISTORICAL / CULTURAL

GREEN SPACES

INFRASTRUCTURE

HISTORIC CHARACTER

THE FLYING HORSE CAROUSEL

THE OCEAN HOUSE

CHIEF NINIGRET STATUE

HURRICANE 1938 MEMORIAL

GREEN SPACES

21.6% GREEN SPACE
within the bounds of the
Watch Hill Fire District

[THE NAPS]

Little Narragansett Bay

Watch Hill Cove

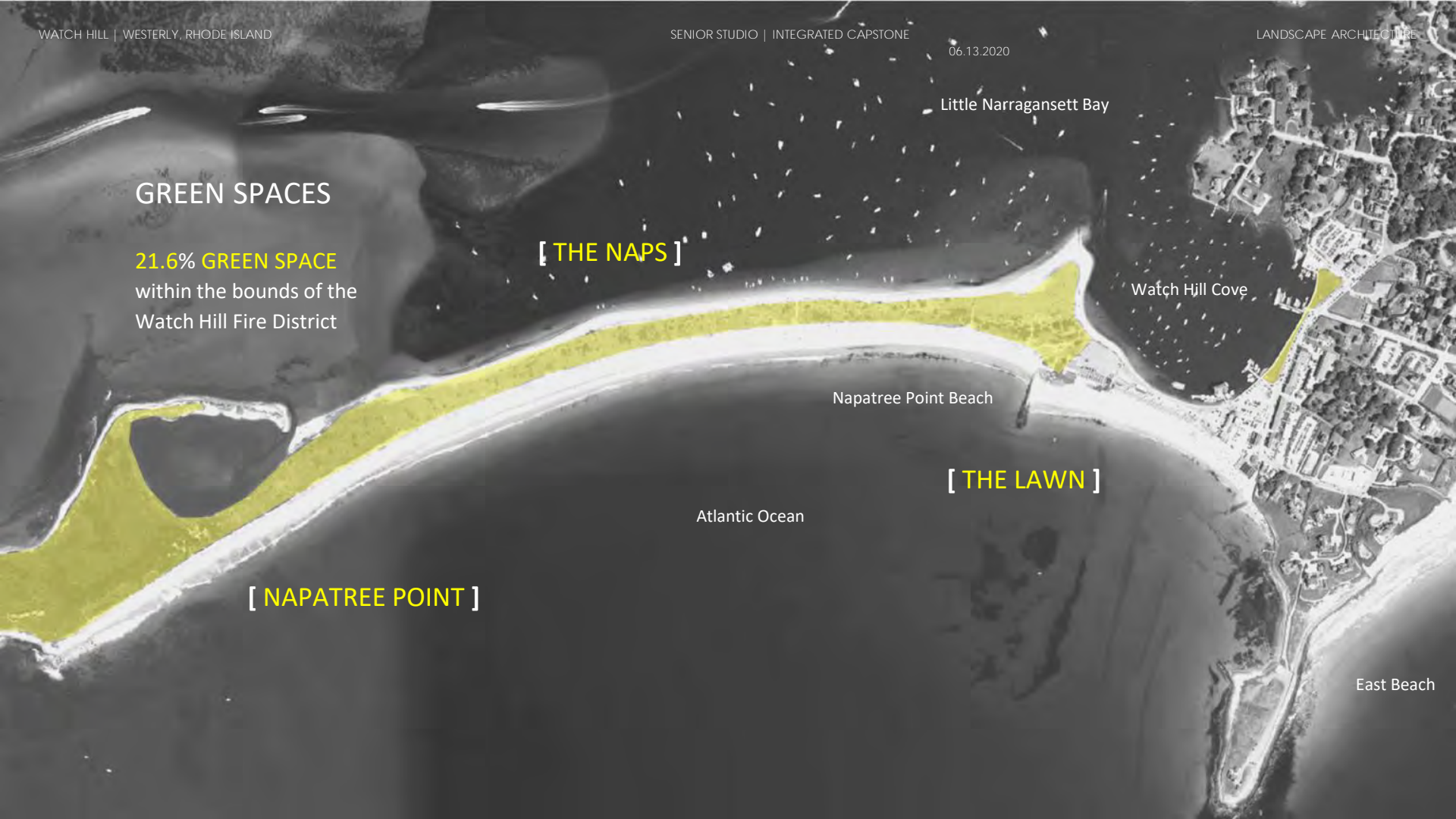
Napatree Point Beach

[THE LAWN]

Atlantic Ocean

[NAPATREE POINT]

East Beach



PLANNING FOR 3' OF SEA LEVEL RISE



Existing Sewer + Water Lines



Existing Parking Lots



Existing Pedestrian Nodes



Parking Lots Impacted



Parking Lots Impacted

PLANNING FOR 3' OF SEA LEVEL RISE



Building Structures Impacted



Access Roads Impacted



Infrastructure Elements of Concern

- Existing Buildings
- Vehicular access roads
- Pedestrian access paths
- Sewer + Water Systems
- Parking Lots
- Utility lines

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The Sea Wall

CONCEPTUALIZING

“**Watch Hill is undoubtedly one of New England’s coastal gems.** Historically developed to take optimal advantage of its **superb peninsular shore location**, its natural and historic fabric are assets to be treasured and preserved.”

- Capstone Project Statement

Integrated Capstone, 2020

CONCEPTUAL DRAWING

"What happens when nature pushes back against development?
Why are they seen as opposing forces rather than **two sides of the same coin**?"

RELOCATION

— **MADISON HOLLAND**

Senior, Landscape Architecture

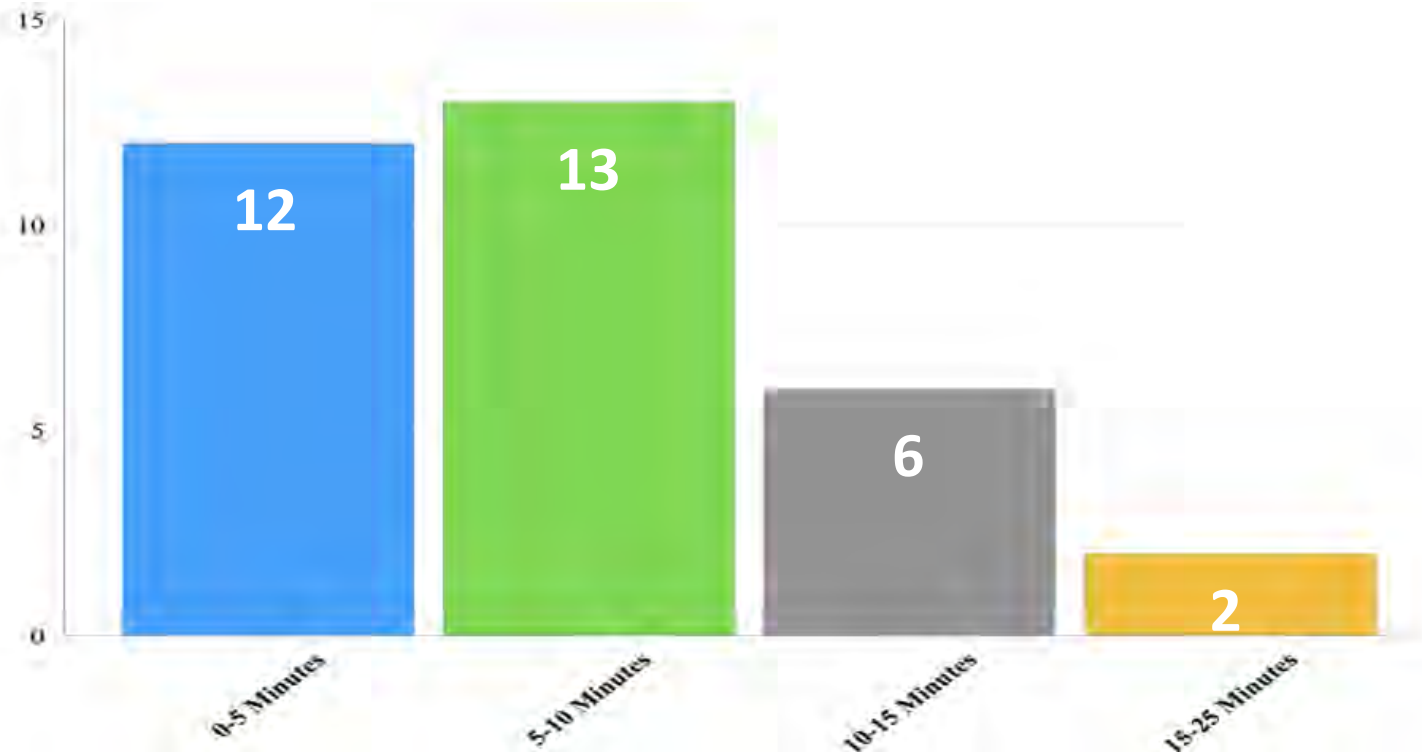
BIOSWALES

SEDIMENT
TRANSIT



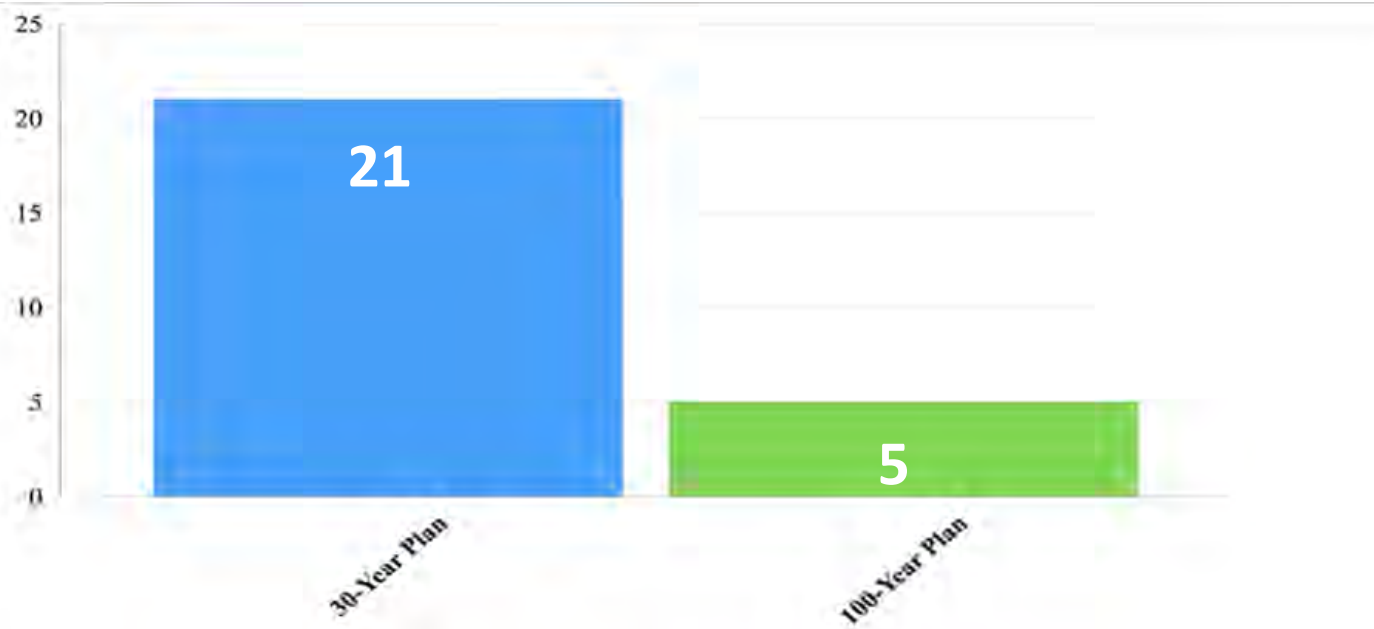
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Participants **Distance** From Watch Hill (in minutes)



30 YR vs. 100 YR Plan

Would you prefer a resiliency plan that spans...



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The Sea Wall

DESIGN PHASE

heavy development

medium development

low development

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VEHICULAR ACCESS

OFF-SITE, ON-SITE ACCESS + PARKING

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Satellite Parking m.holland

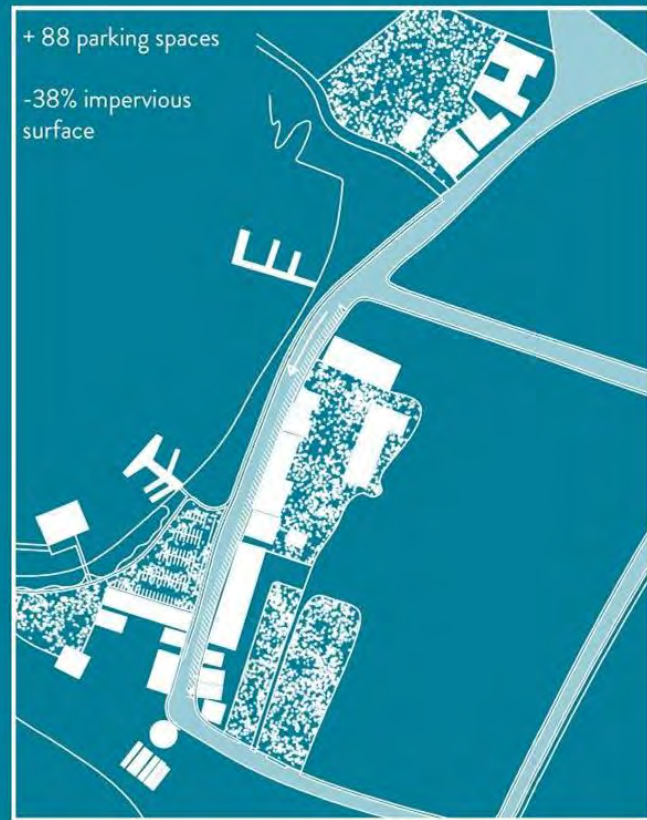
Alternate Transportation

Phase I



Bay Street Reconfiguration

Phase II



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Satellite parking m.donahoe



Representative Graphics
Busses + Cars = People

30 people per bus

Golf Club to Bay St (1 bus) - 5 minutes

Westerly Airport to Bay St (2 buses) - 8 minutes

Westerly Marina to Bay St (2 buses) - 11 minutes

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PARKING | EXISTING

548



PARKING | PROPOSED s.beebe

506

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PARKING LOTS | EXISTING

548



PARKING LOTS

PROPOSED j.lefebvre

300

heavy development



PARKING | EXISTING

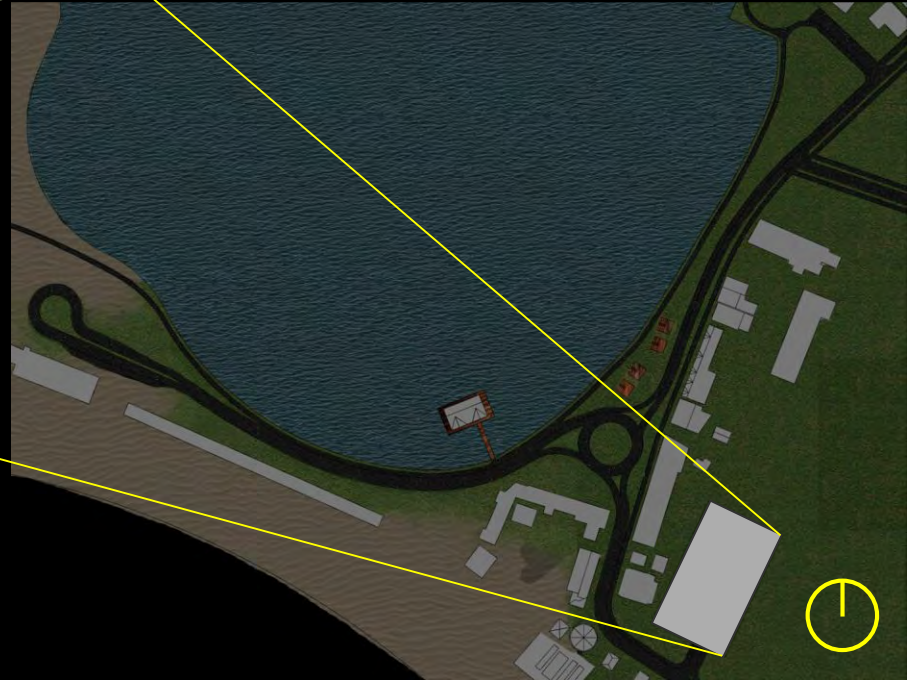


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PARKING | PROPOSED c.sullivan



300 Capacity
Parking Garage



heavy development



PARKING | ROOFTOP GARDEN c.sullivan



VEHICULAR ACCESS | BEFORE



VEHICULAR ACCESS | AFTER c.sullivan



VEHICULAR PATH

PERMEABLE PAVING

PEDESTRIAN/ BIKE
PATH

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PEDESTRIAN CONNECTIVITY

EXPLORING, LEARNING + PROTECTING

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CONNECTIONS | EXISTING



CONNECTIONS | PROPOSED s.beebe

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CONNECTIONS s.beebe

ENHANCED BOARDWALK

"GREAT BARRIER SEATS"

medium development



p.pasco CONNECTIONS

Increase to 3.5 acres of green space

Give visitors more space to roam away from vehicles

Increase Plant biodiversity

Space for future farmers markets, gatherings, events, and activities

Accessible to all people

Area for education, tours, outdoor classes

p.pasco **CONNECTIONS**



CONNECTIONS | EXISTING



CONNECTIONS

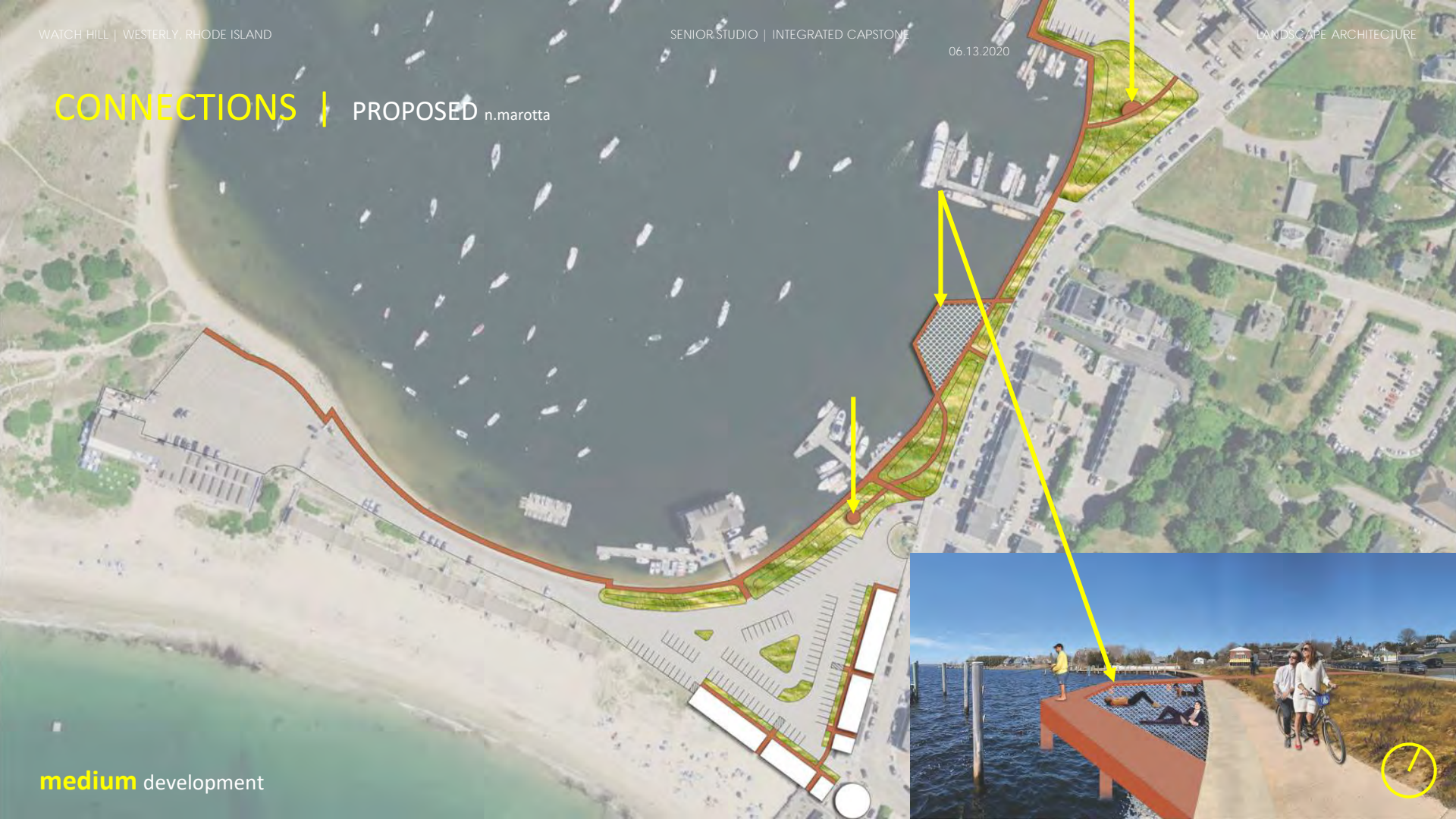
PROPOSED j.lefebvre

2,250 LN FT

medium development



CONNECTIONS | PROPOSED n.marotta



CONNECTIONS s.pilotte

CONNECTING VEHICLE, PEDESTRIANS, ECOLOGY, AND
INFRASTRUCTURE



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CONNECTIONS | EXISTING



CONNECTIONS | PROPOSED i.thounsavath





ECOLOGICAL REVITALIZATION

NATIVE VEGETATION, HABITAT RESTORATION + EDUCATION

WATCH HILL | WESTERLY, RHODE ISLAND

SENIOR STUDIO | INTEGRATED CAPSTONE

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LANDSCAPE ARCHITECTURE

REVITALIZATIONS | HABITAT RESTORATION

k.lawless

LIVING SHORELINE

low development

WATCH HILL | WESTERLY, RHODE ISLAND

SENIOR STUDIO | INTEGRATED CAPSTONE

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LANDSCAPE ARCHITECTURE

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REVITALIZATIONS | HABITAT RESTORATION k.lawless

LIVING SHORELINE

low development

WATCH HILL | WESTERLY, RHODE ISLAND

SENIOR STUDIO | INTEGRATED CAPSTONE

LANDSCAPE ARCHITECTURE

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REVITALIZATIONS | HABITAT RESTORATION k.lawless

LIVING SHORELINE

low development

REVITALIZATIONS | NATIVE VEGETATION k.lawless

Shrubs and Groundcovers

- [Beach Heather](#) (*Hudsonia tomentosa*) (native)
 - [Beach Plum](#) (*Prunus maritima*) (native)
 - [Bearberry](#) (*Arctostaphylos uva-ursi*) (native)
 - [Common Juniper](#) (*Juniperus communis*) (native)
 - [Marsh Elder](#) (*Iva frutescens*) (native)
 - [Northern Bayberry](#) (*Myrica pensylvanica*) (native)
 - [Sweet Fern](#) (*Comptonia peregrina*) (native)
-

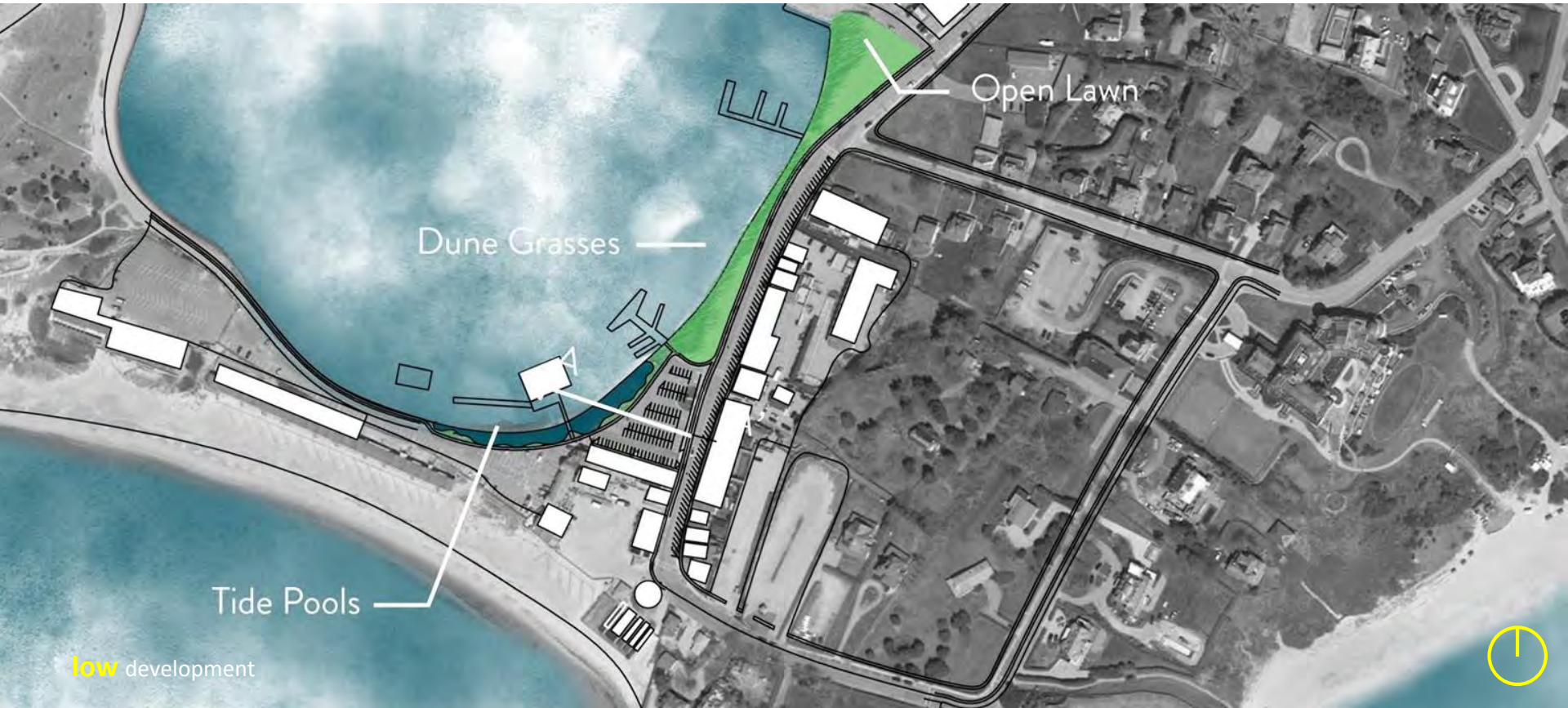
Grasses, Perennials, and Vines

- [American Beachgrass](#) (*Ammophila breviligulata*) (native)
 - [Saltmeadow Cordgrass](#) (*Spartina patens*) (native)
 - [Seaside Goldenrod](#) (*Solidago sempervirens*) (native)
 - [Switchgrass](#) (*Panicum virgatum*) (native)
-

REVITALIZATIONS | HABITAT RESTORATION k.alamo

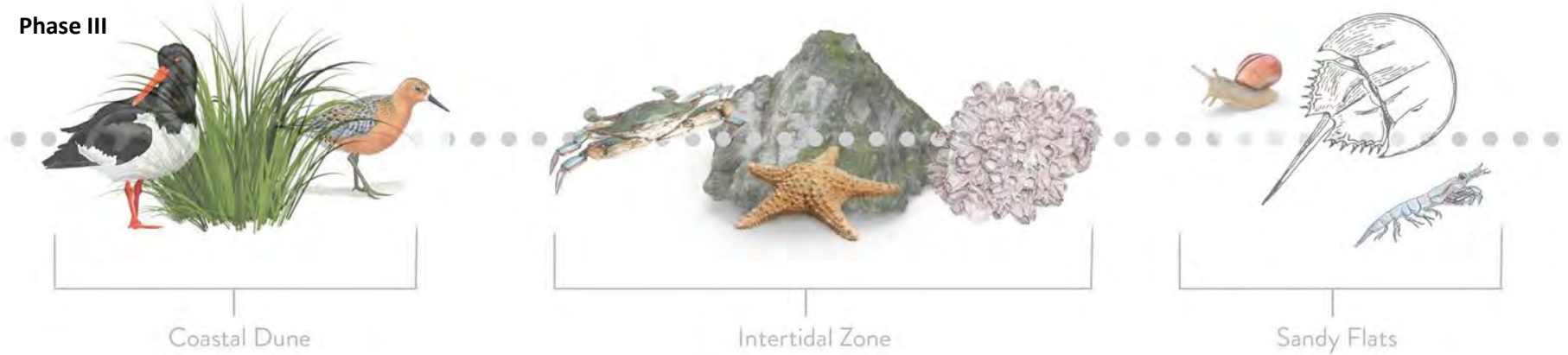


REVITALIZATIONS | HABITAT RESTORATION m.holland



REVITALIZATIONS | TIDE POOL IMPLEMENTATION m.holland

Phase III



- Utilizes existing **INFRASTRUCTURE**
- Increases **BIODIVERSITY** and supports existing **ECOLOGY**
- Encourages **EXPLORATION** and **DISCOVERY**

low development

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REVITALIZATIONS | HABITAT RESTORATION AND EDUCATION m.holland



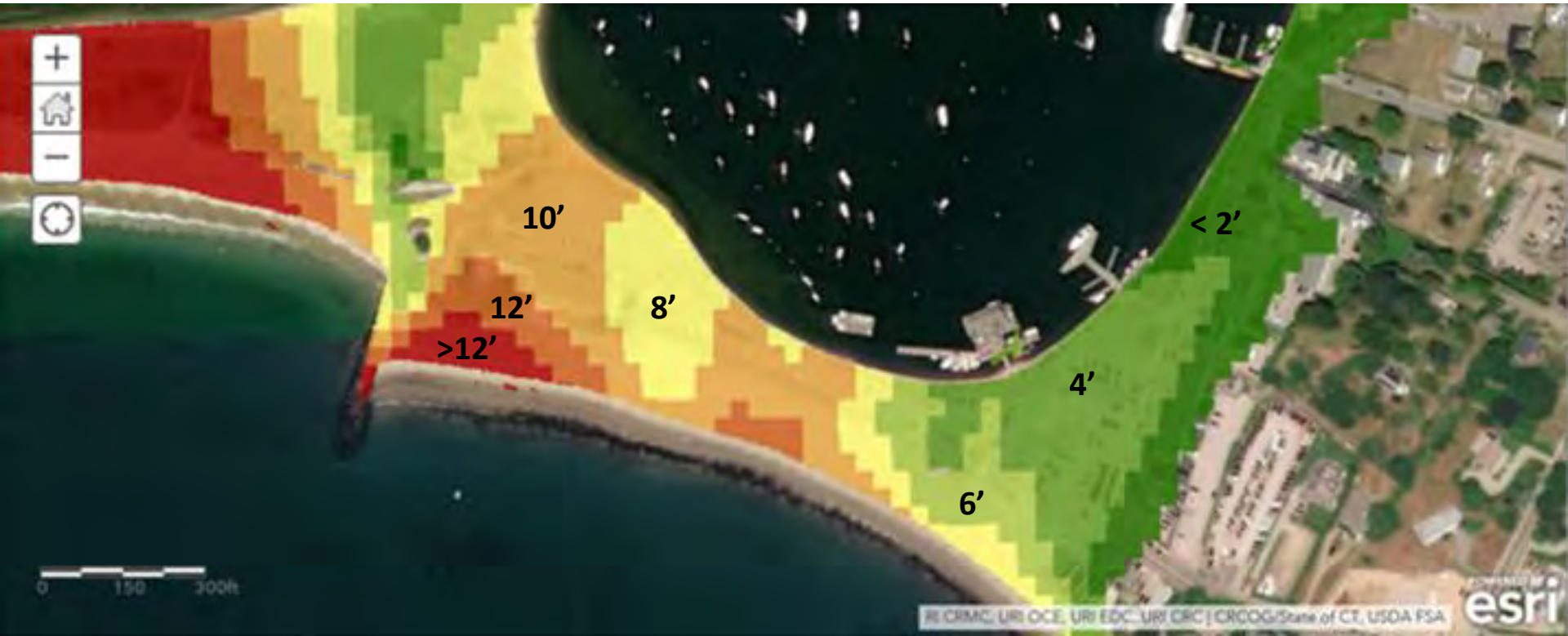


GREEN INFRASTRUCTURE

COMBINING INFRASTRUCTURE into NATURE

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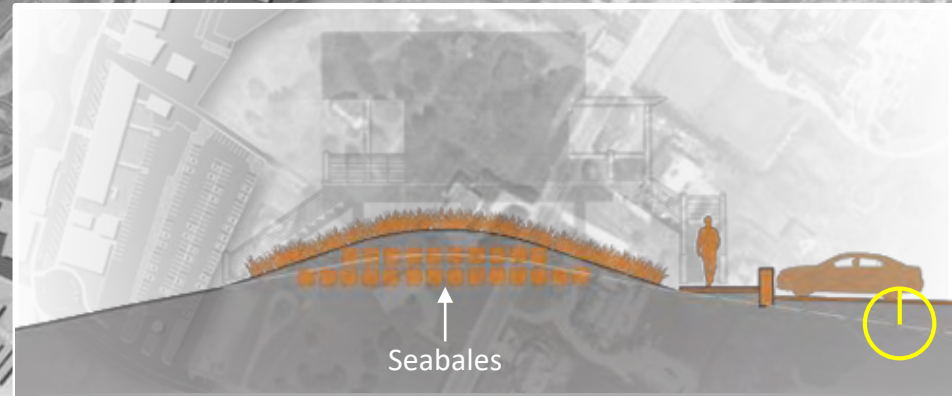
CREST ELEVATION | SOUTH SHORE 100YR 0'SLR



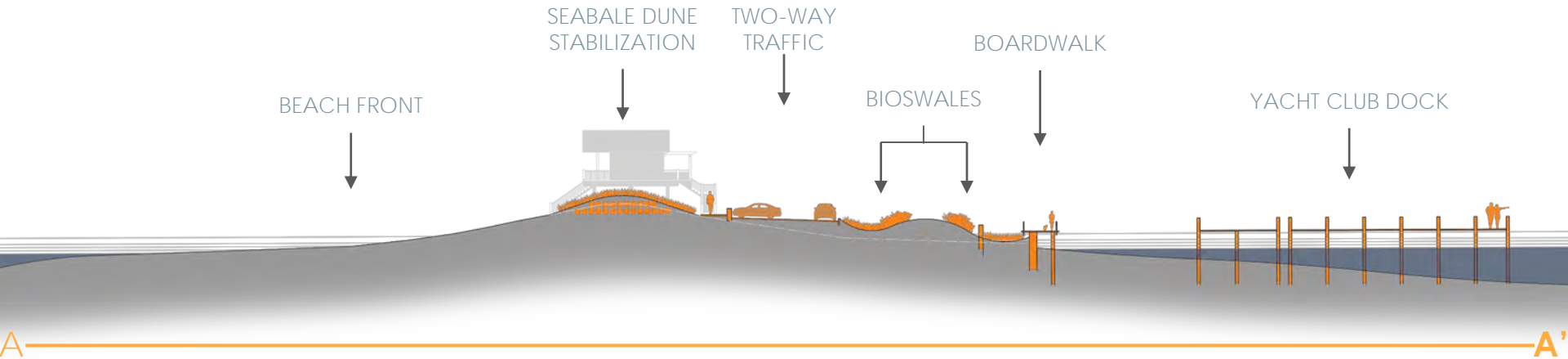
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GREEN INFRASTRUCTURE | BIOSWALES s.beebe

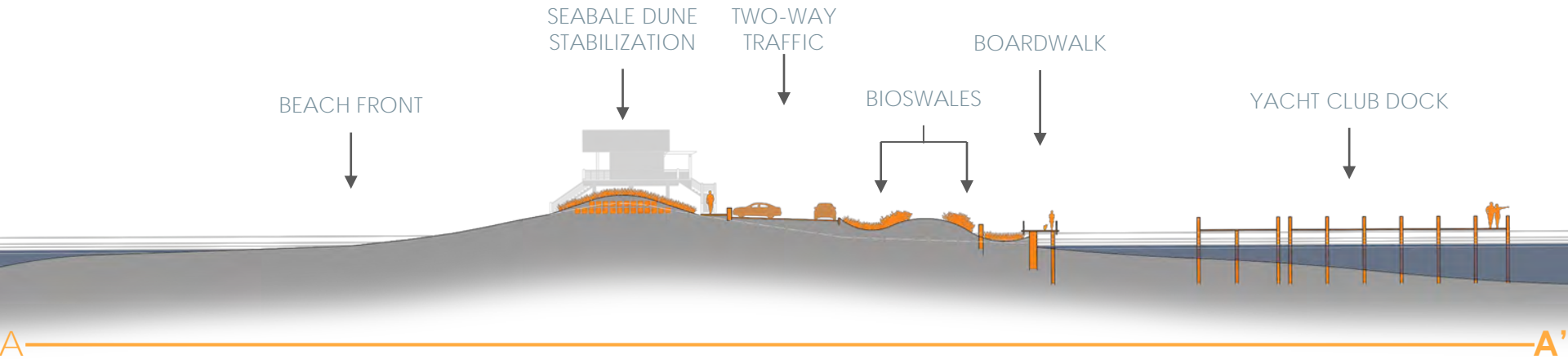
medium development



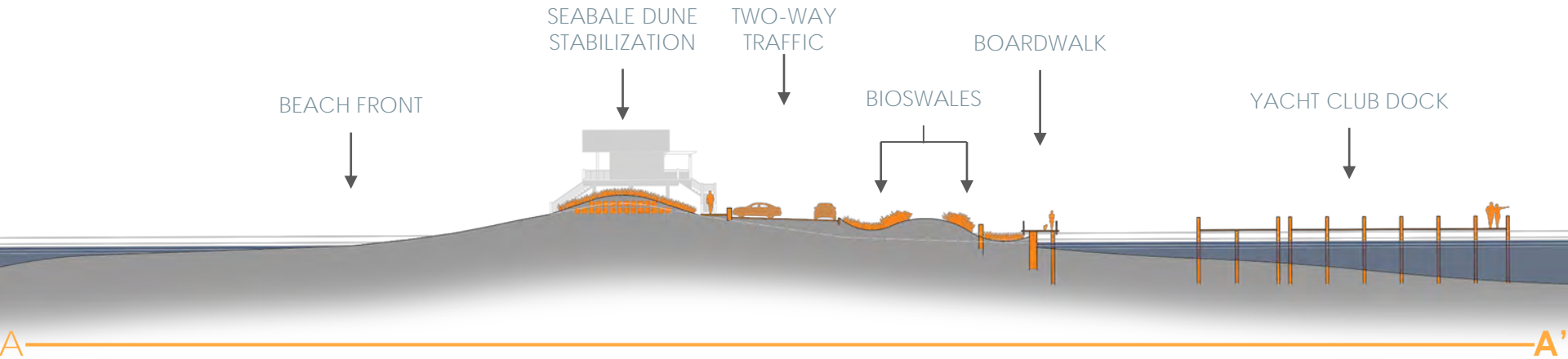
0' SEA LEVEL RISE



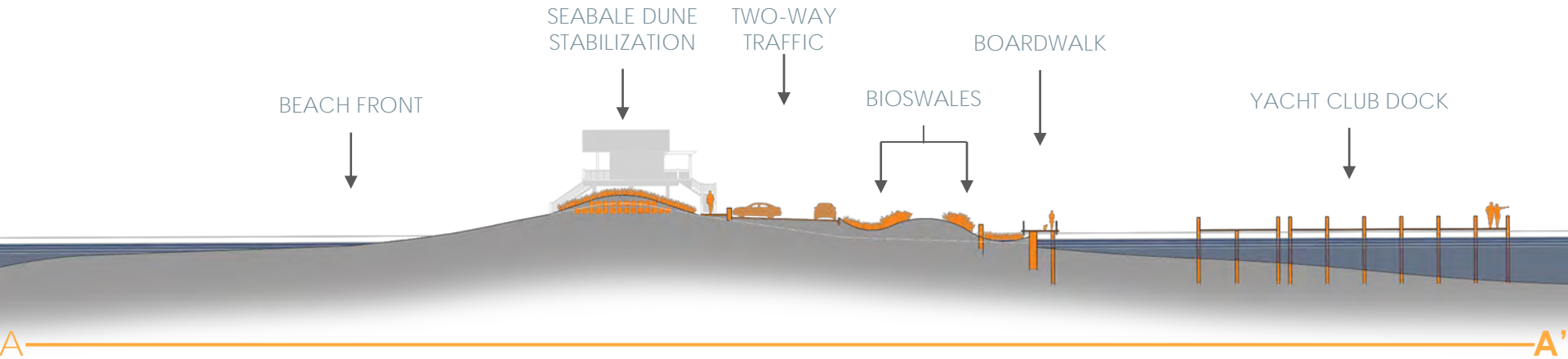
1' SEA LEVEL RISE



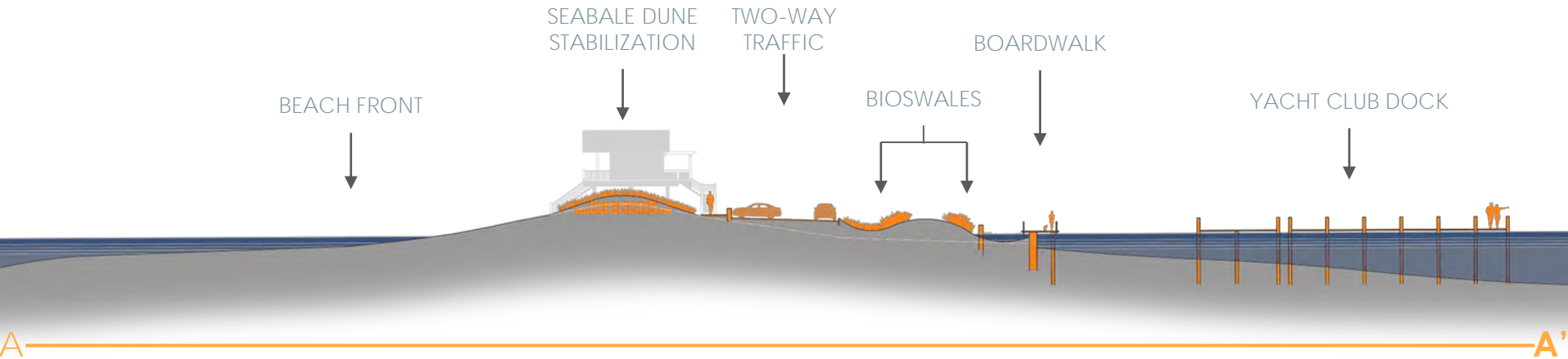
2' SEA LEVEL RISE



3' SEA LEVEL RISE



5' SEA LEVEL RISE



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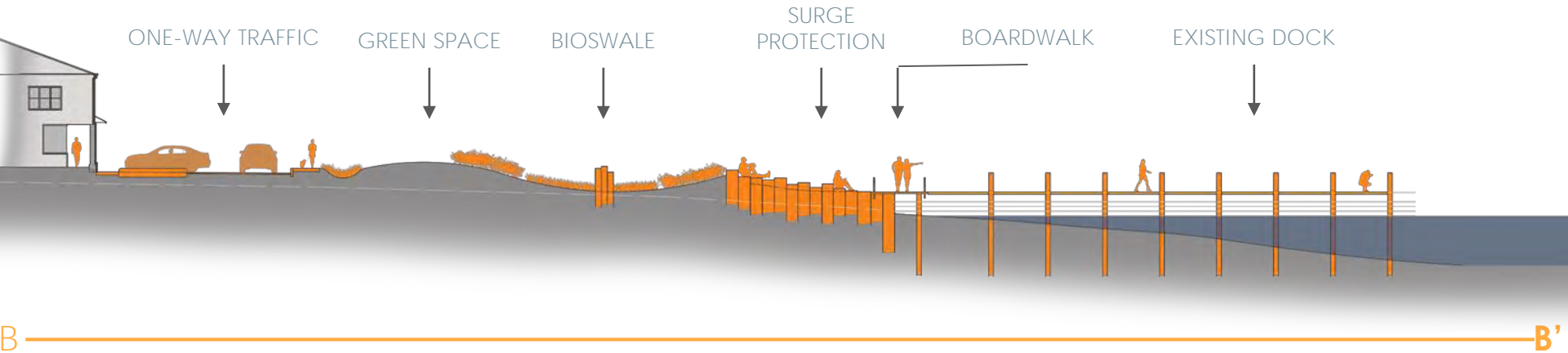
GREEN INFRASTRUCTURE | BIOSWALES s.beebe

B'

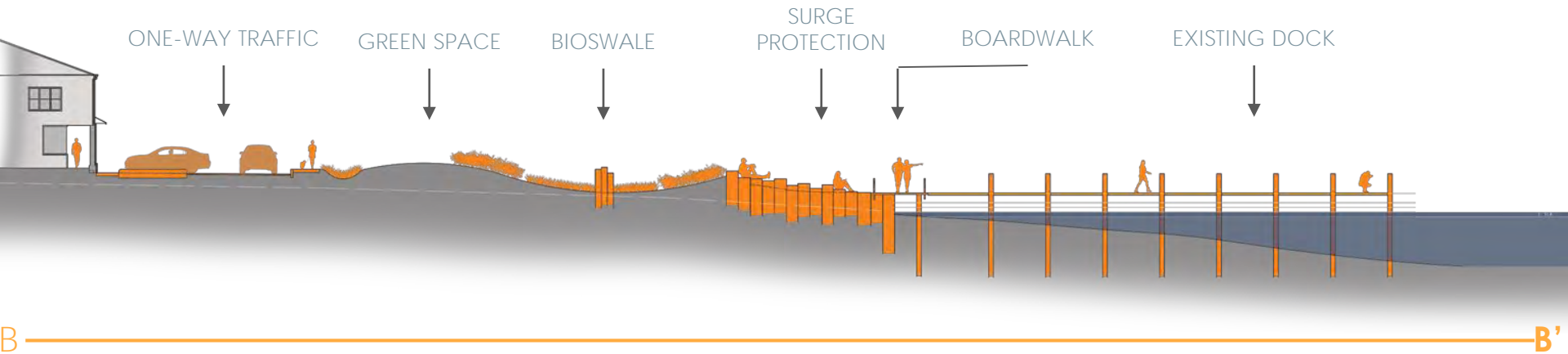
B



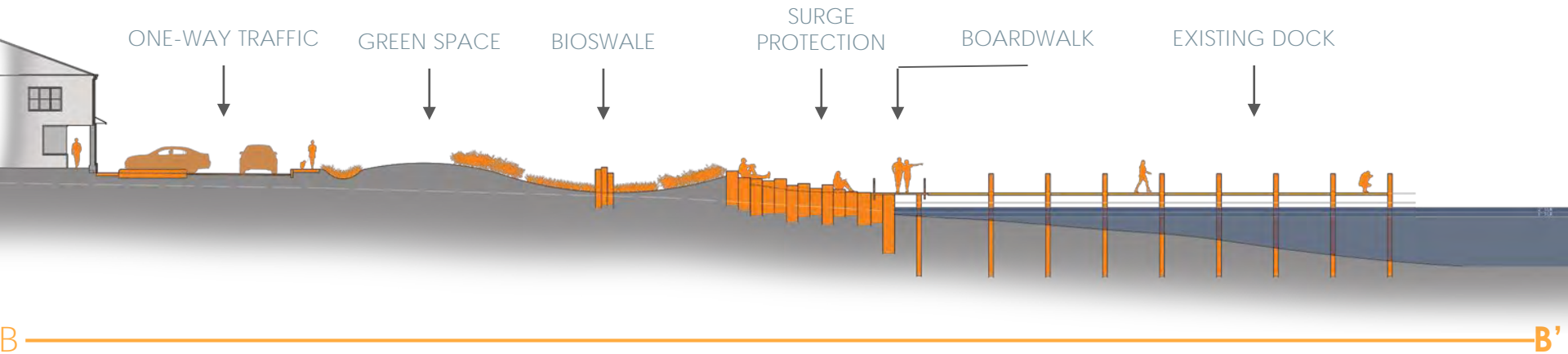
0' SEA LEVEL RISE



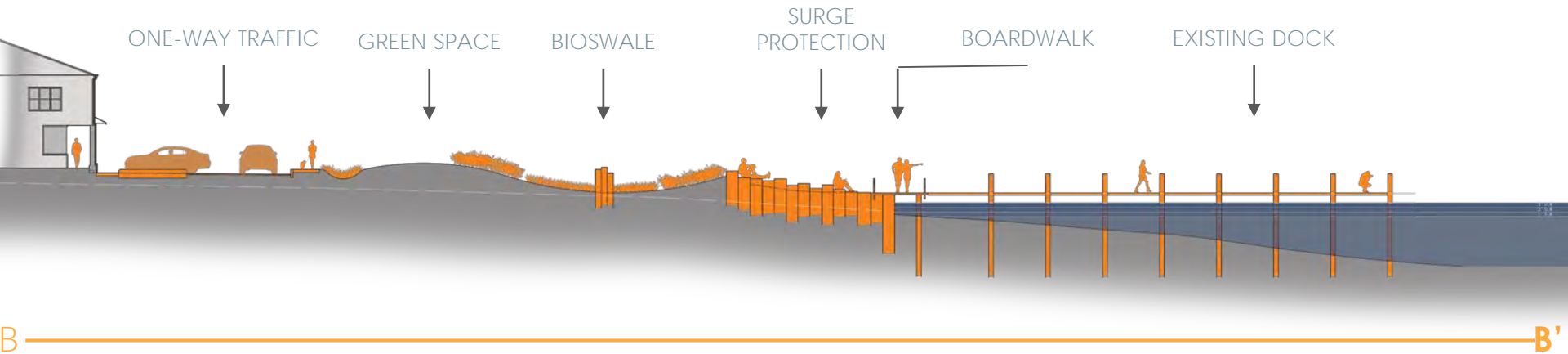
1' SEA LEVEL RISE



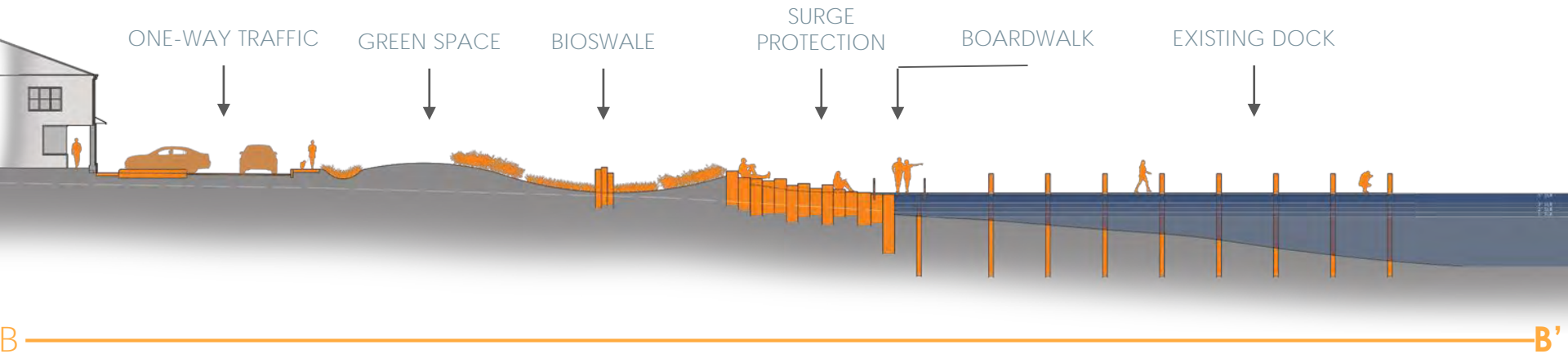
2' SEA LEVEL RISE



3' SEA LEVEL RISE

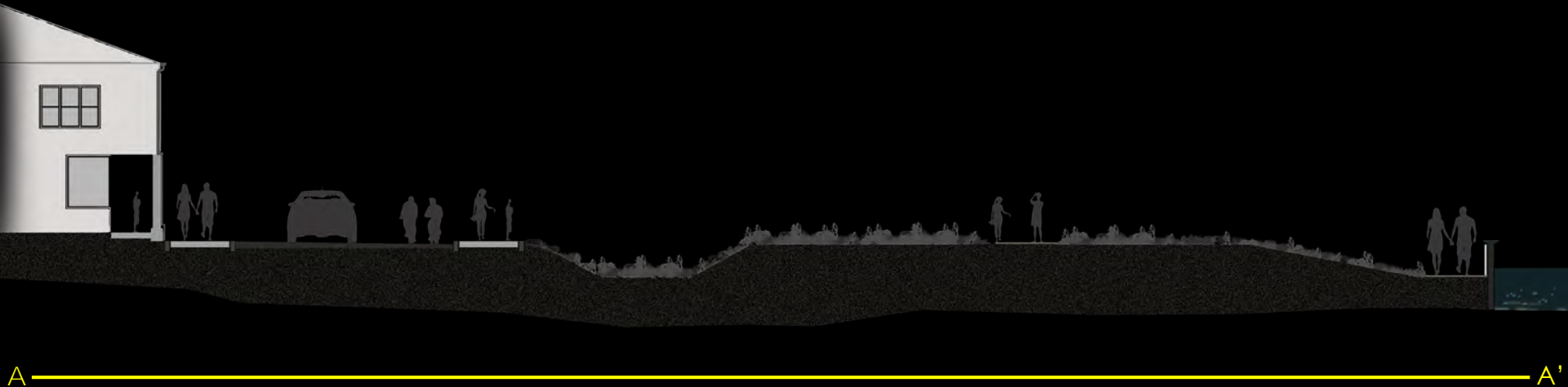


5' SEA LEVEL RISE

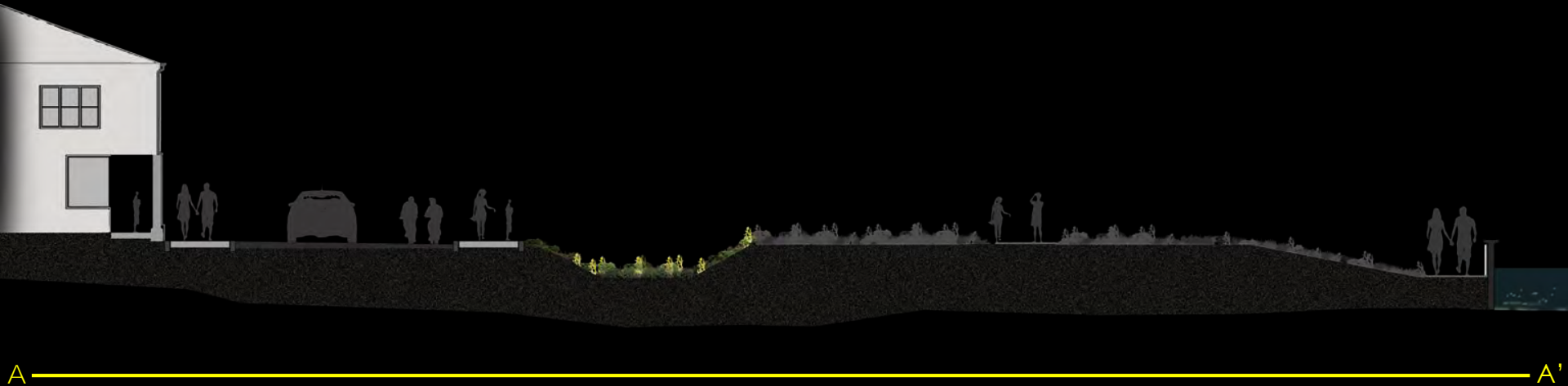


GREEN INFRASTRUCTURE | BIOSWALE + BERM j.lefebvre



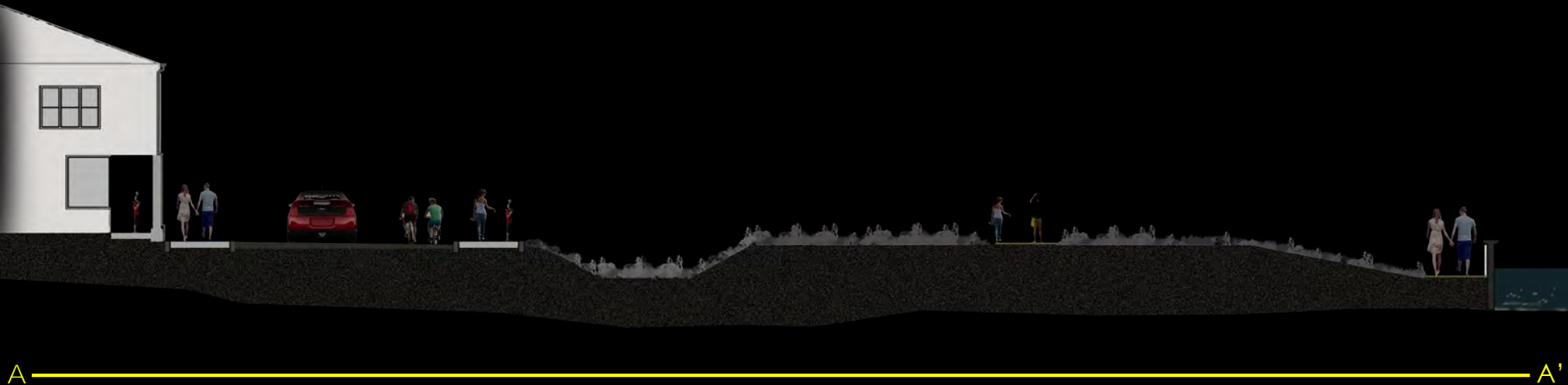


BIOSWALES



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PEDESTRIAN WALKWAYS



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SEA WALL + BERM



GREEN INFRASTRUCTURE | VEGETATED BERM c.sullivan



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GREEN INFRASTRUCTURE | VEGETATED BERM c.sullivan



0' SEA LEVEL RISE

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GREEN INFRASTRUCTURE | VEGETATED BERM c.sullivan



6' SEA LEVEL RISE

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GREEN INFRASTRUCTURE | VEGETATED BERM m.donahoe



GREEN INFRASTRUCTURE

RAISED BERM WALK r.rodriques



GREEN INFRASTRUCTURE | DUNES k.leon

PARKING
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WATCH HILL
COVE

PARKING

HARBOUR

WATCH HILL

COMMERCIAL DISTRICT

CABANAS

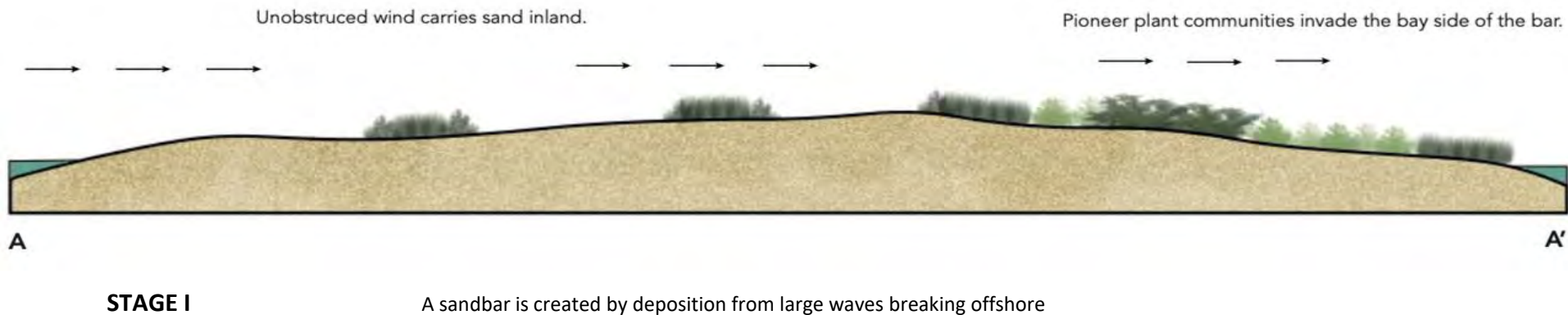
DUNES

PARKING

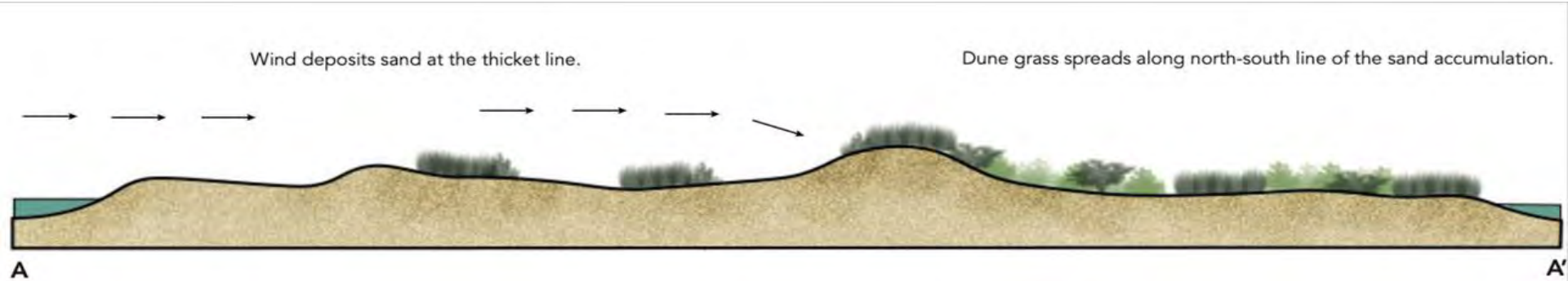
MERRY-GO-ROUND



GREEN INFRASTRUCTURE | DUNE SUCCESSION k.leon



GREEN INFRASTRUCTURE | DUNE SUCCESSION k.leon

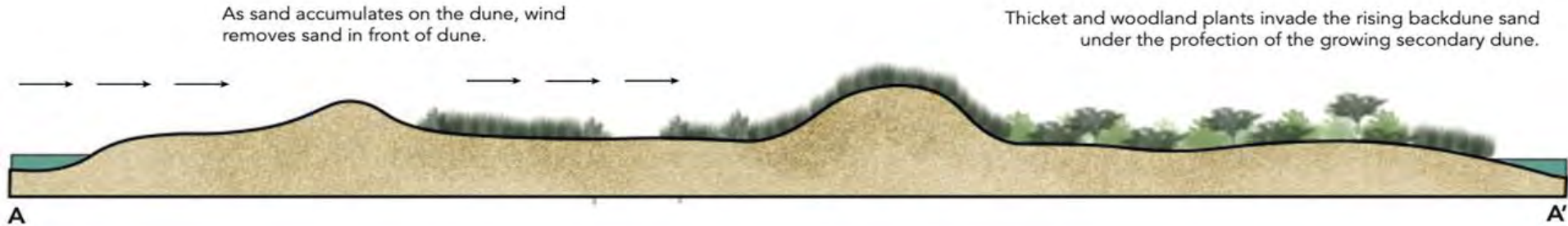


STAGE II

Dune formation beings at thicket line with deposition of windblown sand

medium development

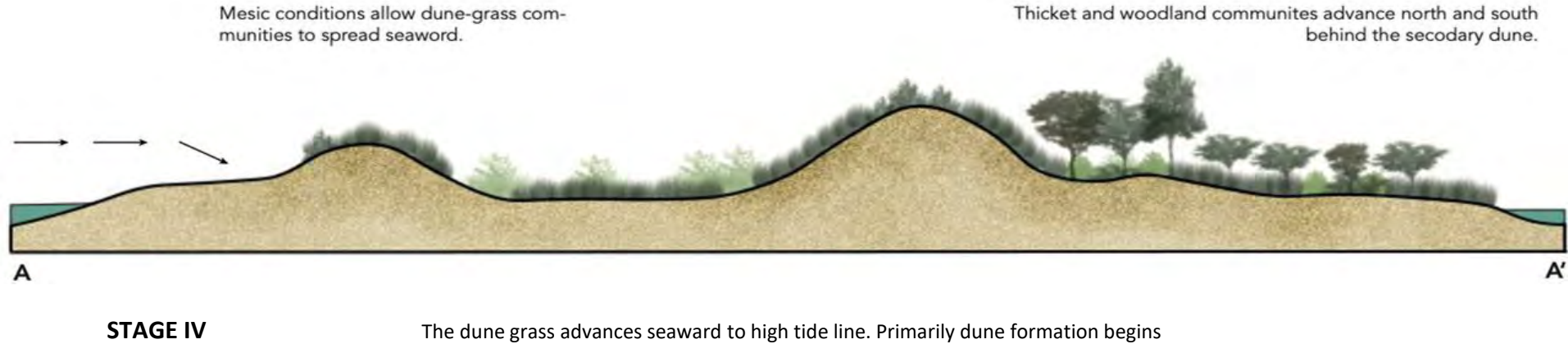
GREEN INFRASTRUCTURE | DUNE SUCCESSION k.leon



STAGE III

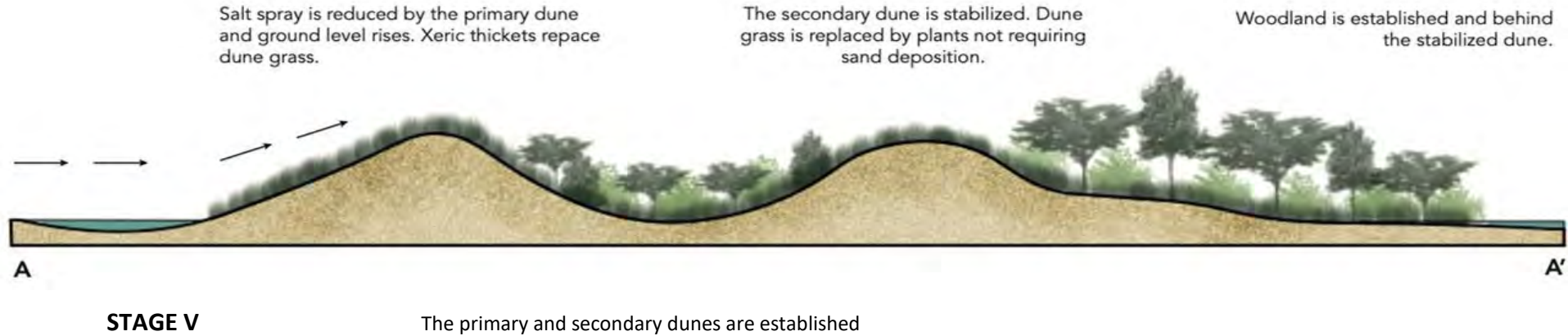
Secondary dune formation begins as the dunegrass community is established

GREEN INFRASTRUCTURE | DUNE SUCCESSION k.leon



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GREEN INFRASTRUCTURE | DUNE SUCCESSION k.leon



GREEN INFRASTRUCTURE

ARTIFICIAL DUNES a.walsh



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GREEN INFRASTRUCTURE | ARTIFICIAL DUNES a.walsh



A

A'

medium development

GREEN INFRASTRUCTURE | ARTIFICIAL DUNES a.walsh



B

B'

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GREEN INFRASTRUCTURE | ARTIFICIAL DUNES a.walsh



C

C'

medium development

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GREEN INFRASTRUCTURE | ARTIFICIAL DUNES a.walsh





BIOMIMICRY

MODELING BIOLOGICAL ENTITIES AND PROCESSES

**“One of the most important places and rest
areas, globally, for bird migration.”**

**CIVIL ENGINEERING and OCEAN ENGINEERING ENVIRONMENTAL and
NATURAL RESOURCE ECONOMICS**

at the Mid-Semester Review on March 4, 2020

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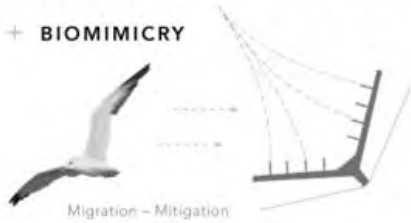
ALA — TECTURE

latin root for '*wing*'

derivative of landscape architecture

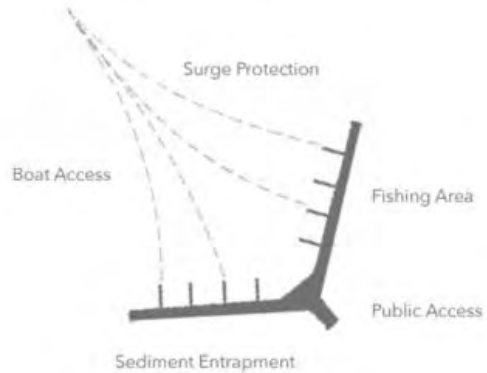
ALATECTURE

+ BIOMIMICRY



WING JETTIES

Public Access, Sediment Entrapment
New Dimensional Sea Wall





WATCH HILL | WESTERLY, RHODE ISLAND

SENIOR STUDIO | INTEGRATED CAPSTONE

LANDSCAPE ARCHITECTURE

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HEAVY INFRASTRUCTURE

RE-LOCATING + BUILDING UP

BUILDINGS | EXISTING



BUILDINGS | PROPOSED j.lefebvre

heavy development



WATCH HILL | WESTERLY, RHODE ISLAND

SENIOR STUDIO | INTEGRATED CAPSTONE

LANDSCAPE ARCHITECTURE

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BUILDINGS | EXISTING



BUILDINGS | PROPOSED s.beebe

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BUILDINGS | PROPOSED n.marotta

heavy development



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ARMORED FORTRESS | RAISED SITE ELEVATION p.pasco



18' Sea wall stopping waves from both the west and the southwest

15' fill, making the entire area level with the 15' contour line

Keep Bay st. and its buildings in place, making space for over 300 parking spots for tourists and locals

STRUCTURES | SEASONAL HUTS c.sullivan



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FLOATING ISLAND | DEPLOYABLE STORM SURGE MITIGATION n.marotta

CREATIVITY IN COASTAL RESILIENCE



FLOATING ISLAND TO BE HOUSED IN THE MARSH UNTIL NEEDED FOR PROTECTION

PROPOSED FLOATING ISLAND ACTS AS STORM SURGE MITIGATION TO REDUCE FLOODING

EXISTING BARRIER HELPS TO MITIGATE WAVE VELOCITY IN THE VILLAGE

heavy development

CONCEPTS INCLUDED:

- RECYCLED PLASTIC
- REPURPOSED BARGES

THE FIRST LINE OF DEFENSE IN THIS PROPOSAL IS THE IMPLEMENTATION OF A DEPLOYABLE BARRIER ISLAND TO BE TOWED TO THE WATCH HILL COVE OPENING JUST PRIOR TO A MAJOR STORM EVENT. THE ISLAND ITSELF IS BUOYANT THANKS TO THE RECOVERED OCEAN PLASTICS THAT FORM THE BASE, AND IS TOPPED WITH NATIVE VEGETATION TO AID IN HABITAT RESTORATION.

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QUESTIONS? COMMENTS?

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