

TOTTENVILLE SHORELINE PROTECTION PROJECT

PROJECT LOCATION: STATEN ISLAND, NY

**TOTAL PROJECT ACREAGE: 23.8 ACRES
TOTAL BEACH FRONT: 5,700 LINEAR FEET**

PDC PRELIMINARY REVIEW: APRIL 19TH, 2019

PDC FINAL REVIEW: JANUARY 22ND, 2020

DESIGN: GOSR/STANTEC

PROCUREMENT/CONSTRUCTION: NYC PARKS



DASNY



**Governor's Office of
Storm Recovery**



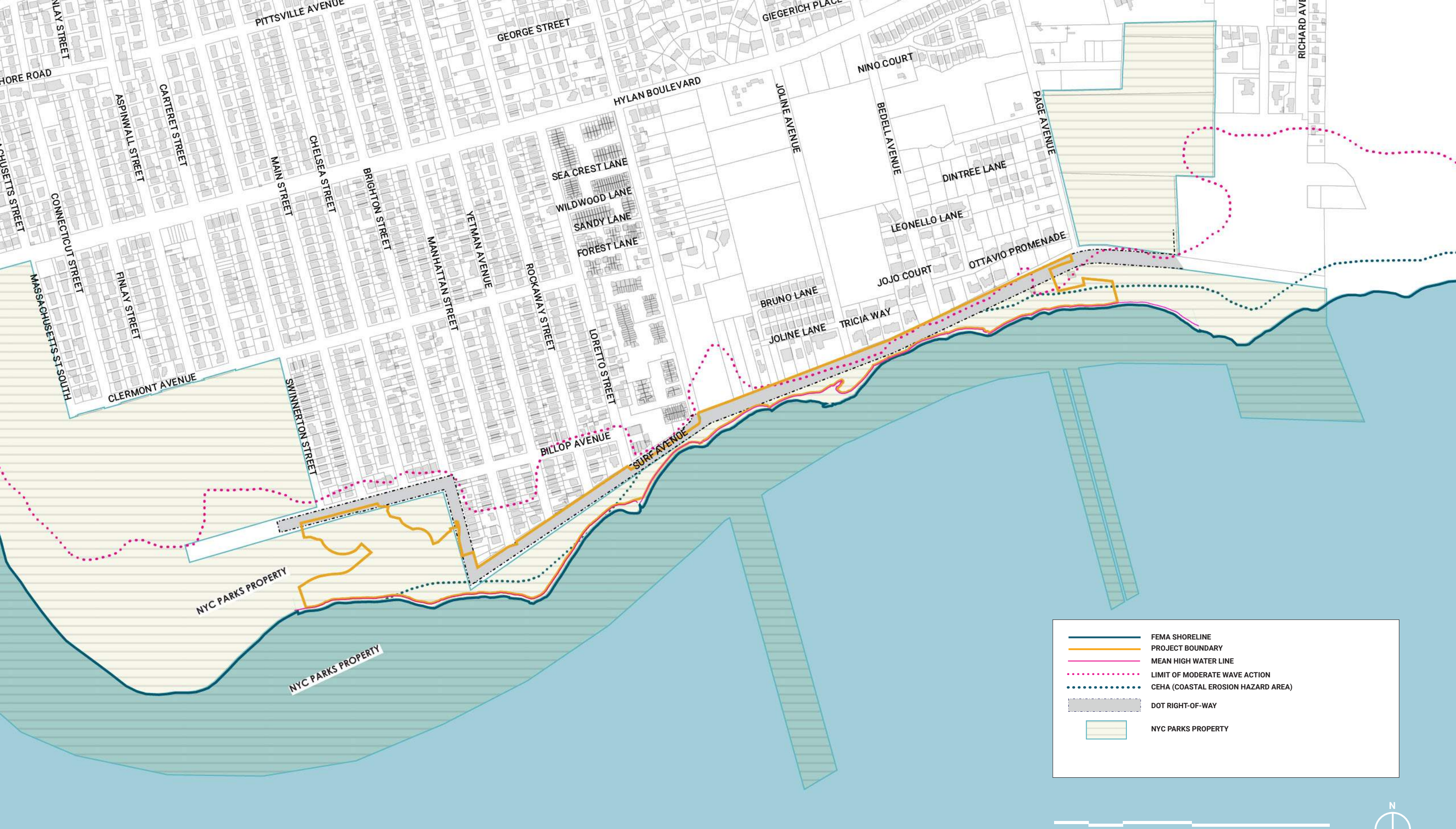
NYC Parks



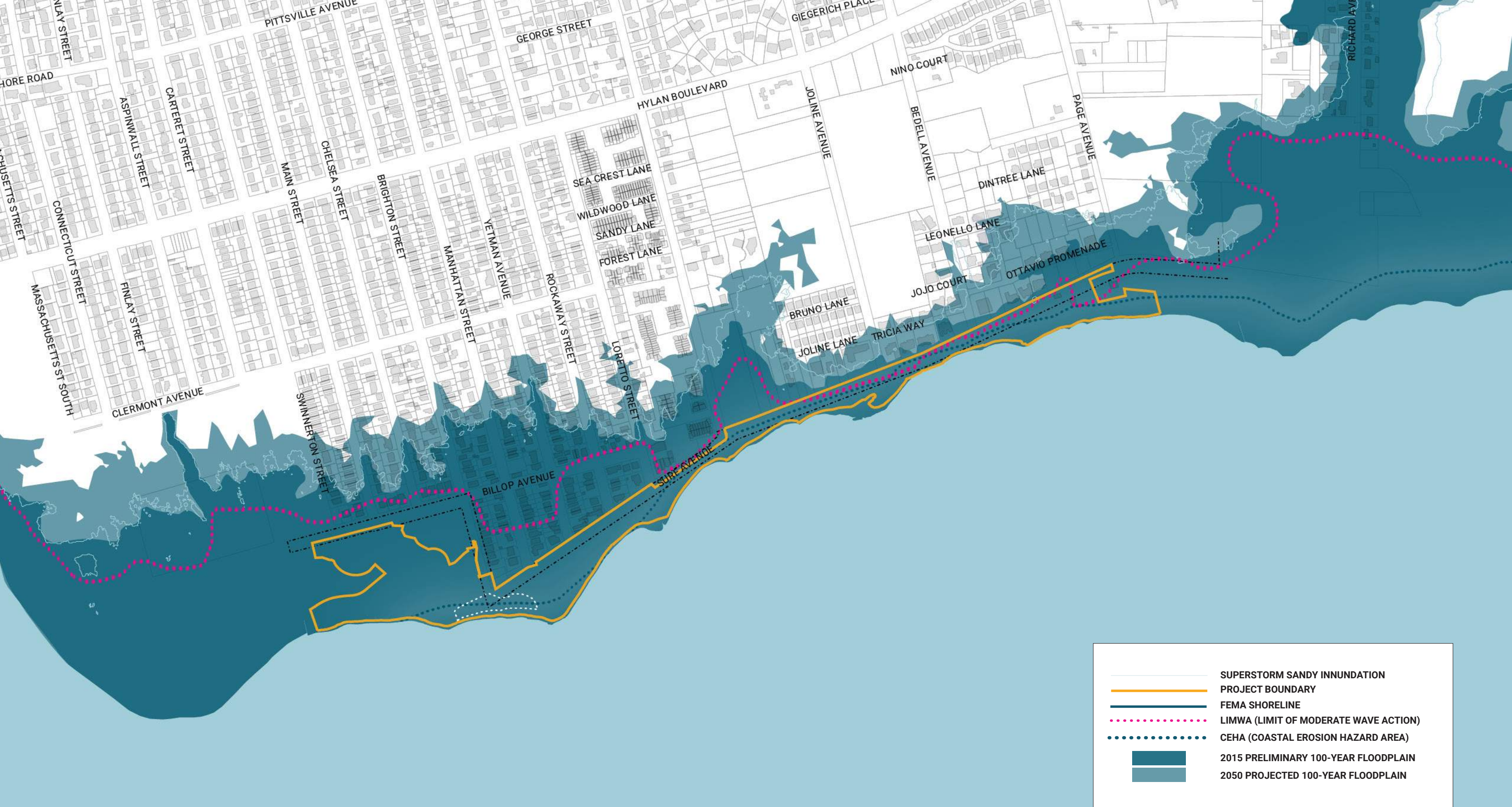
SITE CONTEXT | PROJECT LOCATION



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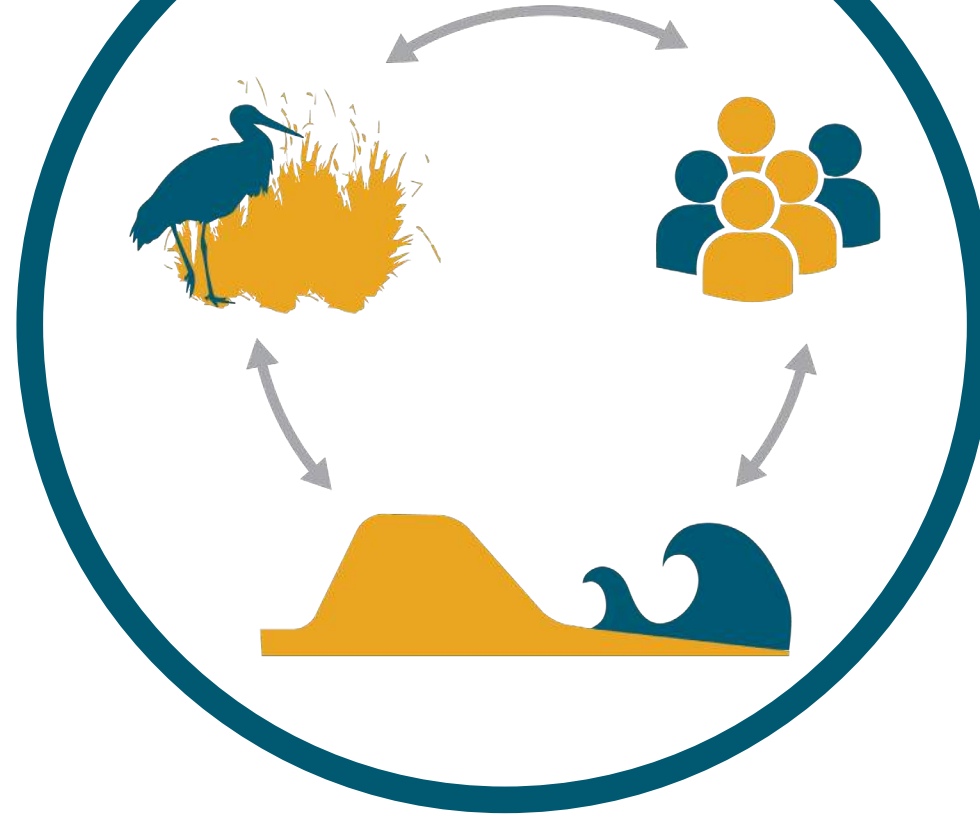


SITE CONTEXT / EXISTING PROPERTY OWNERSHIP



SITE CONTEXT | EXISTING COASTAL HAZARDS

TSPP PROJECT GOALS



ECOLOGICAL ENHANCEMENT:

Habitat Enhancement // Green Infrastructure

METHODS:

WETLAND RESTORATION
NATIVE SHORELINE PLANTINGS

SOCIAL RESILIENCY:

Increase Physical and Visual Access to the Water's Edge //
Enhance Community Stewardship // Increase Access

METHODS:

Continuous Trail Systems
ADA Compliant Designs
Opportunities for Ecological Education

RISK REDUCTION:

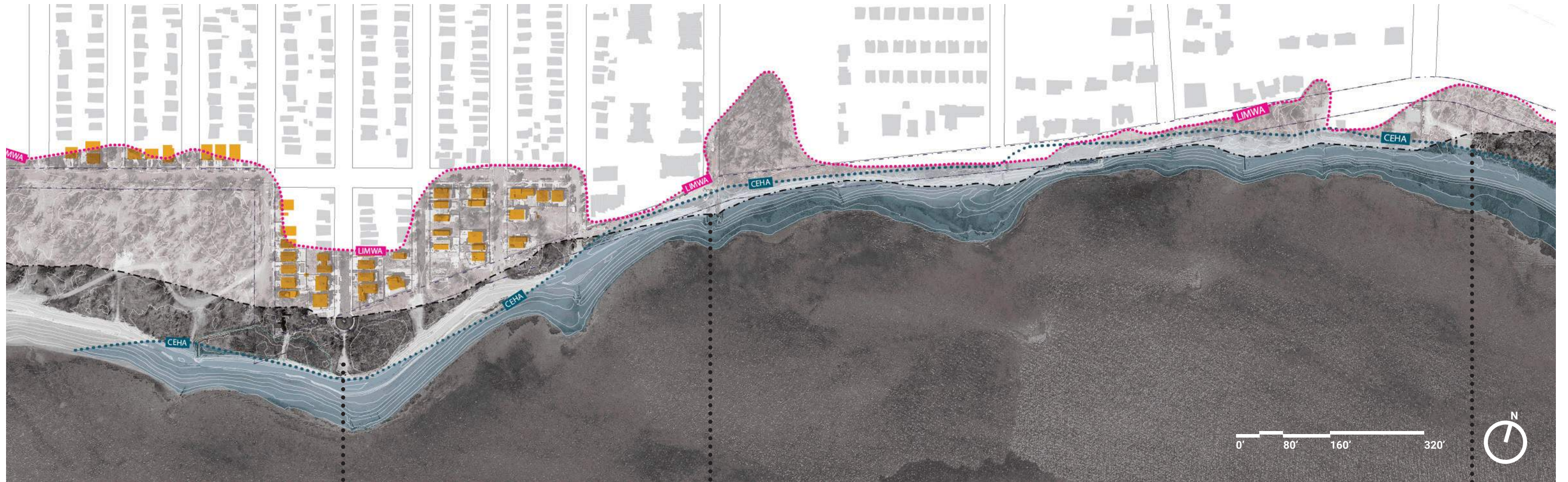
Attenuate Wave Energy // Address Shoreline Erosion //
Address Impacts of Coastal Flooding (will not prevent flooding)

METHODS:

Raise Shorelines

- Design Event: 25-year with Sea Level Rise (SLR)
- Design Objective: Wave height to be less than 1.5' when they reach adjacent properties

OVERALL DESIGN / PROJECT GOALS



RISKS

ZONE 1:

- STRUCTURES WITHIN COASTAL AE ZONE
- SIGNIFICANT HISTORIC SHORELINE EROSION
- SIGNIFICANT RISK FOR WAVE ACTION
- DEGRADED TIDAL WETLAND

ZONE 2:

- STRUCTURES IN VE ZONE
- STRUCTURES AND INFRASTRUCTURE WITHIN COASTAL AE ZONE
- SIGNIFICANT HISTORIC SHORELINE EROSION
- SIGNIFICANT RISK FOR WAVE ACTION

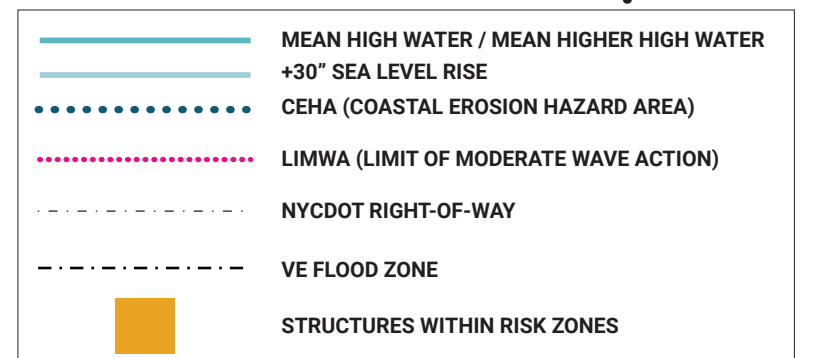
ZONE 3:

- SIGNIFICANT HISTORIC SHORELINE EROSION

ACTIONS

- TARGET WAVE ACTION AND EVENT BASED EROSION
- REDUCE WAVE HEIGHT TO < 1.5' PRIOR TO RESIDENTIAL STRUCTURES FOR THE 100-YEAR EVENT
- RAISING GROUND ELEVATION ABOVE 25-YEAR STILLWATER ELEVATION WITH 30" SLR

- TARGET EROSION AND PRESERVE COASTAL BLUFF
- ESTABLISH A STRUCTURED ELEVATION AT THE BLUFF OF THE COASTAL BUFFER



OVERALL DESIGN / PROJECT RISKS



CONCRETE PATH TO CONNECT EXISTING STONE SCREENING PATH

BRIGHTON STREET END
LOOKOUT POINT WITH:
2 BENCHES

BRIGHTON STREET END
WASTE BINS

MANHATTAN STREET END
LOOKOUT POINT WITH:
WASTE BINS

EARTHEN BERM

WETLAND ECO-REVEGETMENT

HYBRID DUNE REVEGETMENT

SURF AVE ECO-REVEGETMENT

RAISED EDGE

SPRAGUE OUTLOOK
LOOKOUT POINT WITH:
6 BENCHES, WASTE BINS,
INTERPRETIVE SIGNAGE, +
A BICYCLE RACK

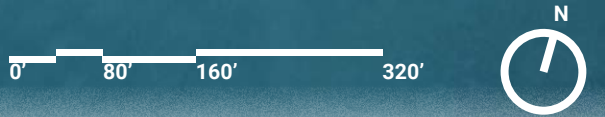
PAGE AVE PARKING LOT
LOOKOUT POINT WITH:
2 BENCHES, INTERPRETIVE
SIGNAGE, + WASTE BINS

SURF AVE OUTLOOK
LOOKOUT POINT WITH: 1 BENCH

JOLINE STREET END
LOOKOUT POINT WITH:
WASTE BINS

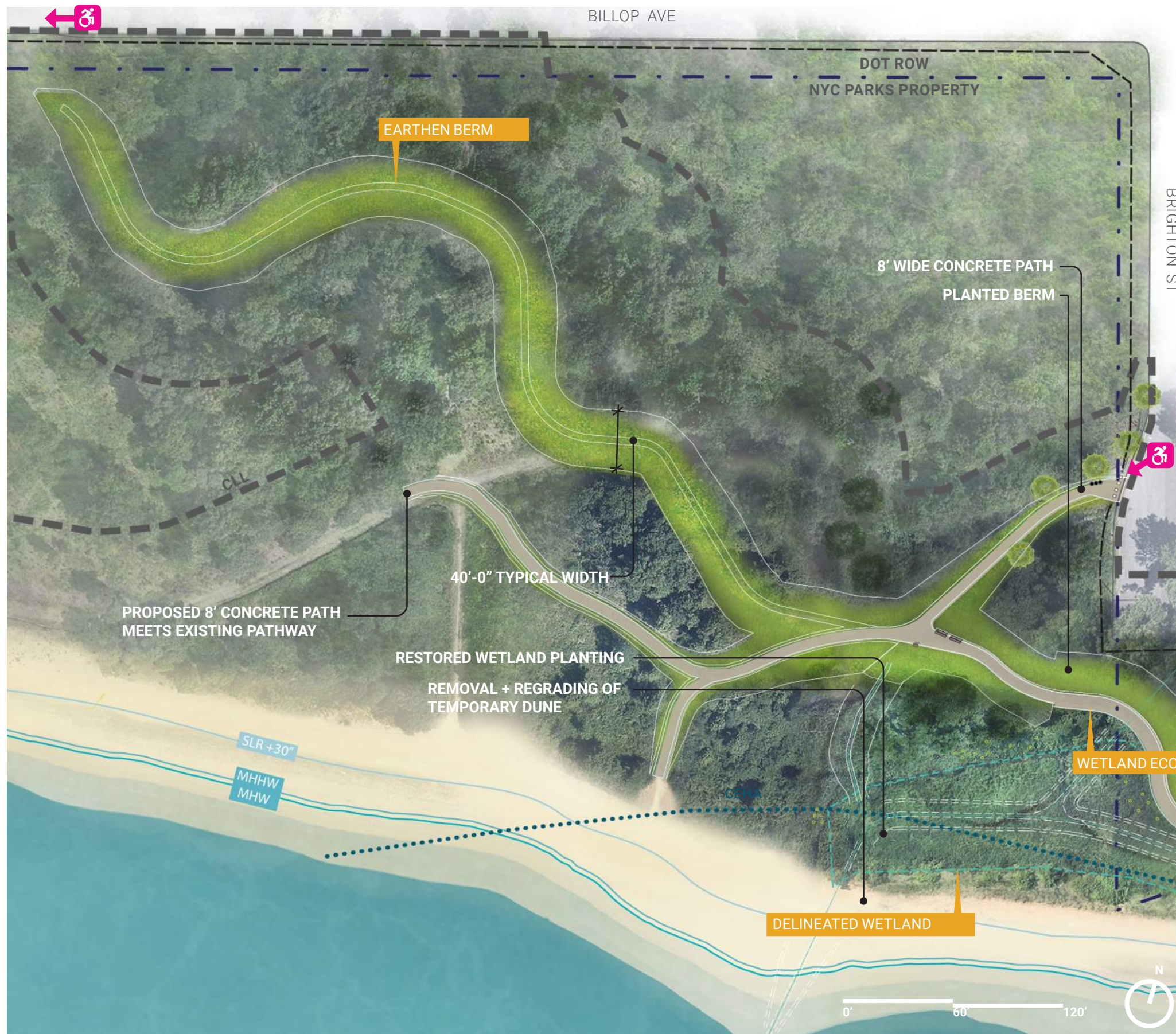
LORETTO STREET END
WASTE BINS

LIVING BREAKWATERS PROJECT BY OTHERS

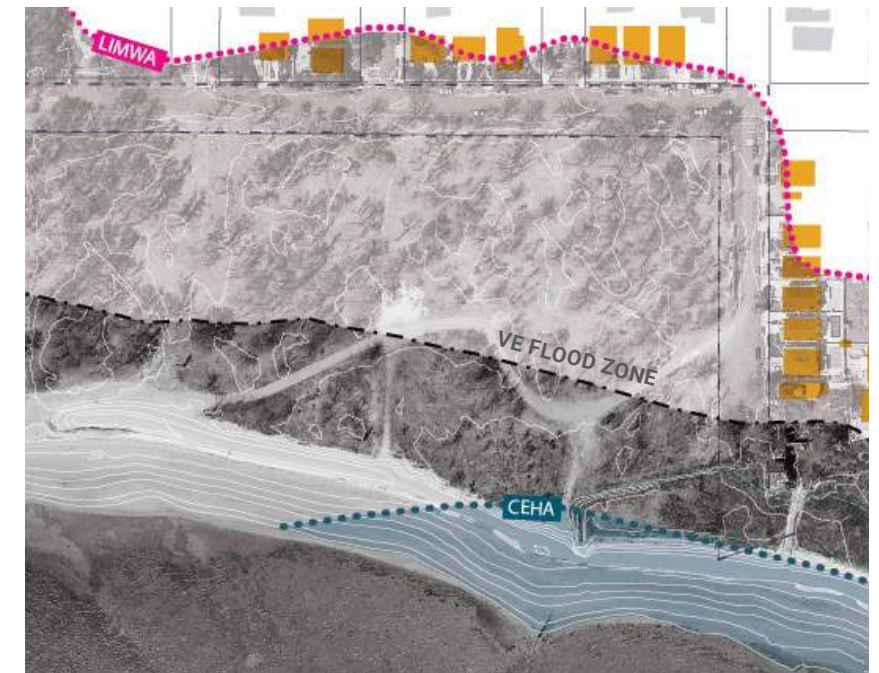


OVERALL DESIGN | PROPOSED SITE PLAN

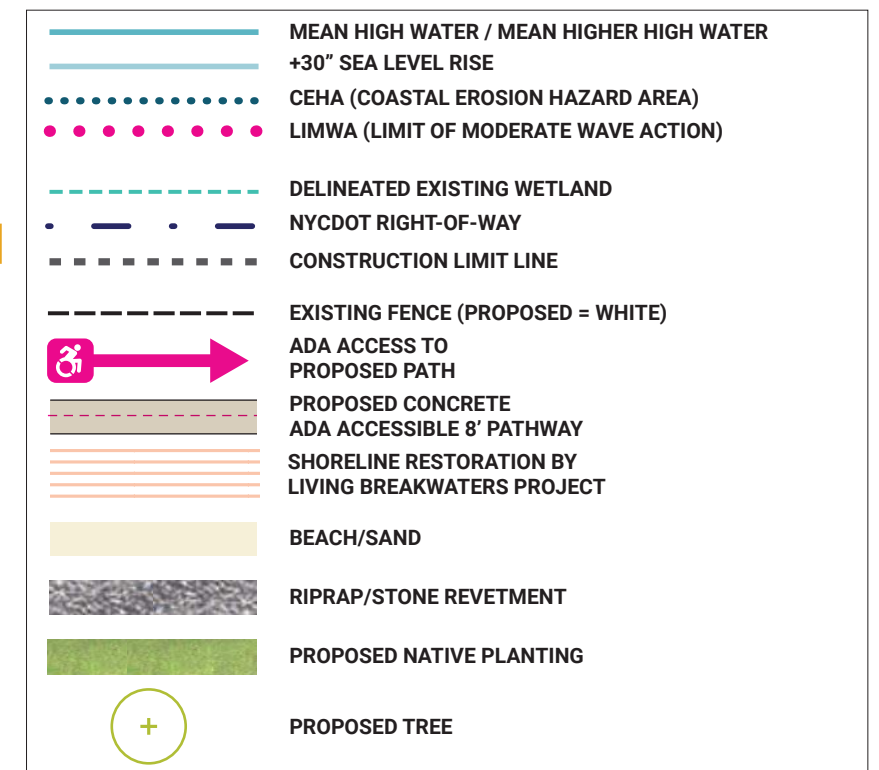
	MEAN HIGH WATER / MEAN HIGHER HIGH WATER		SHORELINE RESTORATION BY LIVING BREAKWATERS PROJECT		PROPOSED CONCRETE ADA ACCESSIBLE 8' PATHWAY
	+30" SEA LEVEL RISE		ADA ACCESS TO PROPOSED PATH		BEACH/SAND
	CEHA (COASTAL EROSION HAZARD AREA)		PEDESTRIAN ACCESS TO BEACH BY STAIRS		RIPRAP/STONE REVEGETMENT
	LIMWA (LIMIT OF MODERATE WAVE ACTION)		ADA ACCESS TO BEACH		PROPOSED NATIVE PLANTING
	DELINEATED EXISTING WETLAND				PROPOSED TREE
	NYCDOT RIGHT-OF-WAY				
	CONSTRUCTION LIMIT LINE				
	EXISTING FENCE				



KEY MAP



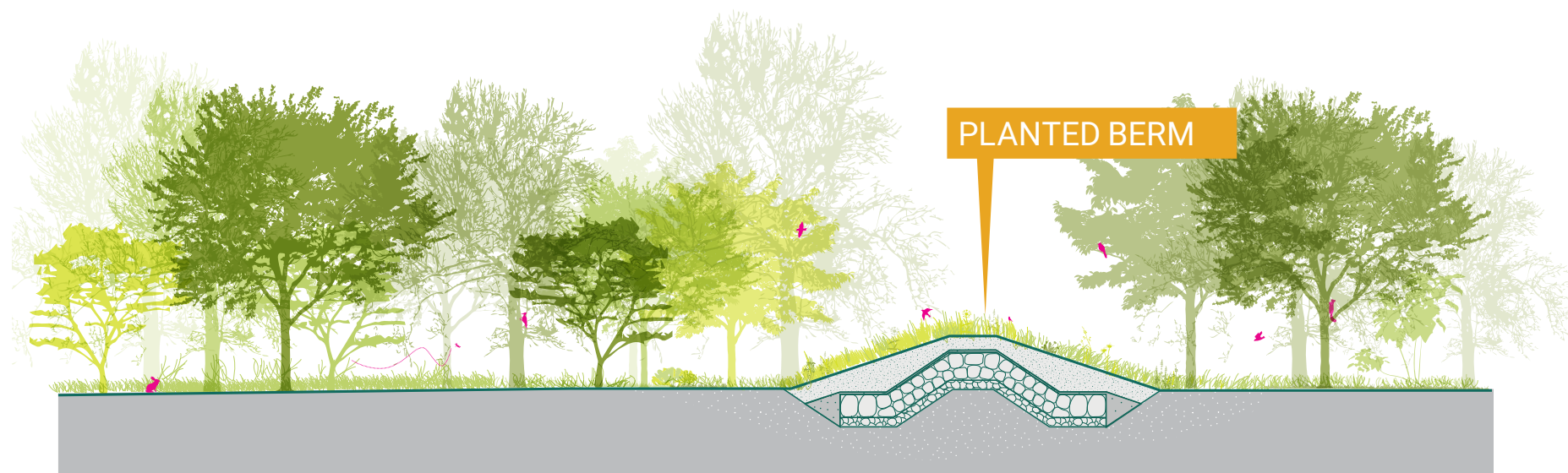
EXISTING CONDITIONS + RISKS



EARTHEN BERM | SITE PLAN



EXISTING SECTION A-A'



PROPOSED SECTION A-A'



KEY MAP

EARTHEN BERM / SITE SECTIONS



EARTHEN BERM | ENTRANCE AT BRIGHTON STREET END

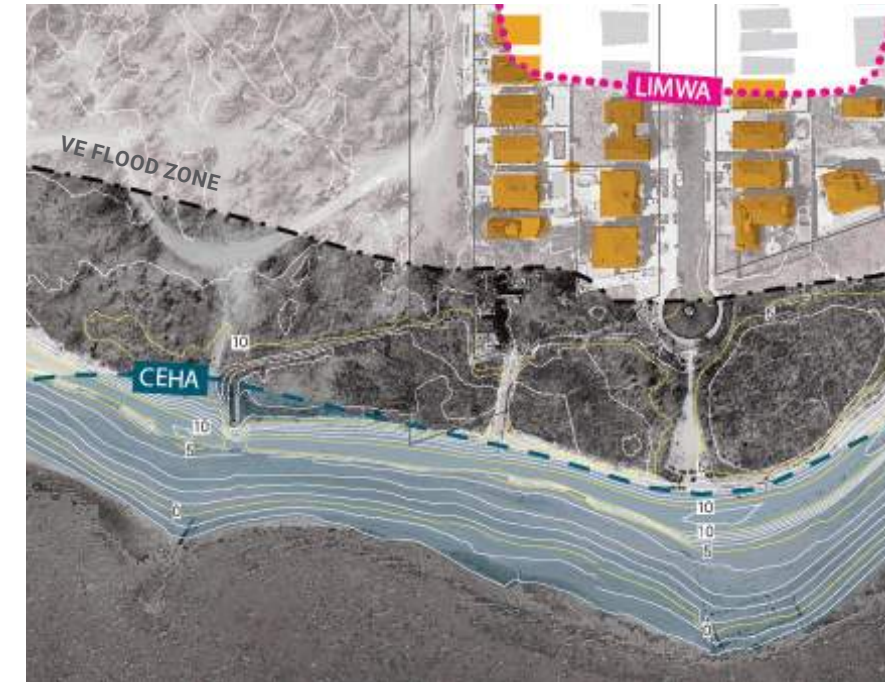




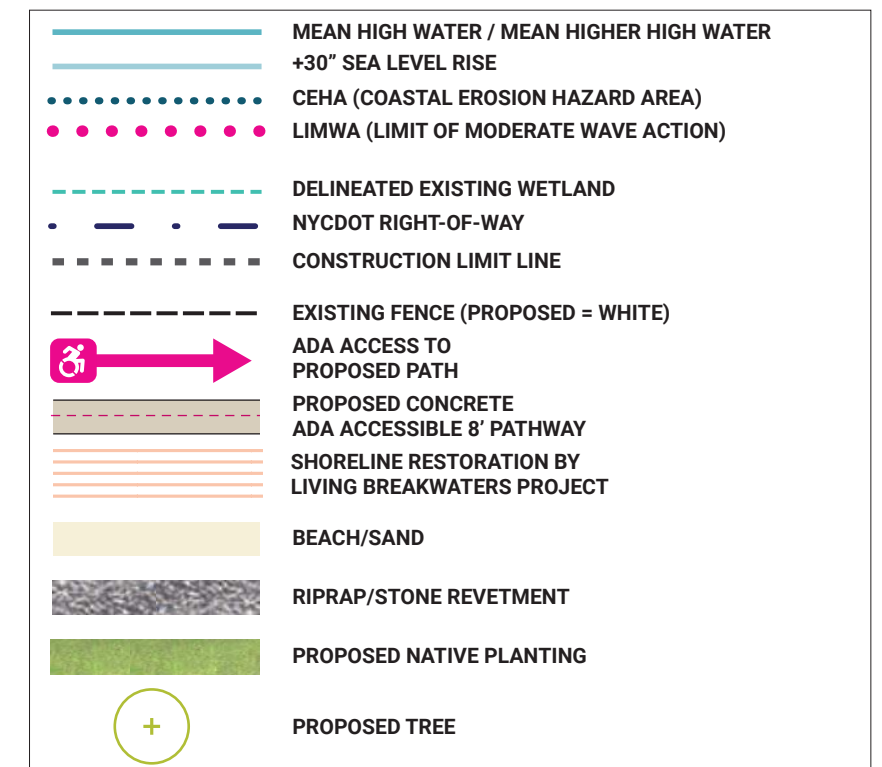
WETLAND ECO-REVETMENT | SITE PLAN



KEY MAP

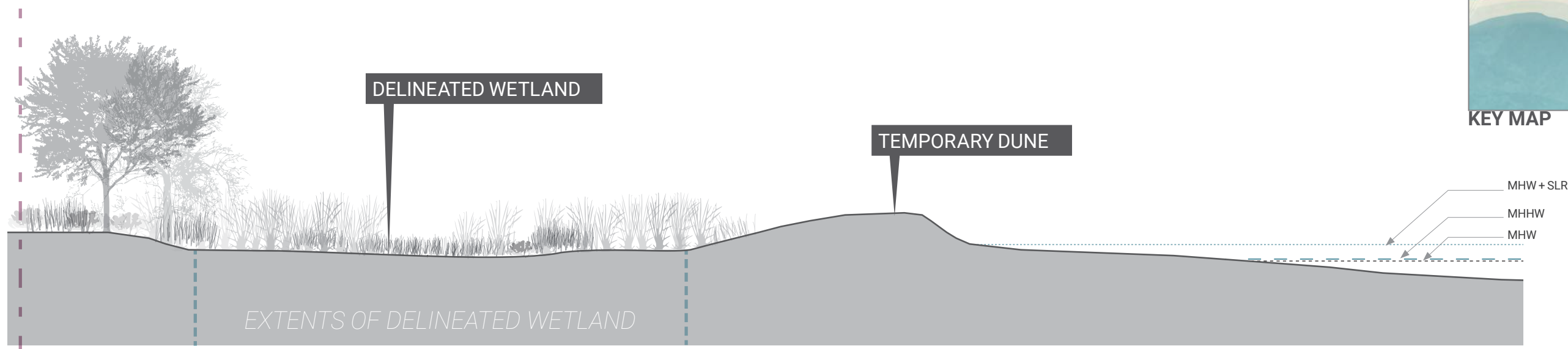


EXISTING CONDITIONS + RISKS

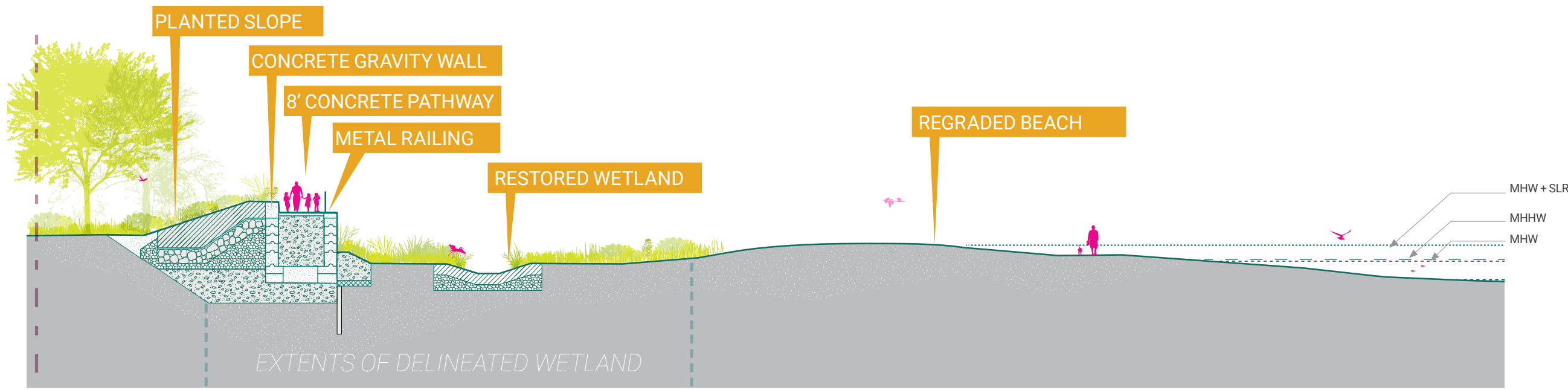




KEY MAP



EXISTING SECTION A-A'



PROPOSED SECTION A-A'

WETLAND ECO-RETVEMENT | SITE SECTIONS

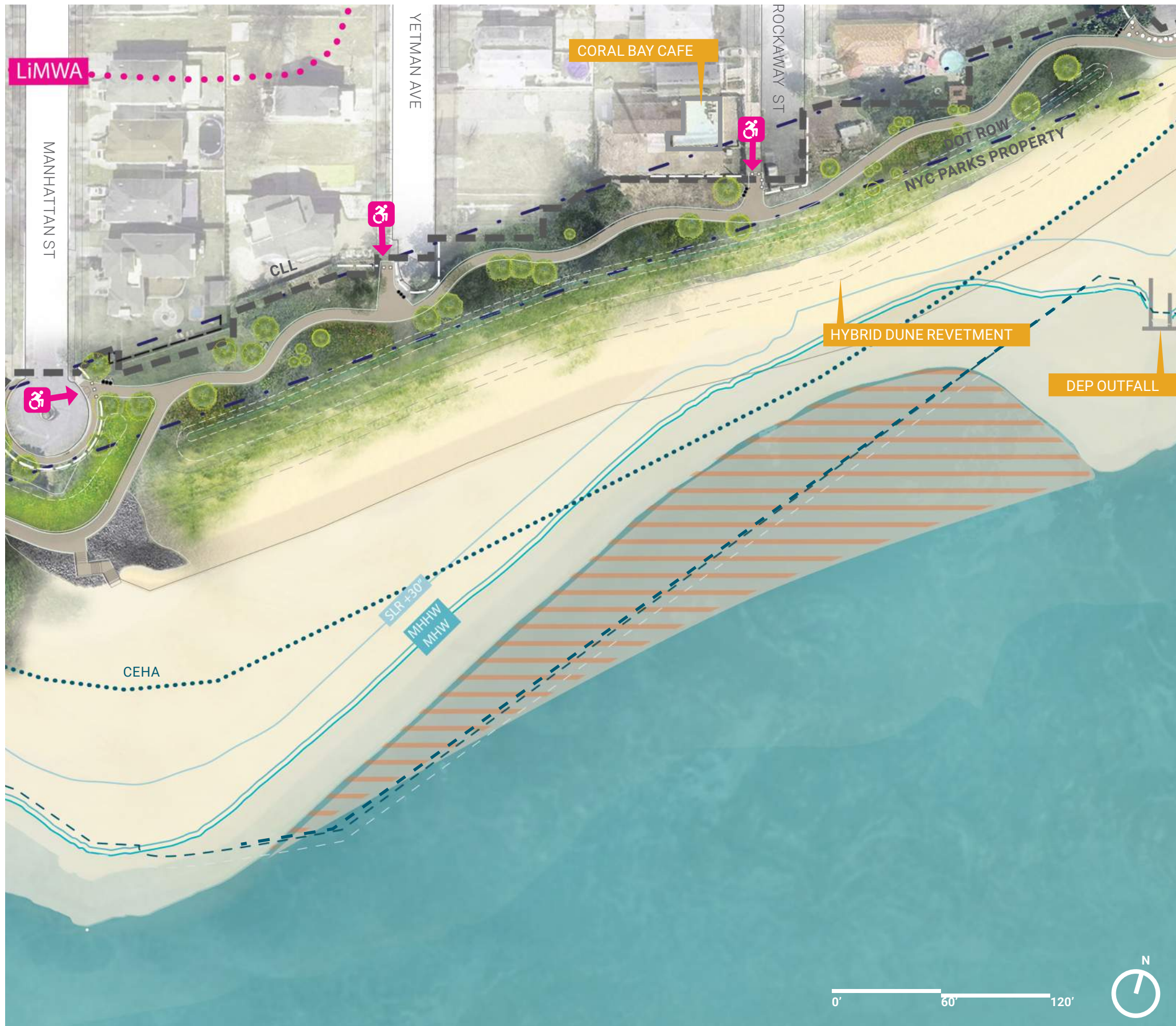


KEY MAP

WETLAND ECO-REVIETMENT | VIEW OF RESTORED WETLAND FROM PATH



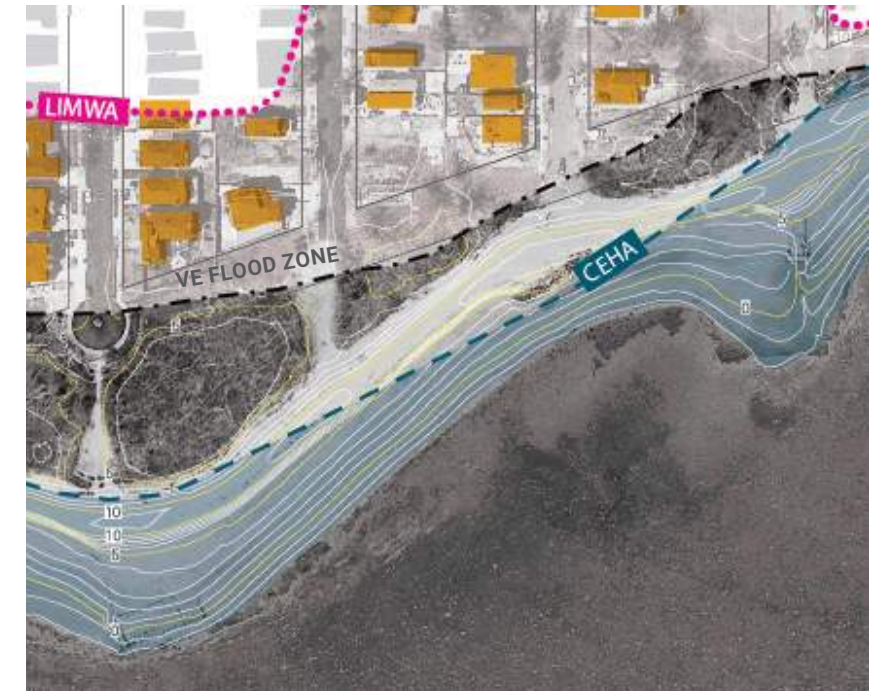
WETLAND ECO-REVTMENT | VIEW OF MANHATTAN STREET END



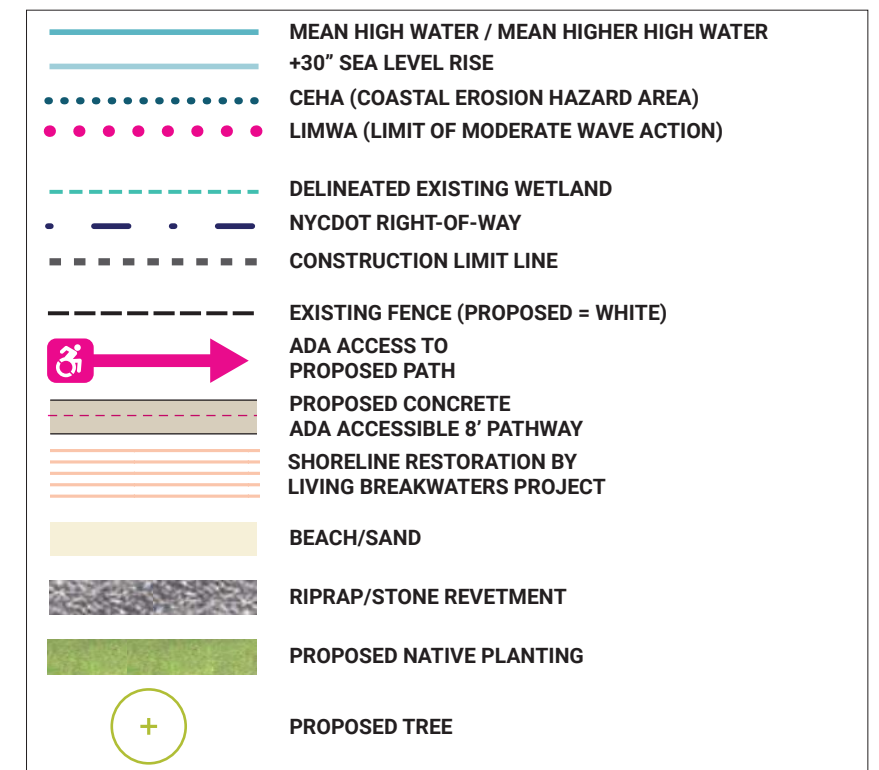
HYBRID DUNE REVETMENT | SITE PLAN

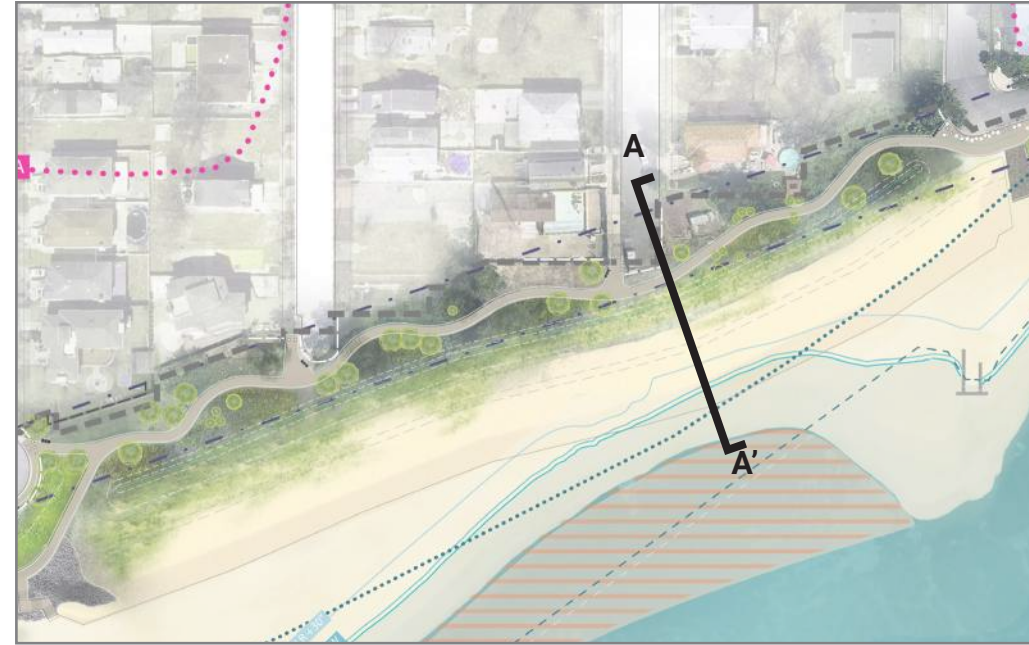
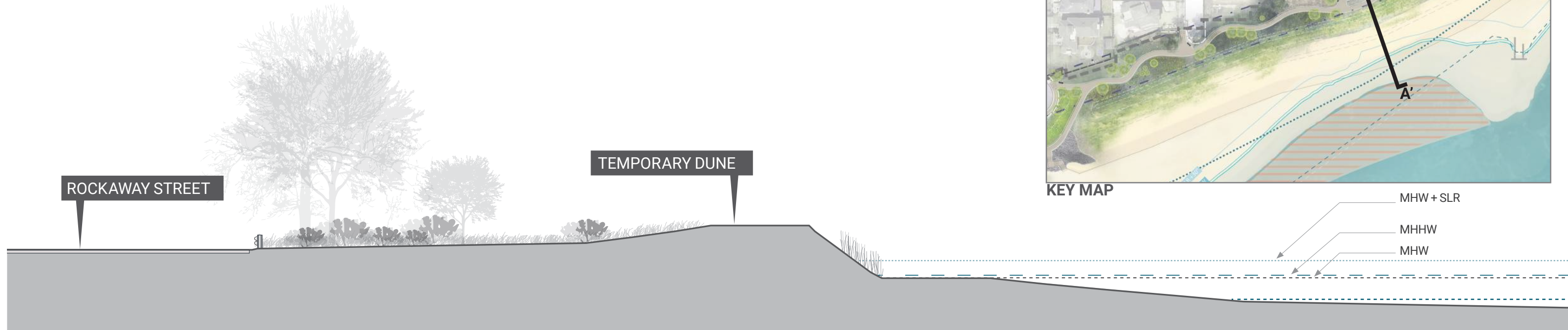


KEY MAP

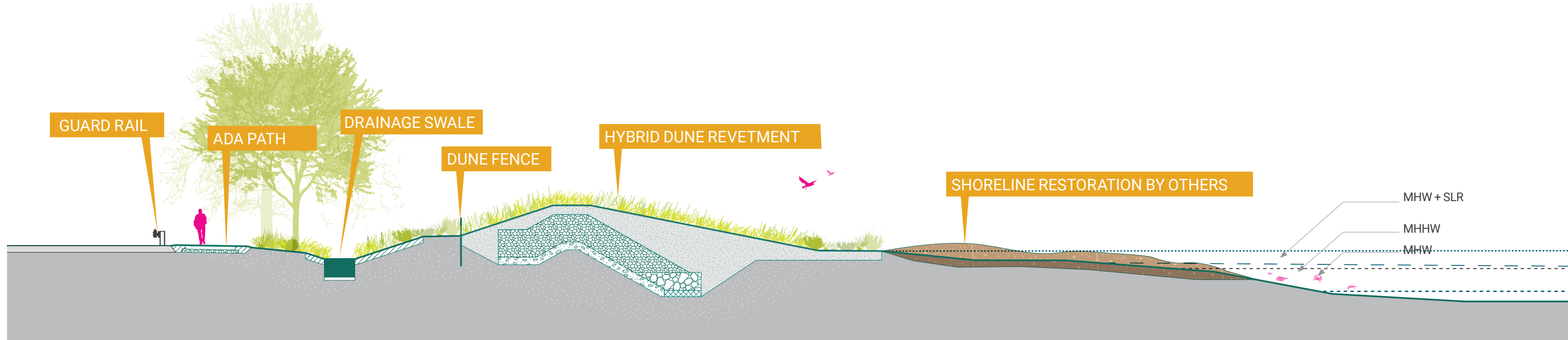


EXISTING CONDITIONS + RISKS





EXISTING SECTION A-A'



PROPOSED SECTION A-A'

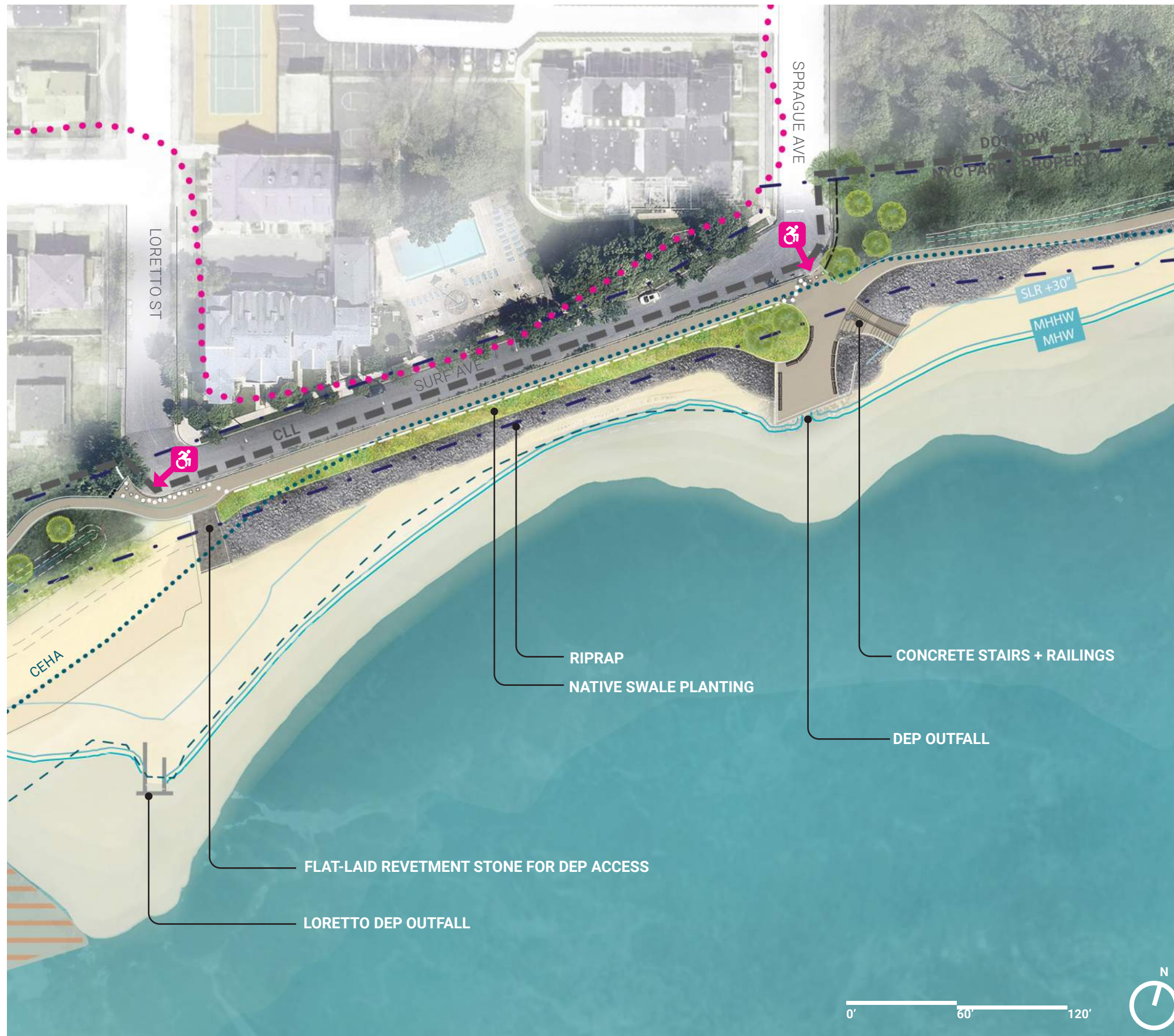
HYBRID DUNE REVETMENT | SITE SECTIONS



HYBRID DUNE REVETMENT | ACCESS AT ROCKAWAY STREET



KEY MAP



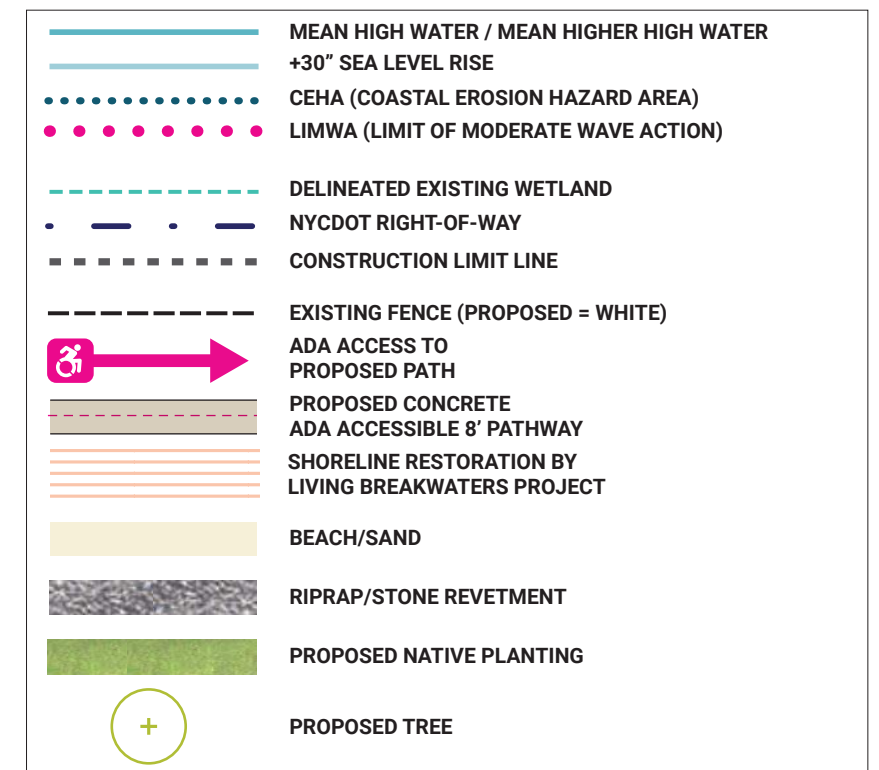
SURF AVE ECO-REVETMENT | SITE PLAN

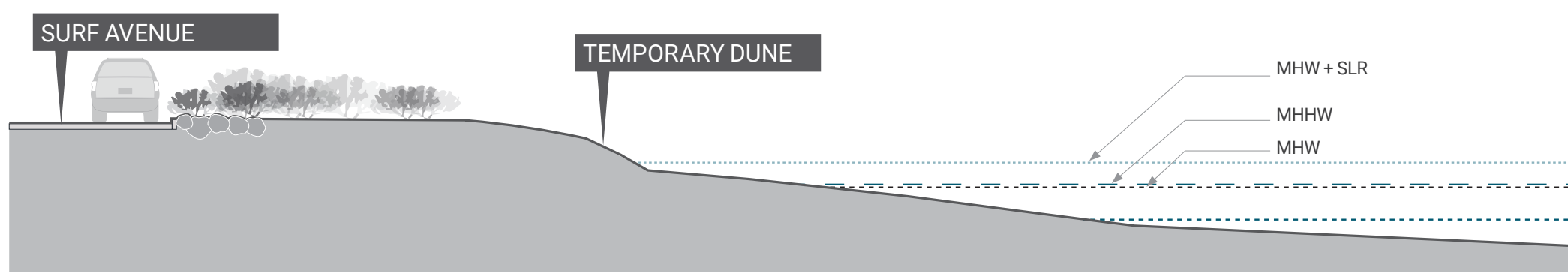


KEY MAP

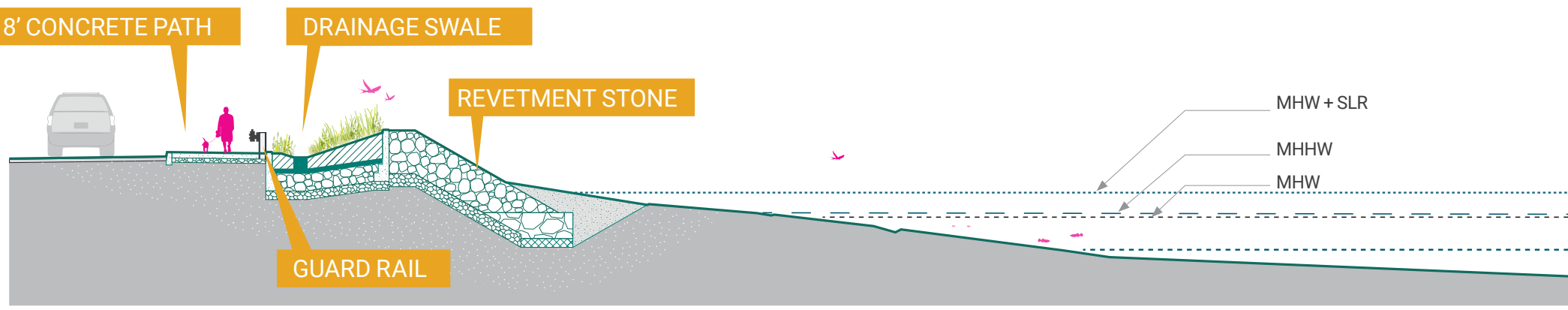


EXISTING CONDITIONS + RISKS

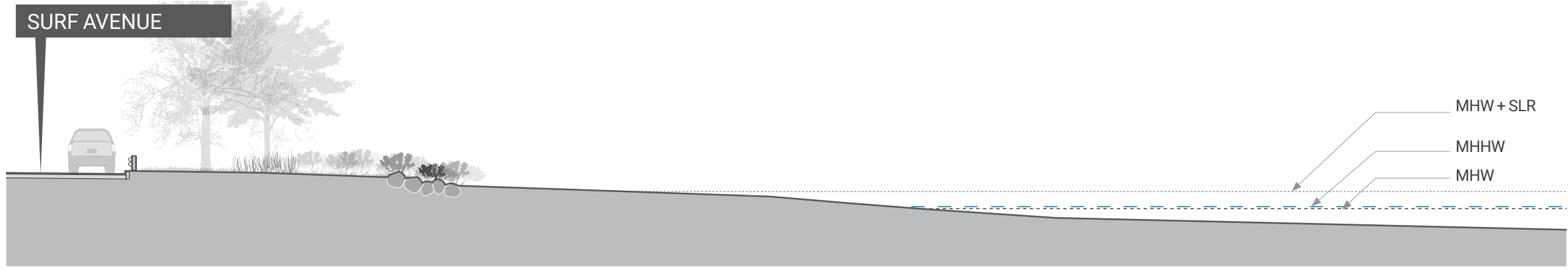




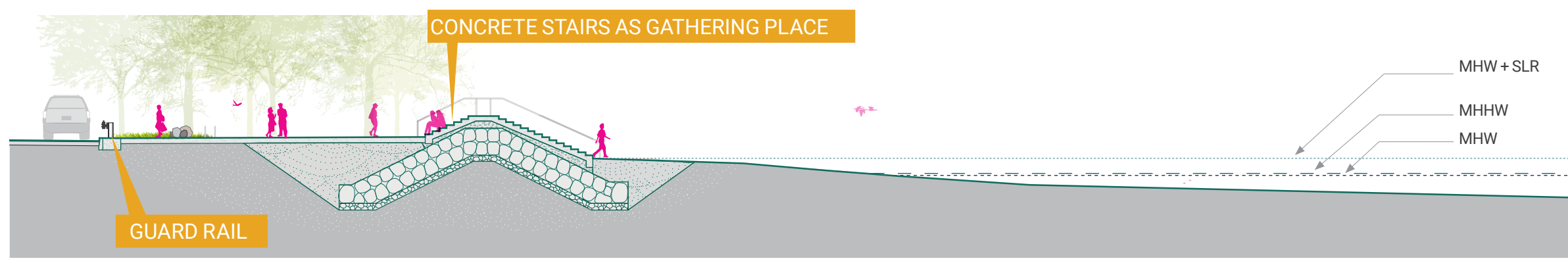
EXISTING SECTION A-A'



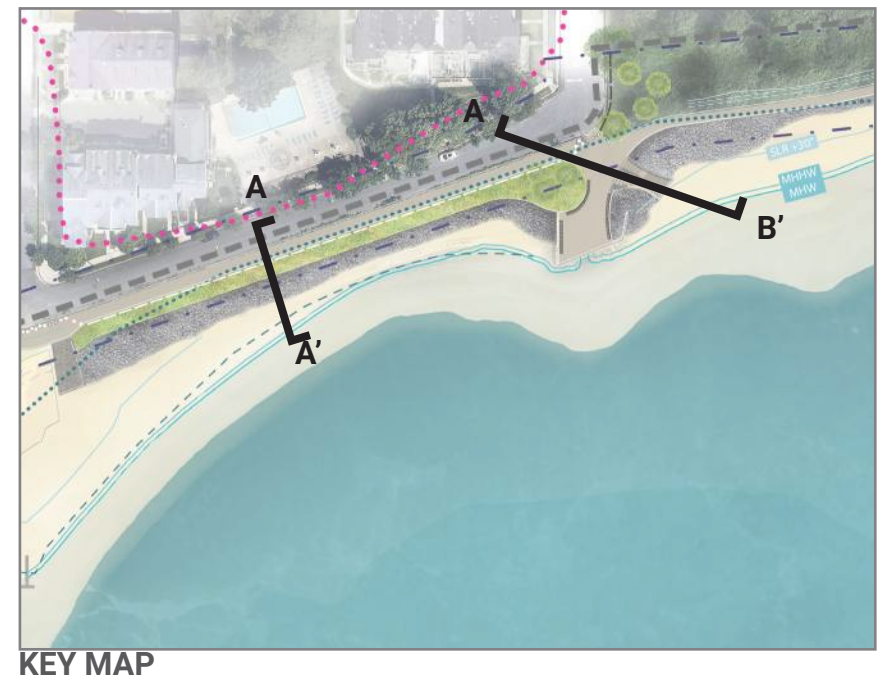
PROPOSED SECTION A-A'



EXISTING SECTION B-B'



PROPOSED SECTION B-B'



SURF AVE ECO-REVTMENT | SITE SECTIONS



SURF AVE ECO-REVTMENT | ACCESS TO PATH AT LORETTO STREET END



KEY MAP



SURF AVE ECO-REVTMENT | VIEW FROM OUTLOOK AT SPRAGUE STREET END



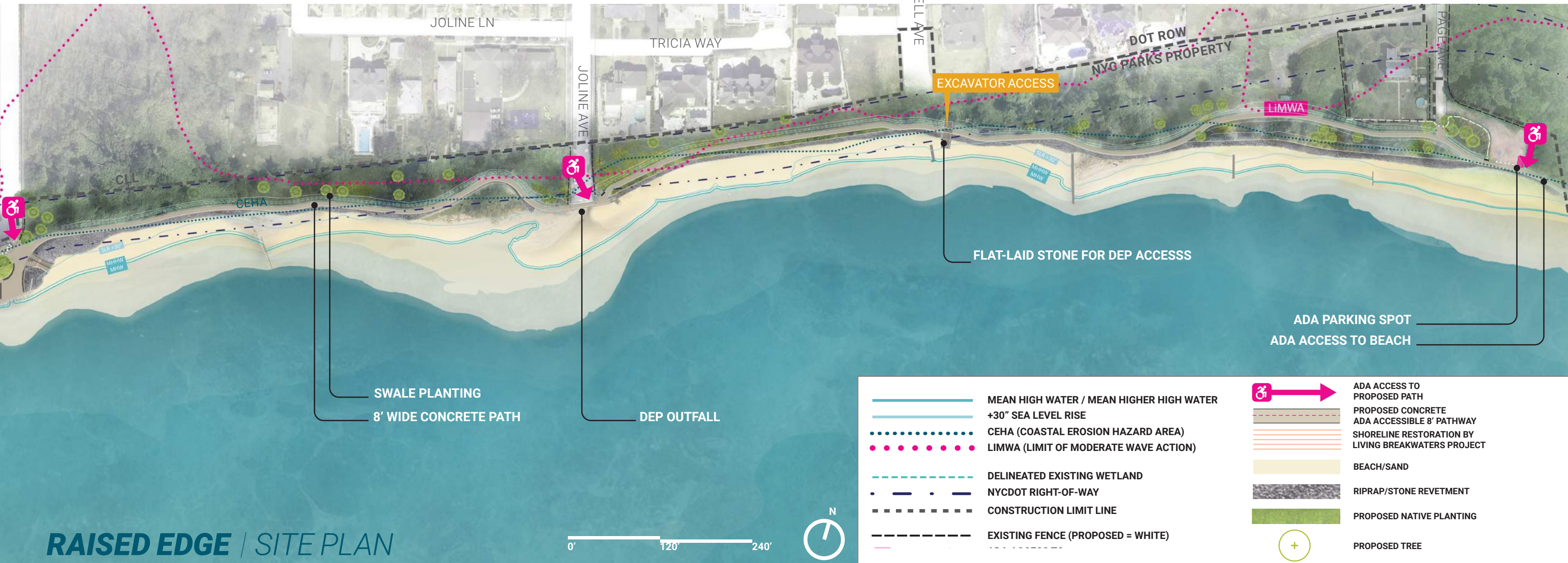
KEY MAP



KEY MAP



EXISTING CONDITIONS + RISKS

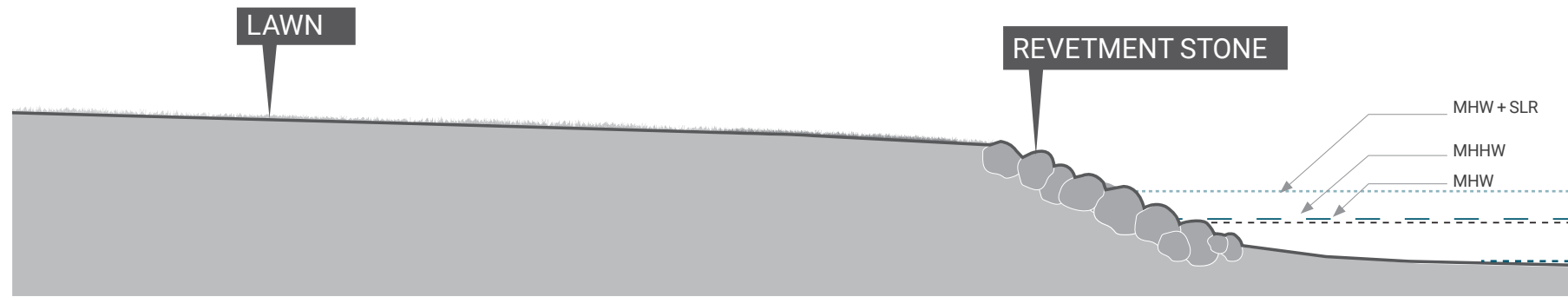


RAISED EDGE / SITE PLAN

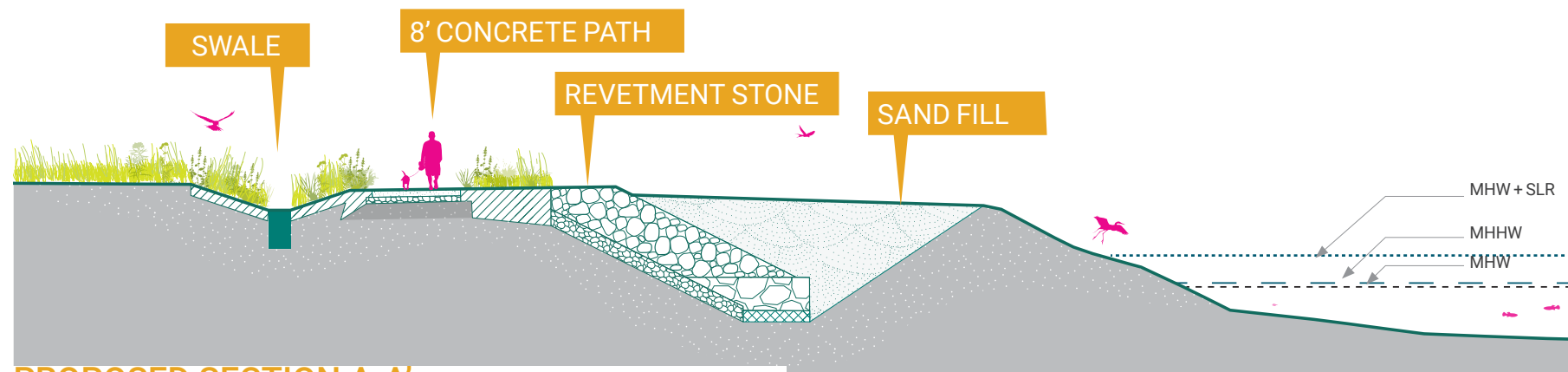
0' 120' 240'



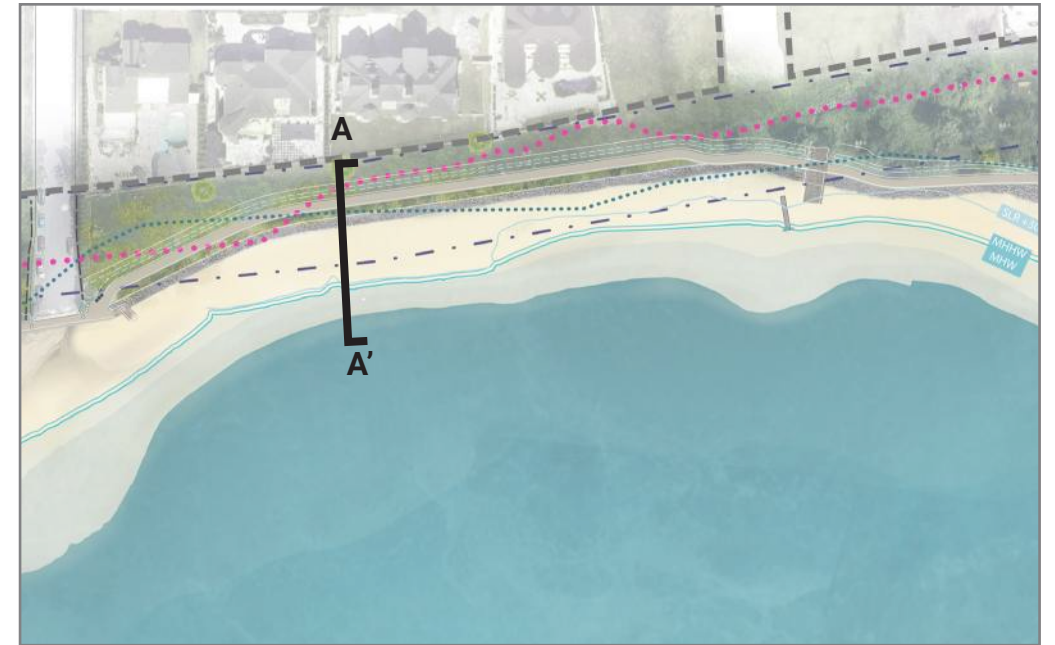
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- +30" SEA LEVEL RISE
- CEHA (COASTAL EROSION HAZARD AREA)
- LIMWA (LIMIT OF MODERATE WAVE ACTION)
- DELINEATED EXISTING WETLAND
- NYCDOT RIGHT-OF-WAY
- CONSTRUCTION LIMIT LINE
- EXISTING FENCE (PROPOSED = WHITE)
- ADA ACCESS TO PROPOSED PATH
- PROPOSED CONCRETE ADA ACCESSIBLE 8' PATHWAY
- SHORELINE RESTORATION BY LIVING BREAKWATERS PROJECT
- BEACH/SAND
- RIPRAP/STONE REVETMENT
- PROPOSED NATIVE PLANTING
- PROPOSED TREE



EXISTING SECTION A-A'

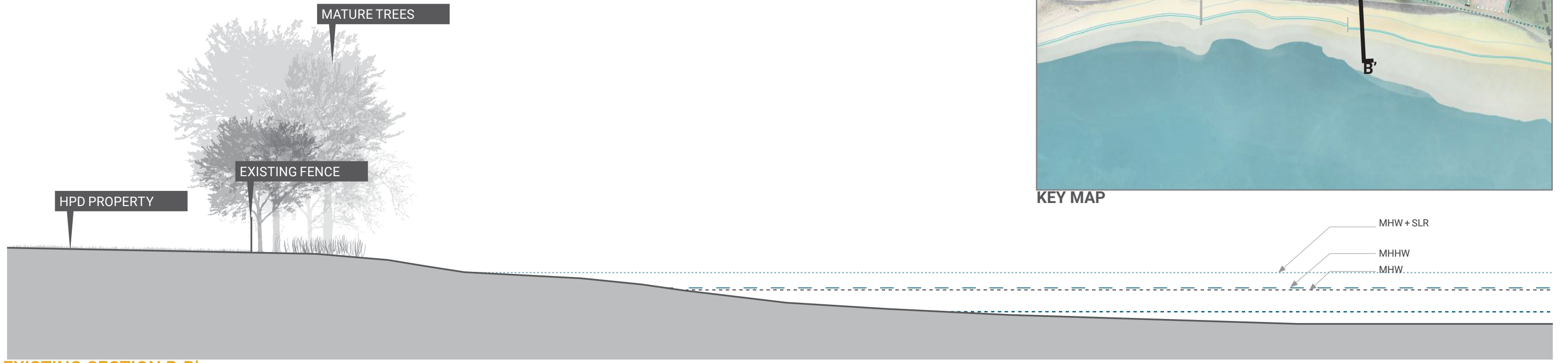


PROPOSED SECTION A-A'

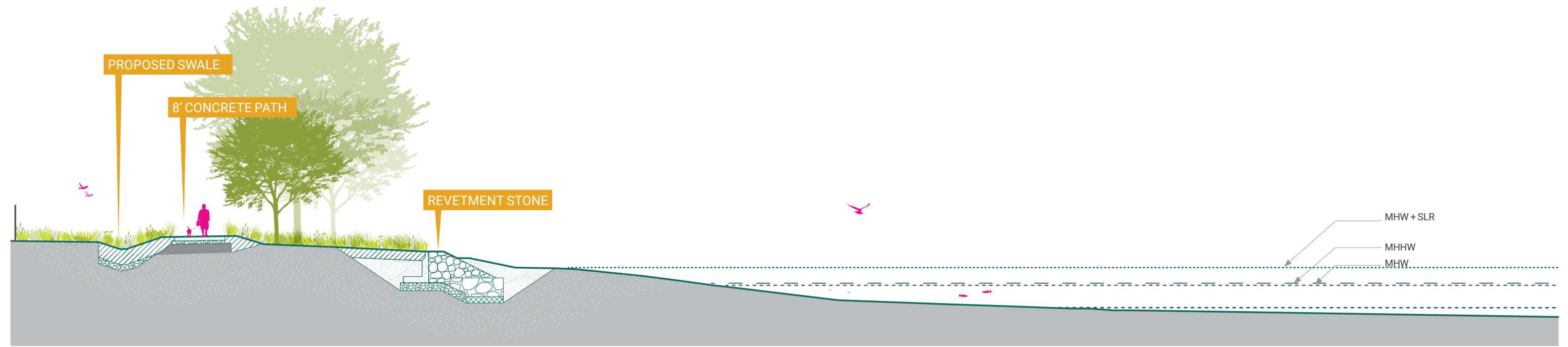


KEY MAP

RAISED EDGE | SITE SECTIONS



EXISTING SECTION B-B'



PROPOSED SECTION B-B'

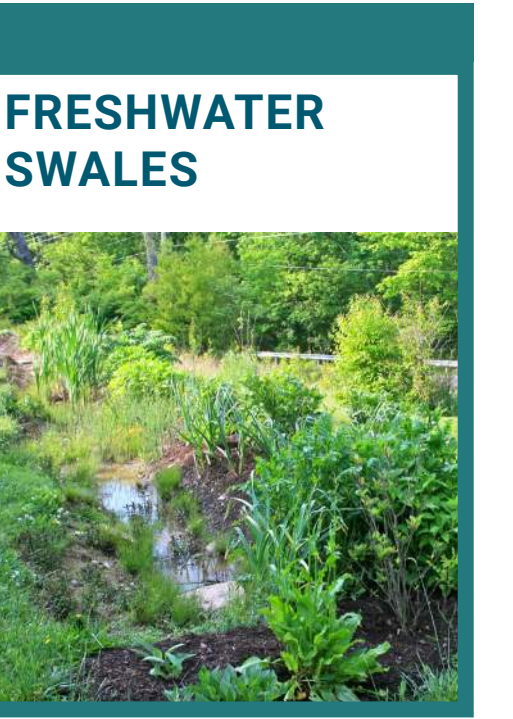
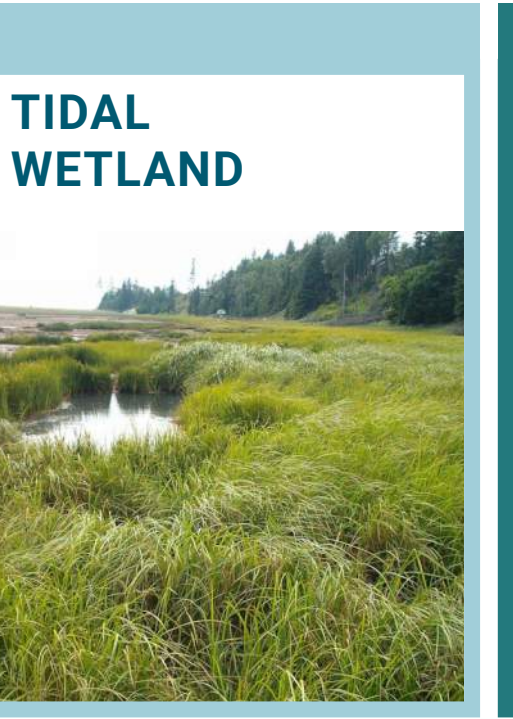
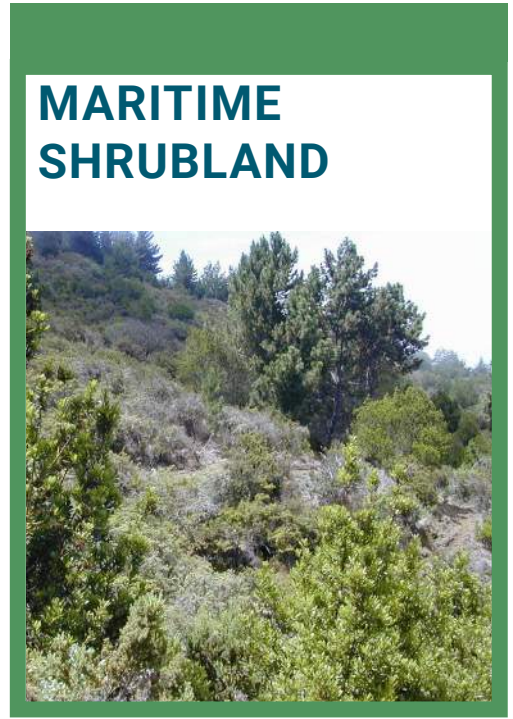
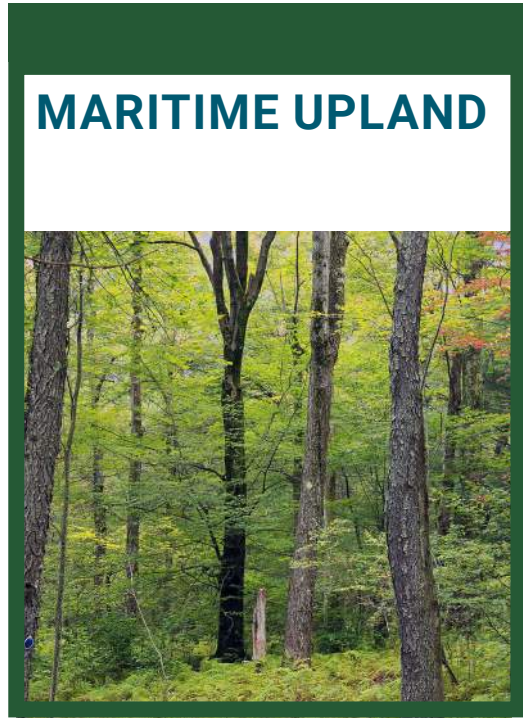
RAISED EDGE | SITE SECTIONS



RAISED EDGE | VIEW FROM PAGE AVENUE PARKING LOT ALONG RAISED EDGE



RAISED EDGE | VIEW FROM PAGE AVENUE PARKING LOT ALONG RAISED EDGE



PROJECT MATERIALS | *PROPOSED PLANT COMMUNITY DISTRIBUTION MAP*