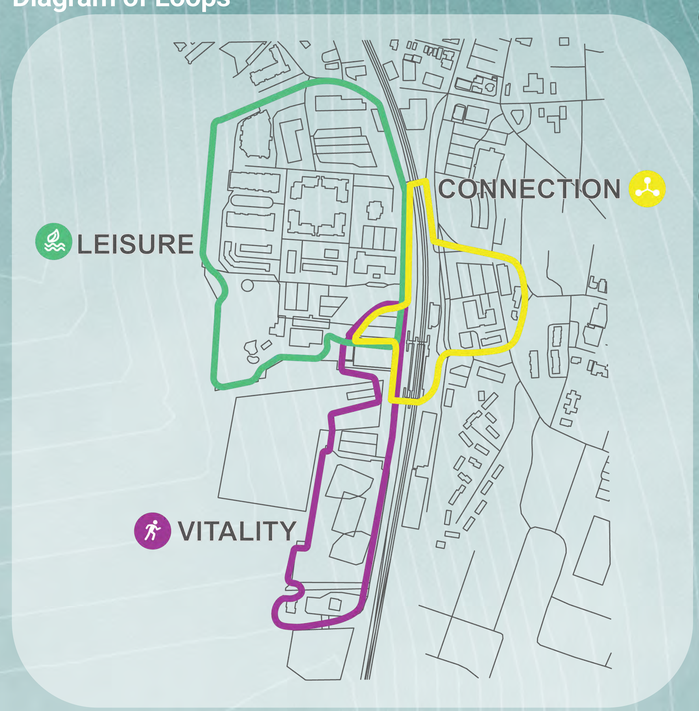
THE LOOPS OF RESILIENCE

LA7010
Hang Wang
Xue Xia

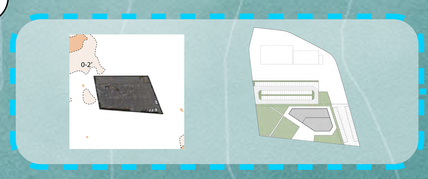
PHASE 1 · 2020S

Bubble Diagram

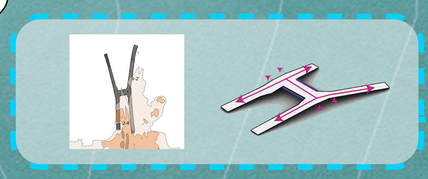
Diagram of Loops



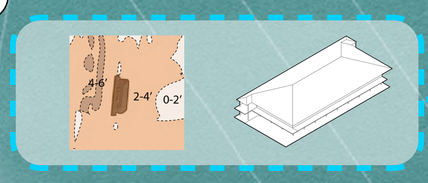
1 Carriage House： Community Center



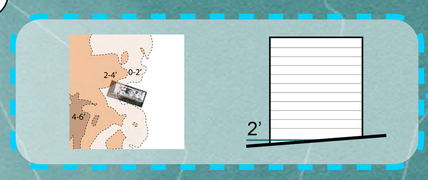
2 H Bridge: Add New Sidewalk



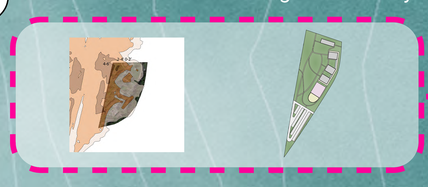
3 Train Station: Elevation



4 Franklin Tower: Add Waterproofing



5 Franklin Court: Redesign Community



Relocation Adaptation

1 Carriage House - Redesign

2 H Bridge - Activate Under Bridge

5 Franklin Court - Redesign

THE LOOPS OF RESILIENCE

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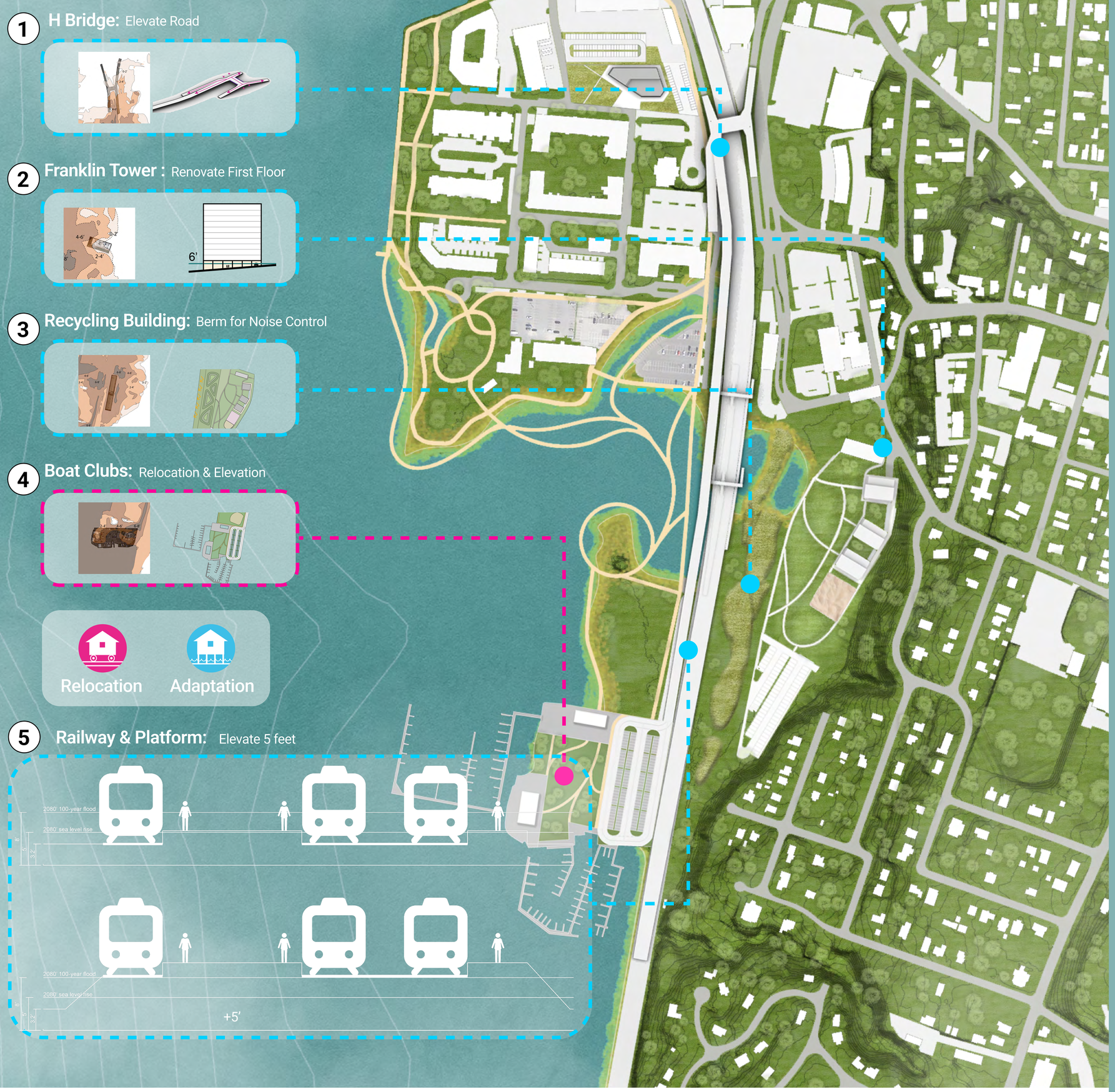
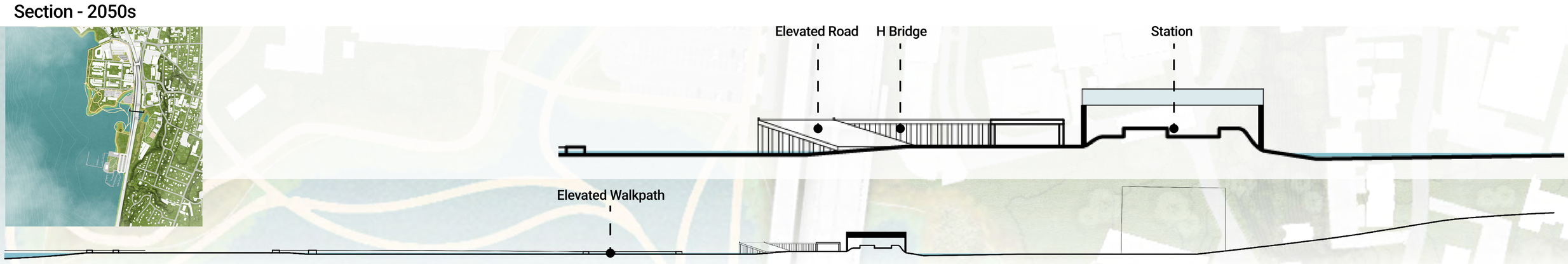
PHASE 2 · 2050S

Bubble Diagram

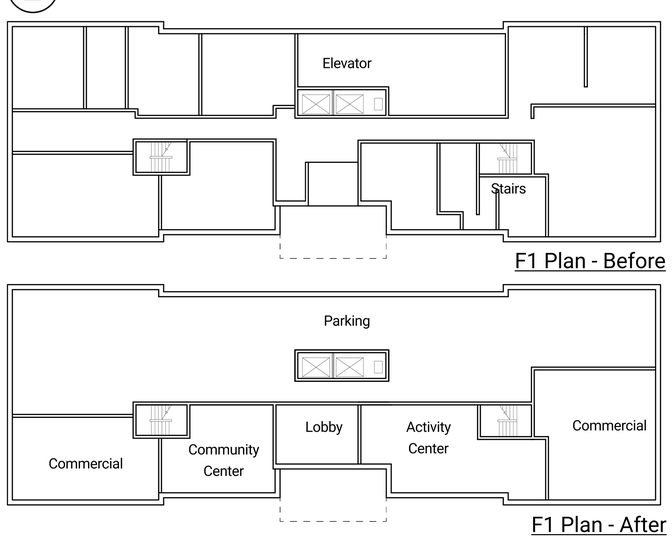
Diagram of Loops



Section - 2050s



2 Franklin Tower - First Floor Plan



4 Tarrytown & Washington Irving Boat Club

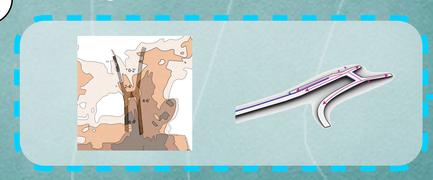
5 Renovated Railway Perspective

THE LOOPS OF RESILIENCE

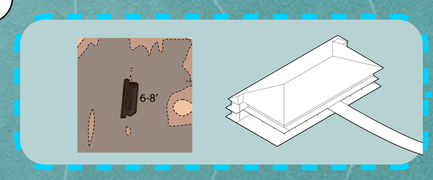
PHASE 3 · 2080S

Bubble Diagram

1 **H Bridge:** Change Exit

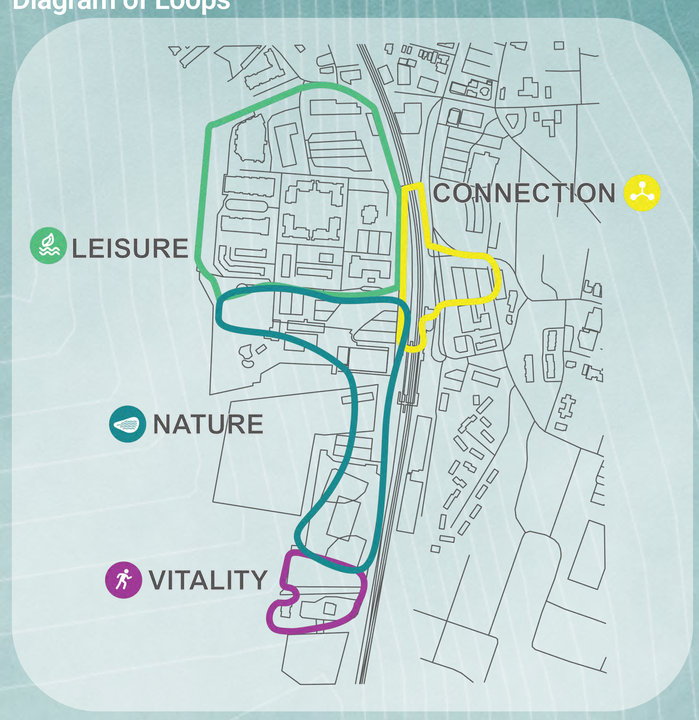


2 **Train Station:** Connect to Unflooded Area

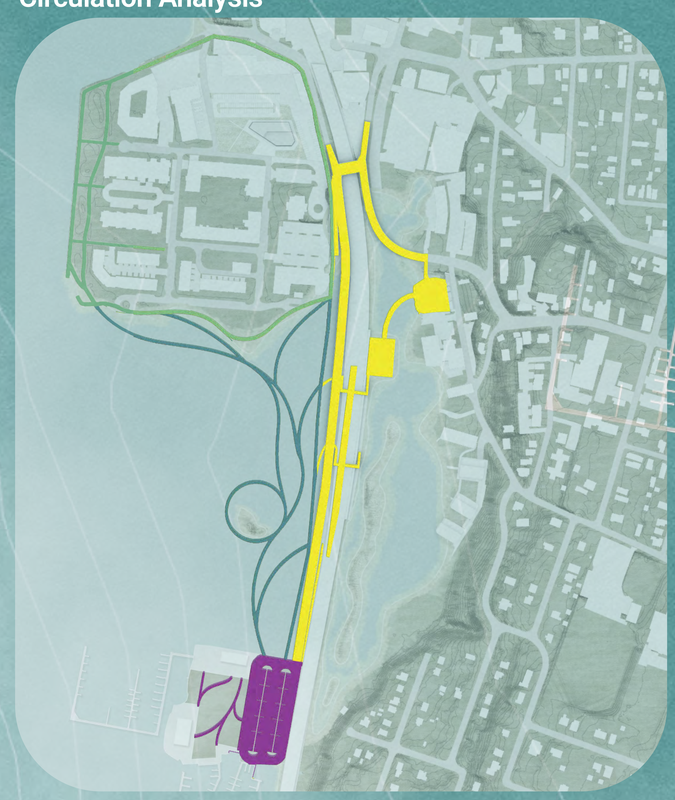


Relocation Adaptation

Diagram of Loops



Circulation Analysis



3 Marsh Perspective - 2080s

Low Marsh

Zizania aquatica

Peltandra virginica

Sagittaria latifolia

Spartina cynosuroides

Sporobolus alterniflorus

HIgh Marsh

Distichlis spicata

Iva frutescens

Juncus gerardii

Solidago sempevirens

Spartina patens

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NATURE · CONNECTION · VITALITY

The concept of our project is using interconnected loops of NATURE, CONNECTION, and VITALITY to restore the resilience of Tarrytown. Our strategies include engineering resilience, ecological resilience, and social-ecological resilience. We aim to use these strategies to adapt to climate change and re-use valuable areas, rather than fighting nature.

Resilience concepts

- **Engineering Resilience**
- **Ecological Resilience**
- **Social-ecological Resilience**

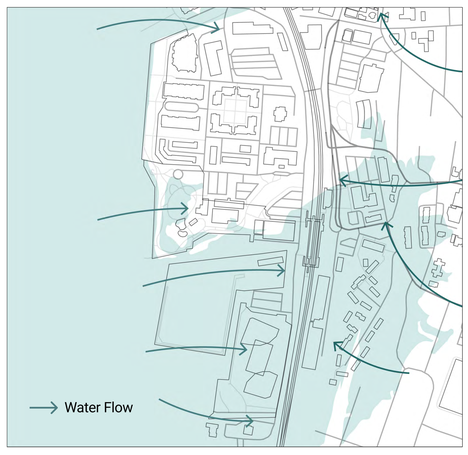
Sea Level Rise

2020s
100 - Year Flooding

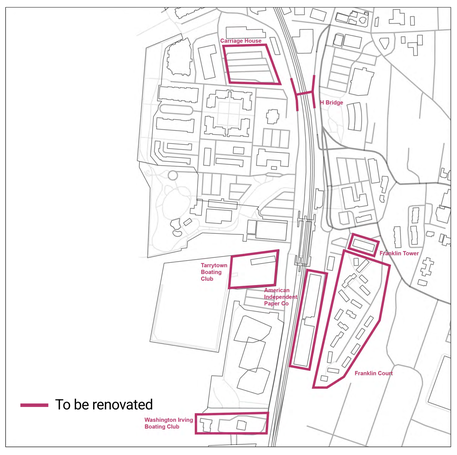
2050s
100 - Year Flooding

2080s
100 - Year Flooding

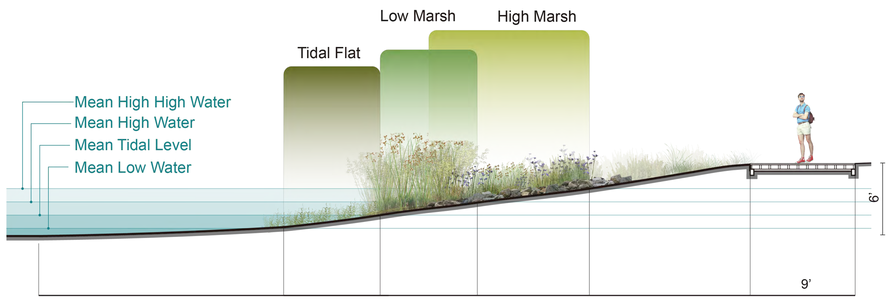
Water Flow Analysis



Renovation Analysis

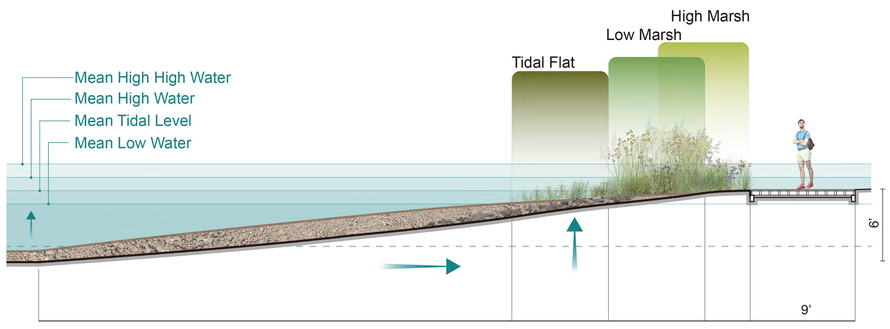


Sea Level Rise & Marsh Migration



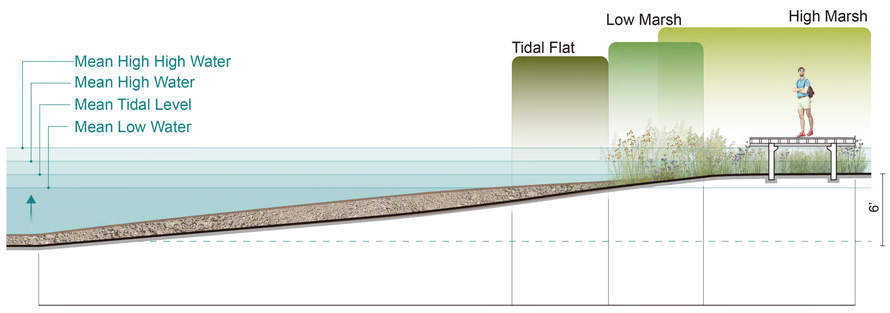
The first section shows the **soft shoreline** of our site with riprap. Marsh may grow naturally in tidal wetland communities like this in the future.

According to the classification of tidal, marsh could be divided into three kinds: between the mean low water level and the mean tidal level is the tidal flat. Between the mean tidal level and the high water level are the low marsh and part of the high marsh.



The second section shows the sea level rises 2.5 feet in the 2050s. The marsh will migrate both vertically and horizontally due to the sea level rise and silt accretion.

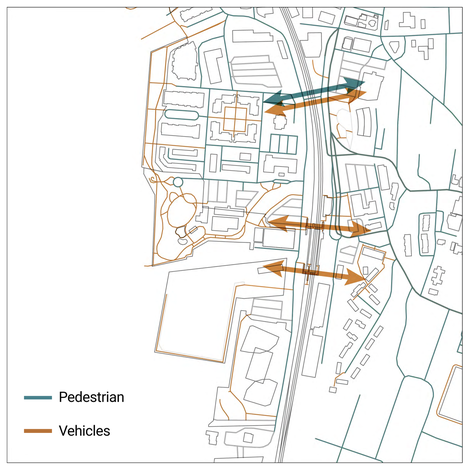
However, the marsh will **not be able to continue growing upward**, because of concrete ground prevention like the parking lots and roads.



The marsh is a very valuable ecosystem, which can provide habitats for wild animals and protect the shoreline.

Therefore, for our aim to make a resilience system, we propose to change the concrete ground into **soil ground** to **let the marsh migrate naturally**, and to elevate the road for people to participate in the marsh system.

Connection Analysis



Activity Analysis

Construction Strategy

Relocation

- Franklin Court
- Boat Club

"Relocation" is moving the flooding-threatened construction to a new place and re-establishing it.

Adaptation

- H Bridge
- Carriage House
- Franklin Tower
- Recycling Building
- Train Station
- Railway

"Adaptation" is using a diversified approach to interventions for flooding, like elevating the construction, changing the function, etc.

	2020s		2050s		2080s	
H Bridge		Add New Sidewalk		Elevate Road		Change Exit
Carriage House		Commercial Center				Community Center
Franklin Tower		Add Waterproofing		Ground Floor Renovation		Adaptive to 2080s SLR
Franklin Court		Redesign				Adaptive to 2080s SLR
Recycling Building		Demolish the Current		Berm - Reduce Noise		Adaptive to 2080s SLR
Tarrytown & Washington Irving Boat Club		Current Condition		Relocation & Elevation		
Train Station		Elevate				Connect to unflooded area

Flood Depth

- 0-2'
- 2-4'
- 4-6'
- 6-8'