

# CHARLESTOWN WATER DISTRICT

## **abstract**

<b>name</b>	Charlestown Water district
<b>location</b>	Bunker Hill, Charlestown, Boston, MA
<b>entry category</b>	Student Work - Urban Design
<b>description</b>	Located on a site at risk from sea level rise in a neighborhood in need of housing, our design uses an elevated boardwalk over restored marsh and park space to enrich and protect residents of the Bunker Hill neighborhood. With a central theme of Living with Water, each area of the design offers a way for residents and visitors to connect to the water; from exploring the salt marsh, to swimming and kayaking; all while providing habitat, filtering stormwater, and buffering against sea level rise.

# CHARLESTOWN WATER DISTRICT

## narrative

### **The Charlestown Water District is a vision for a new way to live with water in the context of the next 150 years of Sea Level Rise.**

The central challenge of the low-lying site is the inevitable future tidal flooding it will experience. The site is currently occupied by a vast parking lot "autopark" that receives maritime shipments of cars. With this use in peril due to sea level rise and desperate need for more housing in Boston, **our task was to resolve the challenge of creating new housing on a site highly vulnerable to future flooding.**

Our team proposes an elevated neighborhood on a boardwalk level 16' above existing grade, with a floodable parking level below. The new community will be resilient to storm surge. The boardwalk has one central transportation spine to accommodate vehicles for deliveries, drop-off, and fire protection, and is otherwise a pedestrian and bike-only neighborhood. **The design draws people down to the water on the north and south sides of the boardwalk, engaging a saltwater marsh to the South, and the Little Mystic River to the North.**

**The district engages people with water in all its forms:** the south side of the district connects people to the restored historic marsh ecology of the shoreline. The north side connects people to people on, in, above, around, and below the tides. The architecture reinterprets typologies from Bunker Hill and the neighboring industrial waterfront. The mixed-use district provides new housing of diverse typologies above vibrant commercial spaces that frame and engage with the waterfront. **The District emphasizes a central theme - Living with Water.**

### **The south side of the water district is the ecologically focused companion to the north's human focused waterfront.**

Boardwalks from the north side extend toward the south and east, bringing visitors to a tidal salt marsh with four different zones: restored marsh, beach, stormwater treatment marsh,

and an upland gathering space. The zones offer different opportunities for residents and visitors to develop a relationship with this ever-changing natural amenity. The restored salt marshes create habitat and defense against sea level rise. The beach uses a historical ecological typology for sunbathing and swimming. The eastern tip of the site transitions to a less-frequently inundated upland marsh with a boardwalk connecting the northern parks and neighborhood architecture to the restored marsh and a view over the river and lower boardwalk system.

**The north shore of the water district invites a city-wide audience to engage with water, as a key link in the City's shoreline trail master plan.** The design has two framed park areas that extend from the two connections to Bunker Hill. Each engages with water in their own way. The easterly park gets you into and on the water, through swimming piers, and boat and kayak launches. The westerly park engages users with the water cycle and tides, with a tidal park, a living Sea Level Rise Memorial, a stormwater recycling water feature, and a performance venue overlooking the river framed by a monumental proscenium arch inspired by water and a book-end to monument street and response to the Bunker Hill Memorial.

Our team of three students consisted of a 4th year M.Arch/MLA, Connor McManus; a 2nd year MLA, Nicole DePizzo; and a 3rd year M.Arch, Gabby Hansen. Together we devised the concept for the site and then went into detail on certain areas; the North side, the South side, and the building typologies respectively.

site plan



# phasing for sea level rise

## PHASE 1



PHASE 1.2  
AUTOPORT MOVED  
INTO GARAGE

PHASE 1.3  
BUILD MEGA-STRUCTURE

PHASE 1.1  
INFILL DEVELOPMENT

## FLOODS



WHEN THE FLOOD PUSHES  
INDUSTRY OUT...

## PHASE 2



WIND CENTER CONVERTED  
TO SOCCER FIELD

AUTOPORT GARAGE  
CONVERTED TO HOUSING,  
CROSS-RAMPS REMOVED

2ND LEVEL RENOVATED AND  
CONNECTED TO PIER

BRIDGESTONE CONVERTED  
TO MARSH



**south aerial**



**restored marsh**



fishing pier

accessible path to water

boardwalk to marsh

beach dune ecology

**south beach**

PRESENT



low tide mean high tide  
LOW MARSH HIGH MARSH

UPLAND

2100



low tide mean +3' high tide +5' storm +7'

tidal change





boardwalk to channel

collection pool

visitor center + maintenance lab

runoff thorough marsh

**stormwater treatment marsh**



dining boardwalk

view of river

connective boardwalk

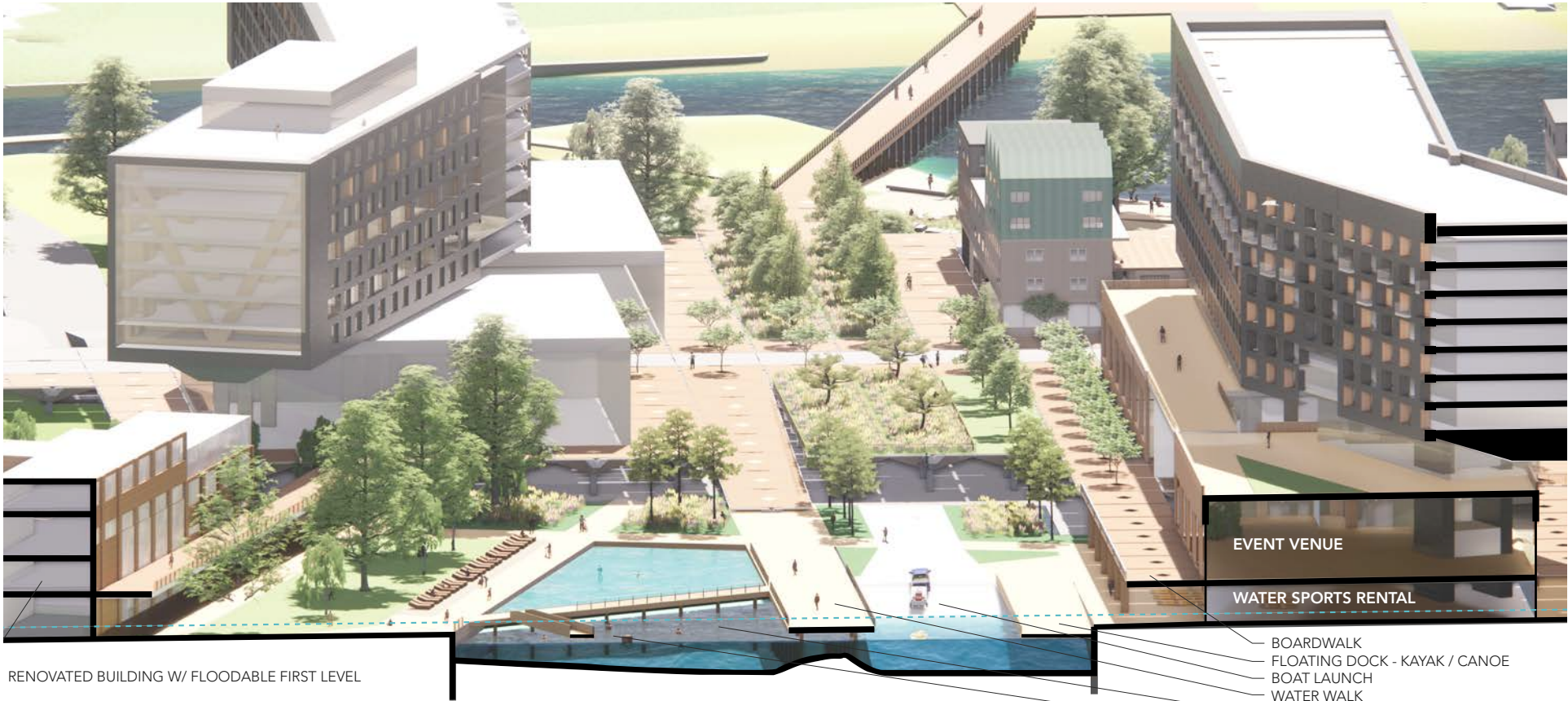
upland marsh ecosystem

**upland gathering**



## north waterfront

1. plant-filtered swimming pool
2. floating dock/river swimming
3. boat launch
4. kayak/canoe rental (floating dock)
5. event space
6. living SLR memorial
7. great lawn
8. elevated beach
9. tidal terraces
10. stage
11. stormwater amphitheater
12. central spine



RENOVATED BUILDING W/ FLOODABLE FIRST LEVEL

EVENT VENUE

WATER SPORTS RENTAL

- BOARDWALK
- FLOATING DOCK - KAYAK / CANOE
- BOAT LAUNCH
- WATER WALK
- SWIMMING POOL
- NATURAL SWIMMING/ FLOATING DOCK

**section through swimming harbor**



swimming harbor



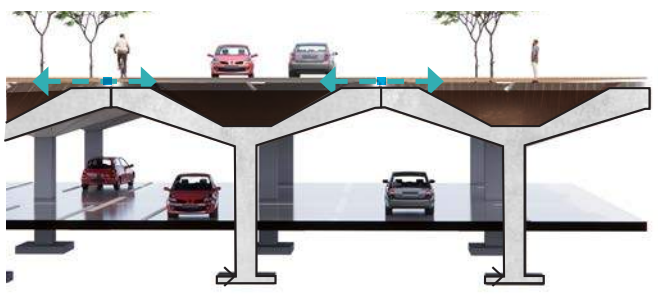
**great lawn and water terraces**



GREAT LAWN  
 TIDAL ROCK BEACH  
 ELEVATED BEACH

AMPHITHEATER  
 PROSCENIUM ARCH  
 PERFORMANCE STAGE

RECIRCULATING STORMWATER CLEANING/OXYGENATION  
 BOARDWALK W/ INTEGRATED WATER MGMT  
 GREEN ROOF CAPTURE+IRRIGATION

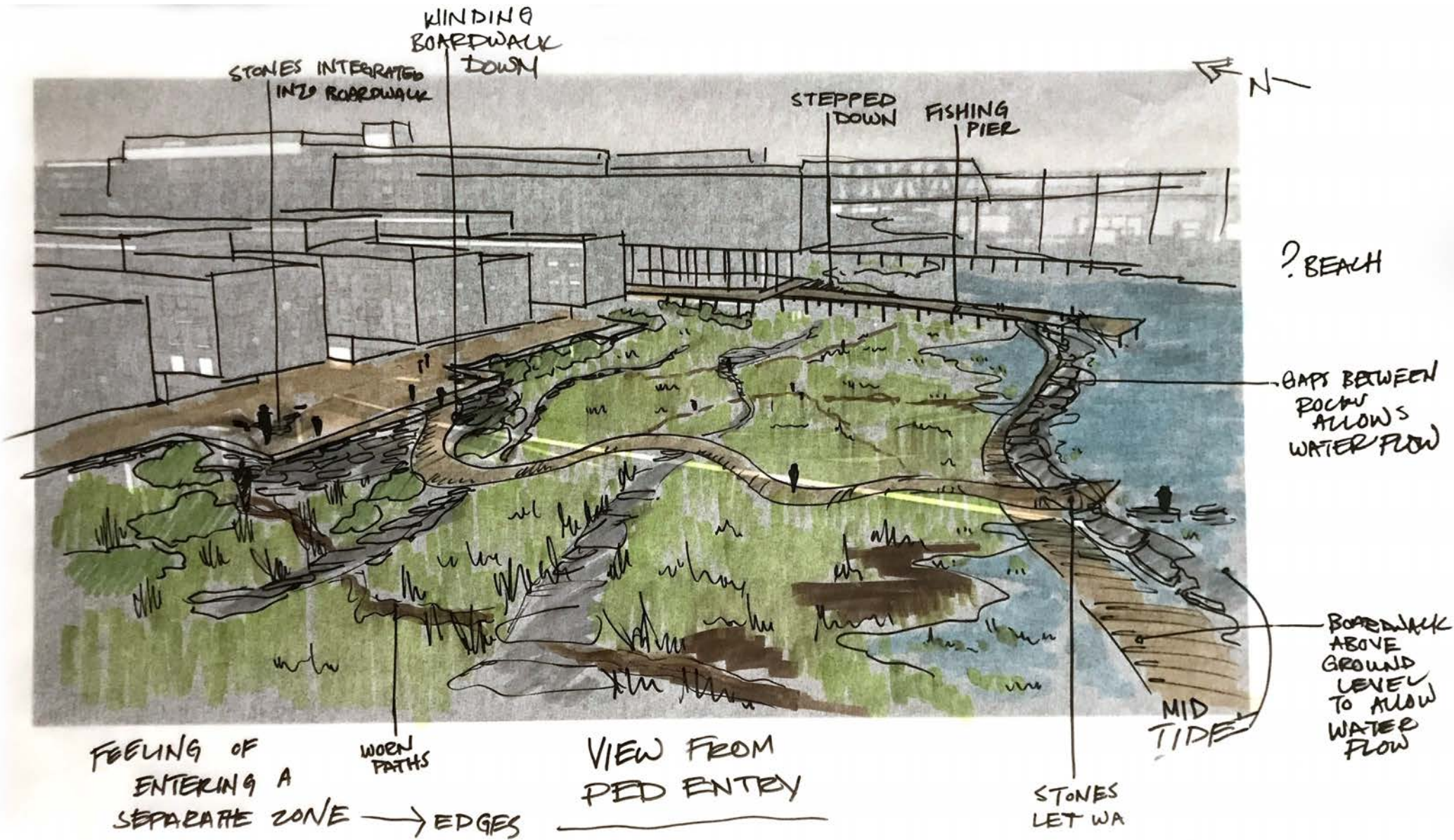


**section through water terraces and parking level**



**boardwalk spine**







ROAD  
WALK

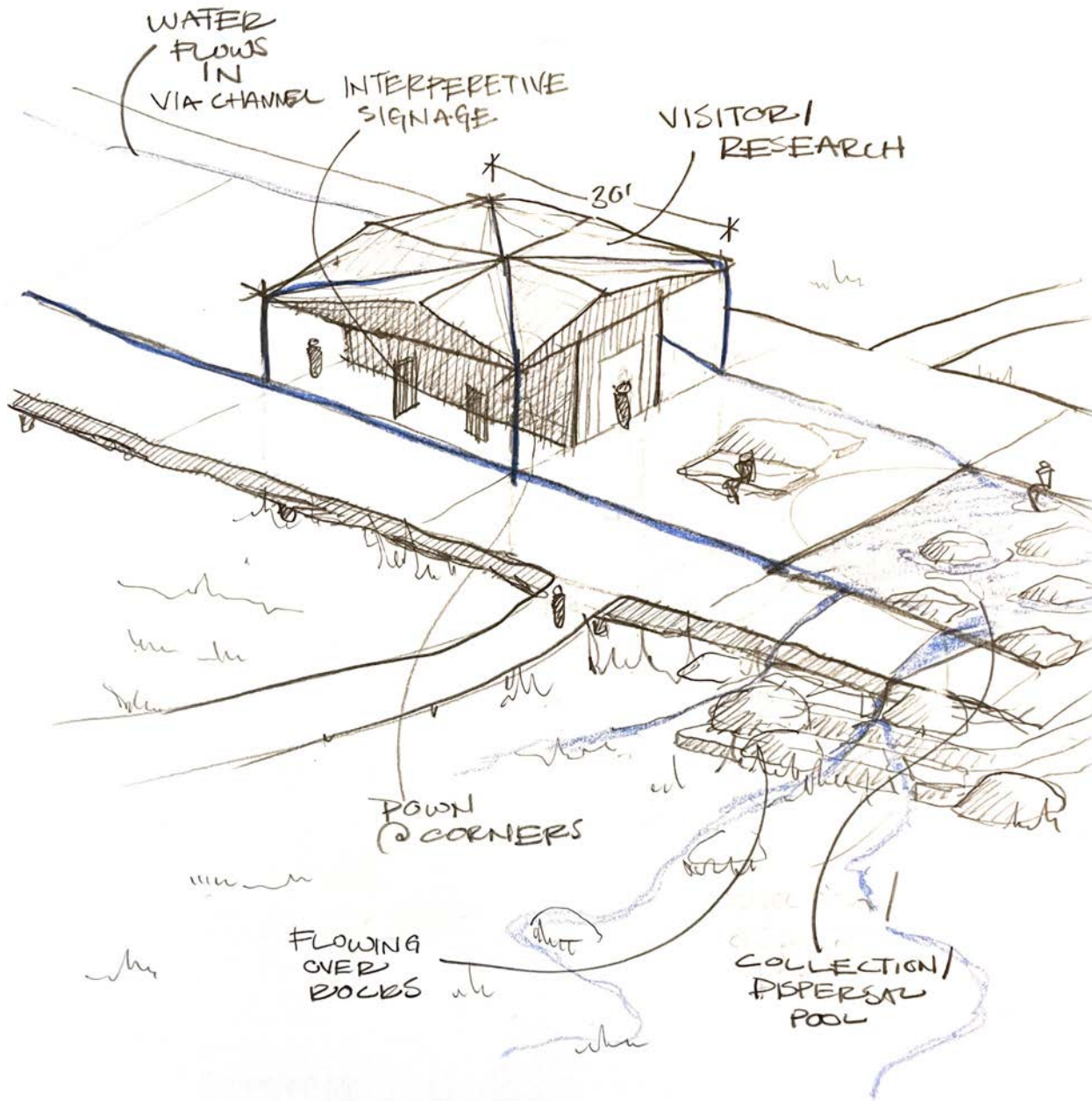
SALT  
MARSH

FISHING  
PIER

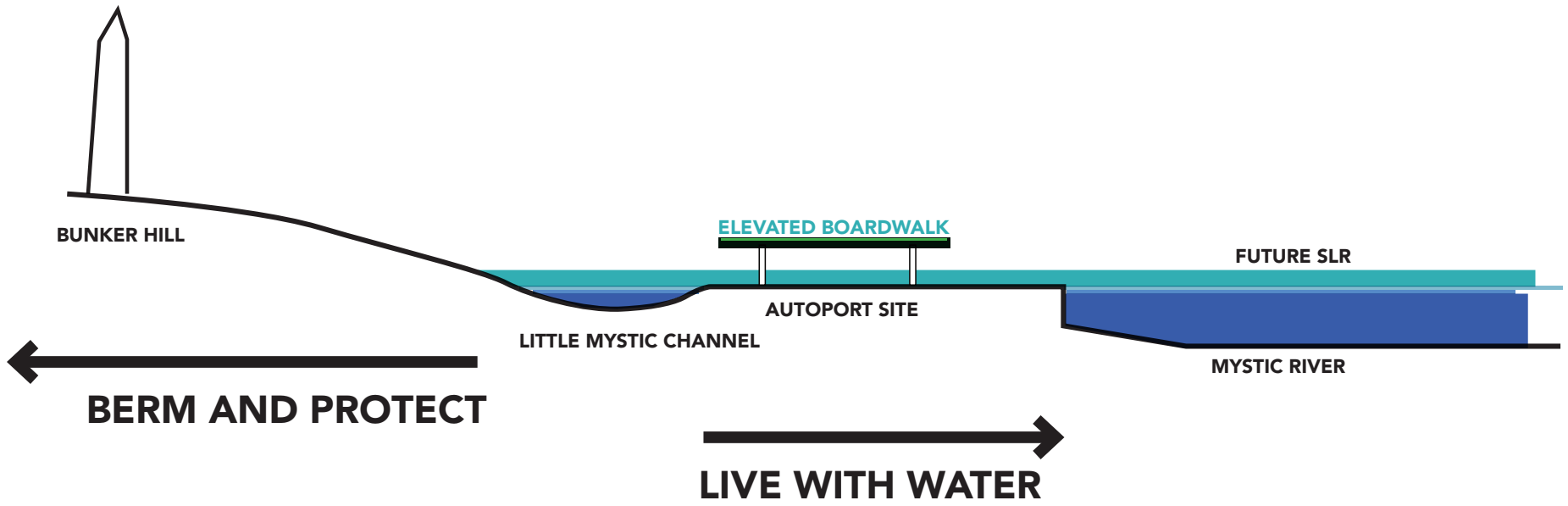
RAMP  
BOARDWALK  
BEACH  
BORDERED  
BY MARSH



charlestown water district | process



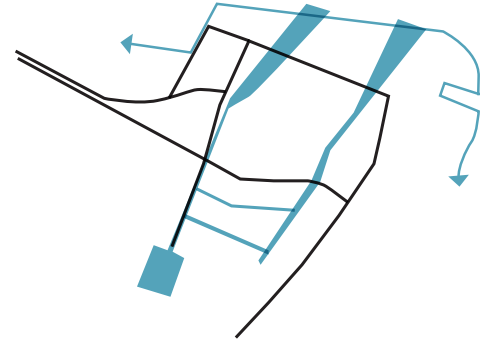




before

after

car + pedestrian

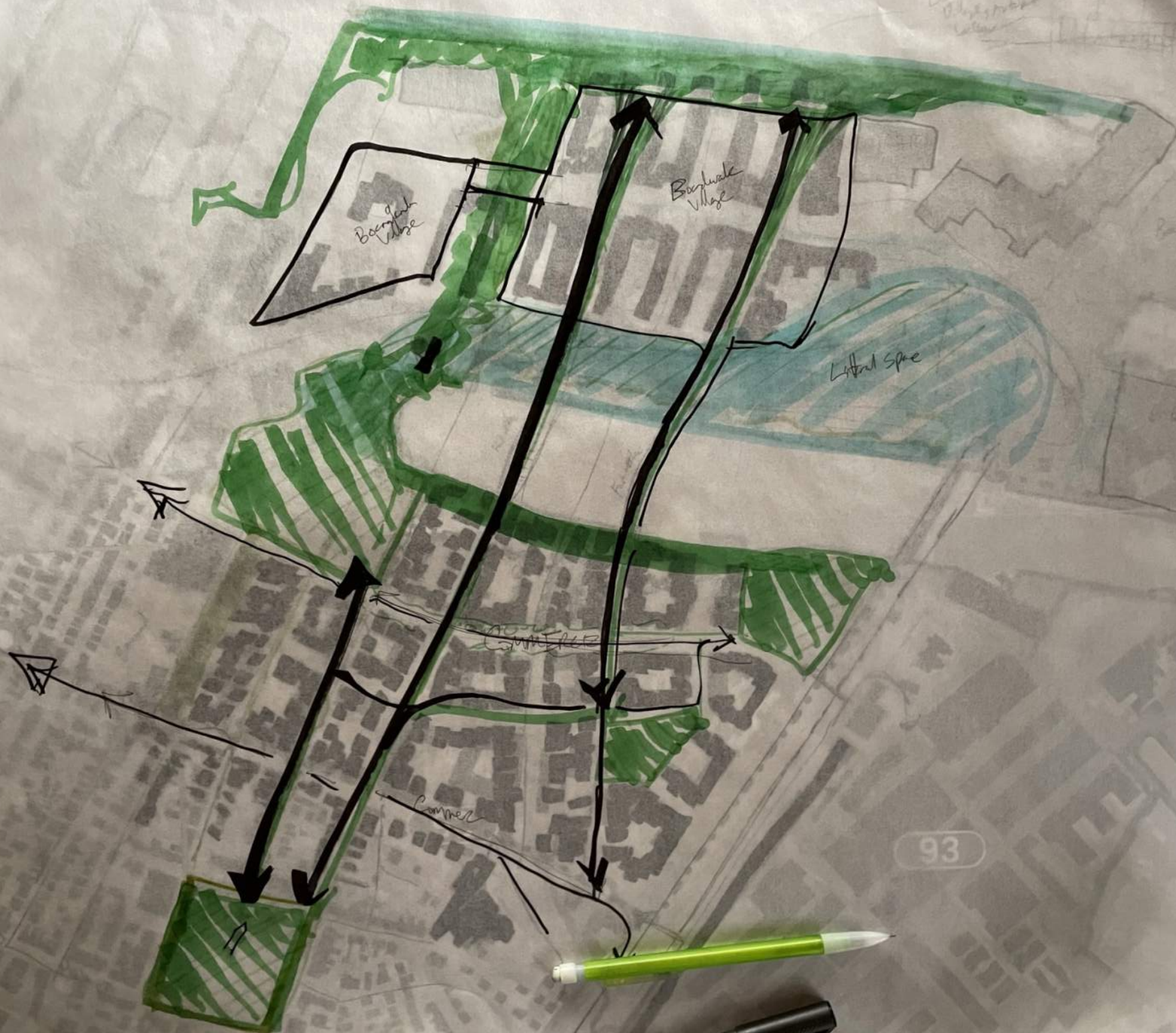


figure/ground





charlestown water district | process



Beograd Village

Beardvale Village

Lithal Spire

CORRIDOR

CORNER

93



