

# NORTH MILL POND GREENWAY AND COMMUNITY PARK

FINAL REPORT  
PREPARED BY HALVORSON DESIGN

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# SECTION 1

# OVERVIEW

EXECUTIVE SUMMARY  
GUIDING PRINCIPLES





# EXECUTIVE SUMMARY

In August 2018, the Portsmouth Planning Department engaged Halvorson Design and their consultants, Tighe & Bond and DeRosa Environmental to develop a conceptual design for a linear greenway and community park along the North Mill Pond which will create a new north-south pedestrian and bicycle connection from Bartlett Street to Market Street. This multi-use public path with civic amenities is envisioned to be constructed along the southeast shoreline of the pond, will include wetland restoration and pond edge stabilization, and is anticipated to be designed and constructed through a series of public-private partnerships with private land owners.

The intent of the project is to connect Downtown Portsmouth both to adjacent neighborhoods and to proposed transportation, complete streets, bike and greenway improvements at Market Street, Maplewood Avenue and Bartlett Street. In addition, the previously underutilized areas will create valuable new accessible open space and wildlife habitat along the water's edge which will become an ecologically healthy, socially vibrant and educational destination for residents and visitors alike. The proposed greenway site area and alignment is located primarily on private properties, with the exception of a proposed community park space adjacent to the new AC Hotel on Vaughan Street.

The conceptual design process began with a site visit and a kickoff meeting with the City of Portsmouth Planning, Public Works and Engineering Departments. The design team developed existing conditions and site analysis documentation based on site visits and input from the City. Drone video and pedestrian level photography was used as a visual aid to assist the public in understanding the site context and linkages the Greenway will create.

Existing conditions, site analysis, conceptual design plans, precedent imagery and a flyover video were presented at a public meeting on December 19, 2018 to introduce the Greenway Conceptual Design to the public. As a result of public input, the design team has refined and presented the updated conceptual greenway design to the Portsmouth Conservation Commission, New Hampshire Department of Environmental Services and property owners.

The community expressed support for coastal bank stabilization, wildlife habitat protection and voiced the importance of the North Mill Pond shoreline as a natural resource to be preserved and enhanced. The Conservation Commission and Department of Environmental Services viewed North Mill Pond as a suitable location for living shoreline opportunities and restoration of riparian and coastal habitats in concert with the implementation of the Greenway.

This document concludes the Conceptual Design Phase and serves as the framework for the next steps including final design of the community park and further design refinement of the North Mill Pond Greenway.





### Create New Destinations and Opportunities

Integrate opportunities for passive recreation, education and celebration of natural resources within the community.



### Improve Multi-Modal Connections

Facilitate multi-modal interconnectivity between neighborhoods, downtown, adjacent Complete Streets improvements, integrate with the Portsmouth Bicycle and Pedestrian Plan and reduce vehicular dependency.



### Expand Public Access to Water's Edge

Create visual and physical opportunities to access the pond and shoreline, with convenient access points for residents and visitors.



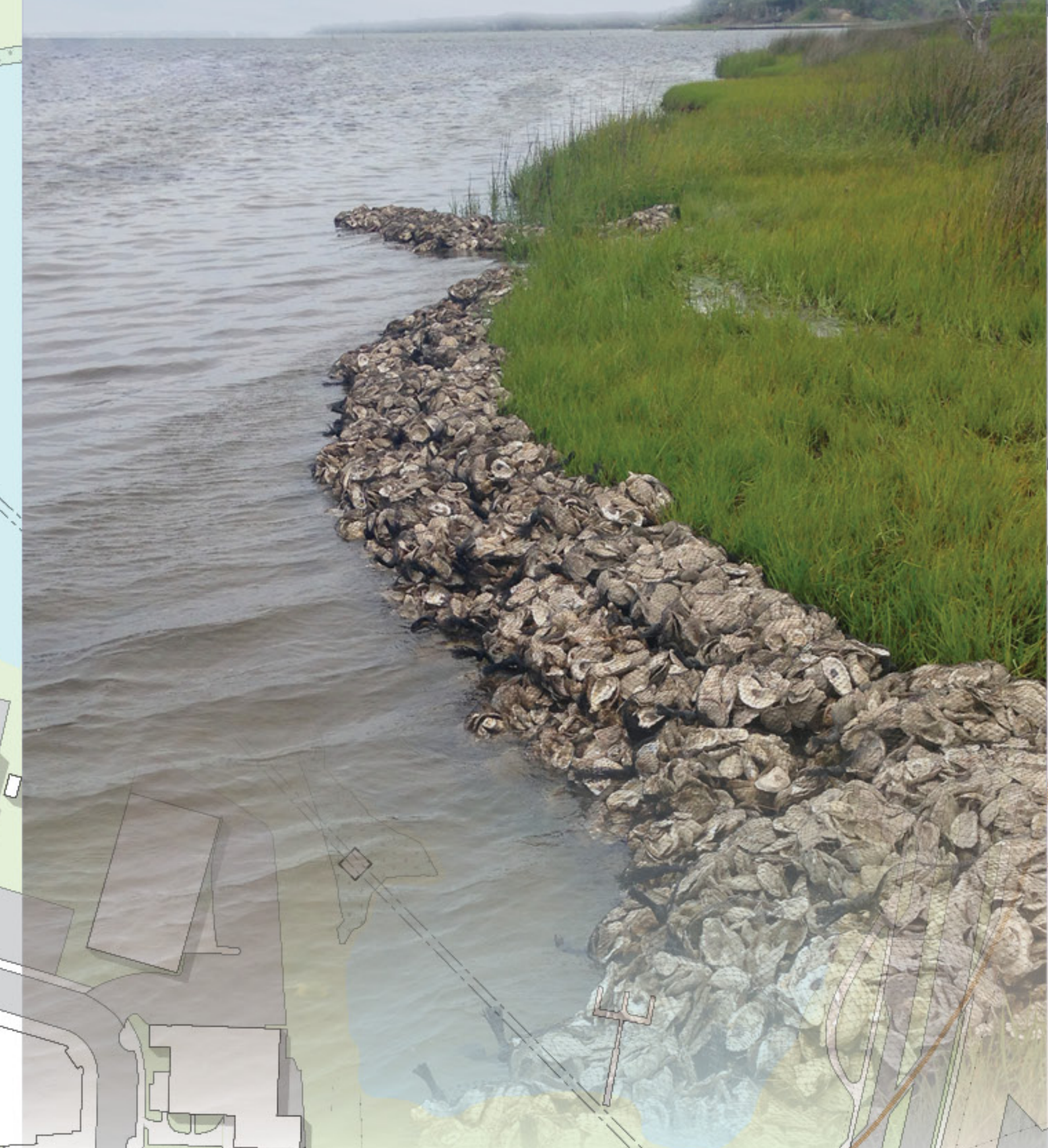
### Restore Riparian and Coastal Habitats

Increase biodiversity through removal of invasive species, installation of native plantings, restoration of shorelines and coastal bank stabilization.



### Integrate Climate Resiliency Strategies

Consider the effects of climate change and integrate solutions with durable materials that help mitigate adverse effects of sea level rise and excess stormwater.



# GUIDING PRINCIPLES



## SECTION 2

# RECORD MATERIALS

FINAL CONCEPTUAL DESIGN - DIGITAL SLIDES





# NORTH MILL POND GREENWAY PORTSMOUTH, NH

FEBRUARY 2019



**Tighe & Bond**  
Engineers | Environmental Specialists

**HALVORSON DESIGN**  
PARTNERSHIP

**DEROSA** Environmental Consulting, Inc.



# EXISTING CONDITIONS NORTH MILL POND GREENWAY



- LEGEND**
- Highest Observable Tide Line
  - 25' Wetland Buffer
  - 100' Wetland Buffer
  - Parcels
  - Vehicular Route
  - Bike / Pedestrian Corridor
  - View Corridors
  - View Corridor and Informal Crossing
  - Scenic Views
- Existing Conditions**



EXISTING OVERHEAD UTILITY AND STRUCTURES

SCENIC VIEW, TYPICAL

STORMWATER OUTFALL

DEGRADED URBAN SHORELINE

DELINEATED WETLAND

MARKET ST BIKE / PEDESTRIAN CORRIDOR

SEAWALL

MAPLEWOOD AVE BIKE / PEDESTRIAN CORRIDOR

SCENIC VIEWS, TYPICAL

100' WETLAND BUFFER

25' WETLAND BUFFER

HIGHEST OBSERVABLE TIDE LINE

DEGRADED URBAN SHORELINE

SCENIC VIEW, TYPICAL

SCENIC VIEW, TYPICAL

STORMWATER OUTFALL

RESTORED SALT MARSH

STORMWATER OUTFALL

CULVERT INLET

STORMWATER OUTFALL

STORMWATER OUTFALL

VEHICULAR CIRCULATION

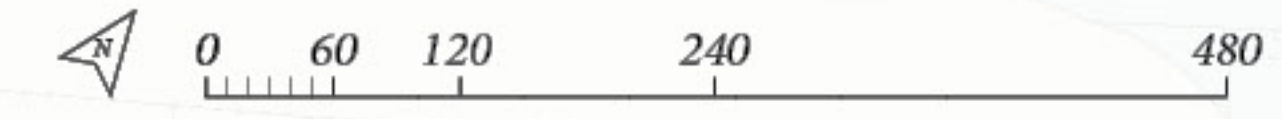
VIEW CORRIDOR, TYP.

VIEW CORRIDOR AND INFORMAL PEDESTRIAN CROSSING, TYP.

VEHICULAR ROUTE

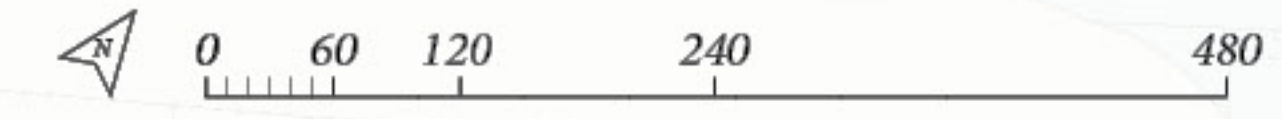


# EXISTING SITE PHOTOGRAPHS NORTH MILL POND GREENWAY



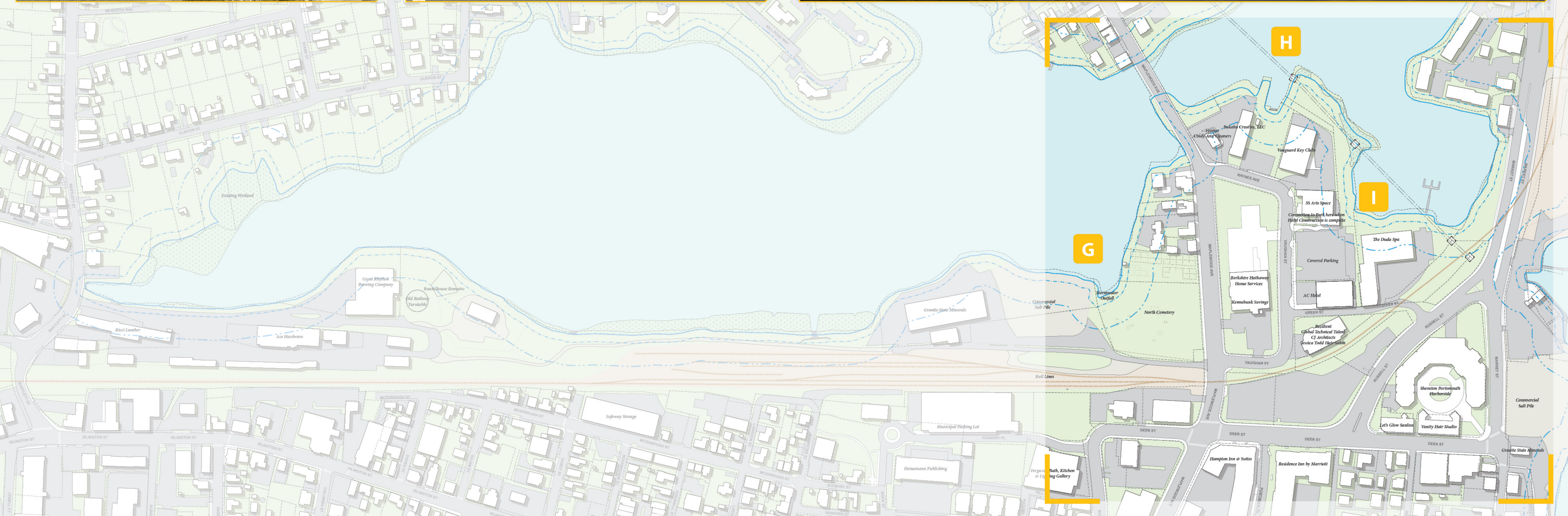
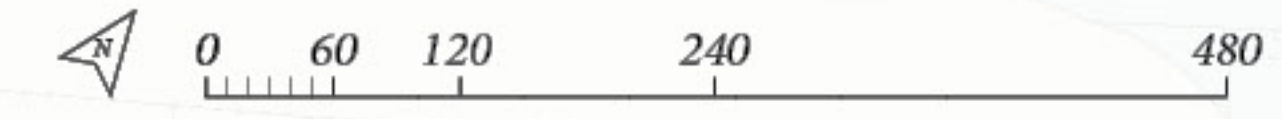


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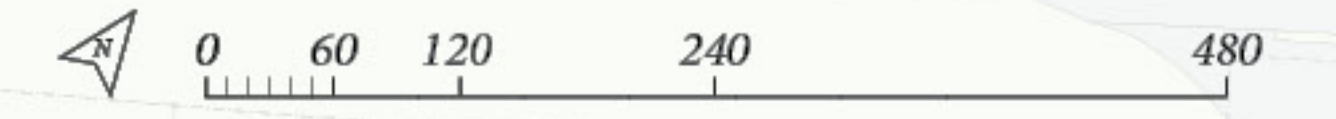


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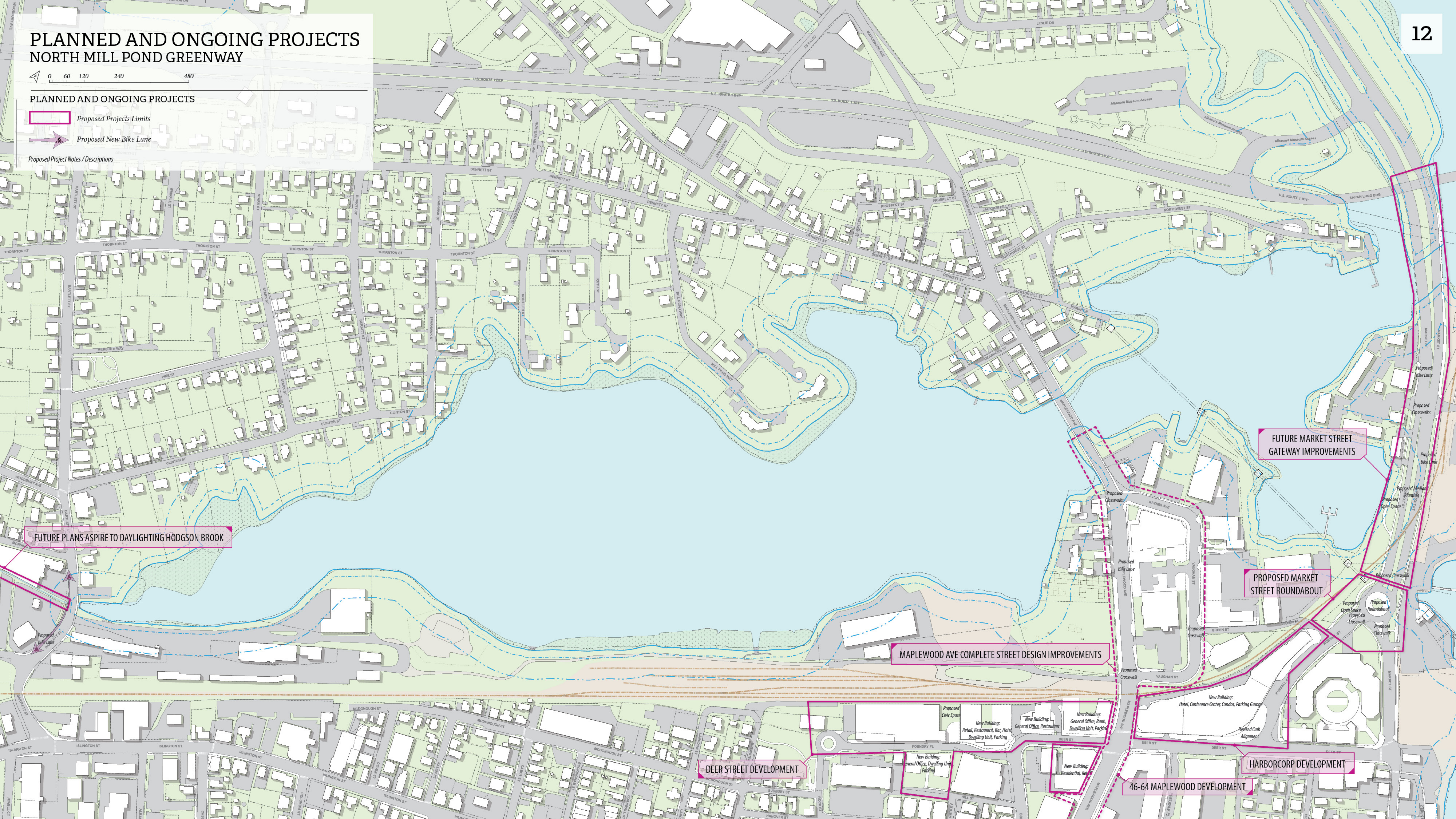


# PLANNED AND ONGOING PROJECTS NORTH MILL POND GREENWAY



## PLANNED AND ONGOING PROJECTS

- Proposed Projects Limits
- Proposed New Bike Lane
- Proposed Project Notes / Descriptions*



FUTURE PLANS ASPIRE TO DAYLIGHTING HODGSON BROOK

FUTURE MARKET STREET GATEWAY IMPROVEMENTS

PROPOSED MARKET STREET ROUNDABOUT

MAPLEWOOD AVE COMPLETE STREET DESIGN IMPROVEMENTS

DEER STREET DEVELOPMENT

46-64 MAPLEWOOD DEVELOPMENT

HARBORCORP DEVELOPMENT

Proposed Civic Space  
New Building: Retail, Restaurant, Bar, Hotel, Dwelling Unit, Parking  
New Building: General Office, Restaurant  
New Building: General Office, Bank, Dwelling Unit, Parking

New Building: Hotel, Conference Center, Condos, Parking Garage  
Revised Curb Alignment

New Building: General Office, Dwelling Unit, Parking  
New Building: Residential, Retail

Proposed Open Space  
Proposed Roundabout  
Proposed Crosswalk

Proposed Median Planting  
Proposed Open Space

Proposed Crosswalk  
Proposed Bike Lane

Proposed Crosswalk  
Proposed Crosswalk

Proposed Crosswalk  
Proposed Bike Lane

Proposed Crosswalk  
Proposed Bike Lane

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Proposed Crosswalk  
Proposed Crosswalk










# PROPOSED GREENWAY ALIGNMENT

## NORTH MILL POND GREENWAY



### GREENWAY ALIGNMENT

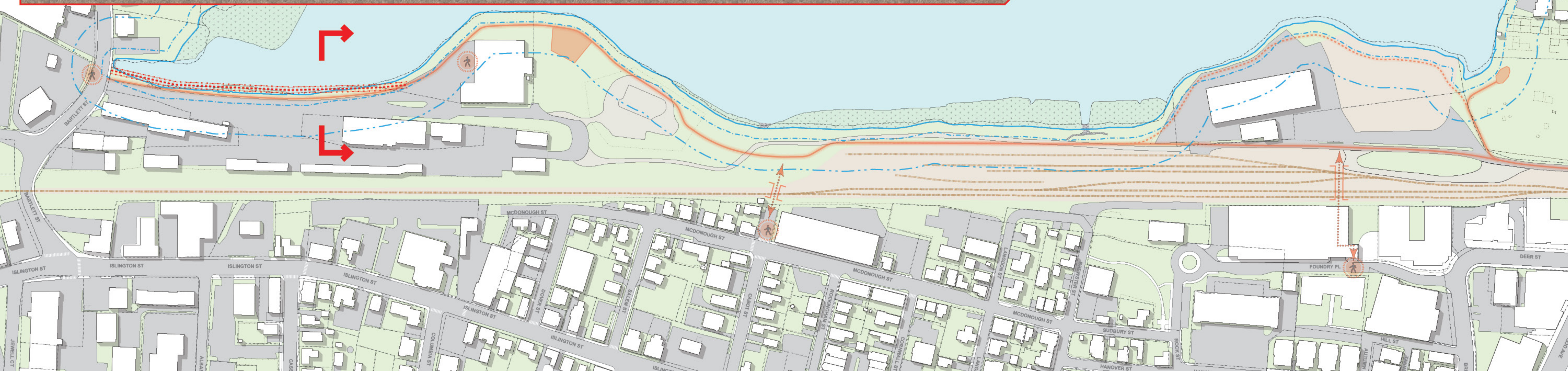
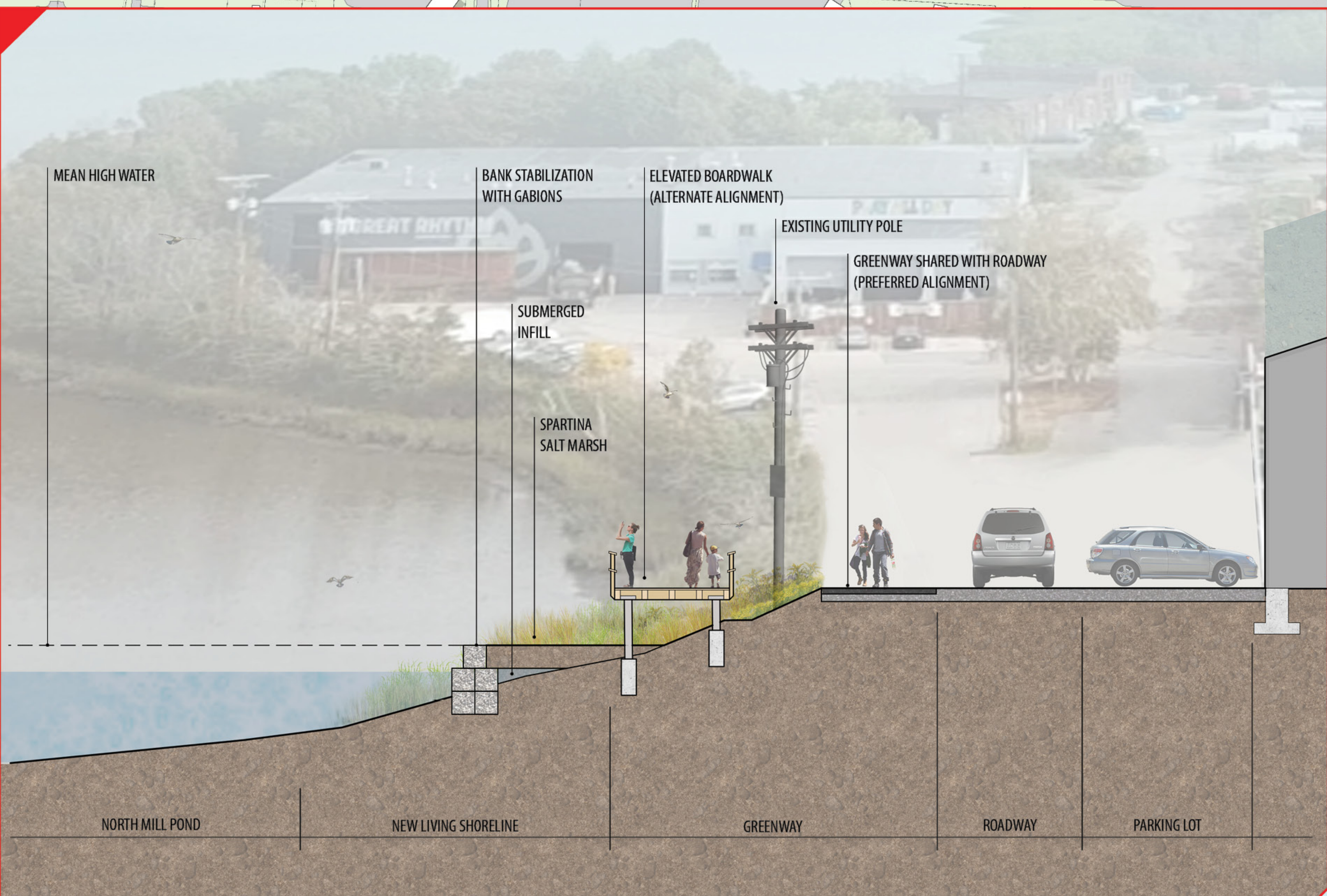
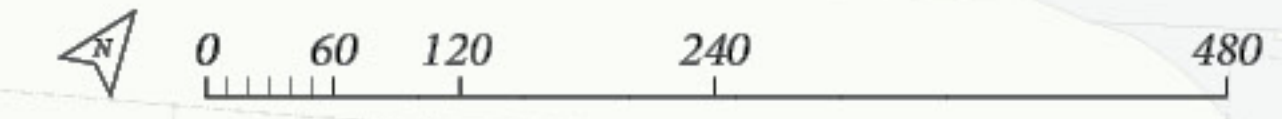
-  Invasive Species to be Removed
-  Preferred Alignment
-  Alternate Raised Boardwalk
-  Alternate Alignment
-  Connector Path
-  Connection via Existing Sidewalk
-  Rail Junction





# BOARDWALK: SECTIONS AND PRECEDENT IMAGES

## NORTH MILL POND GREENWAY



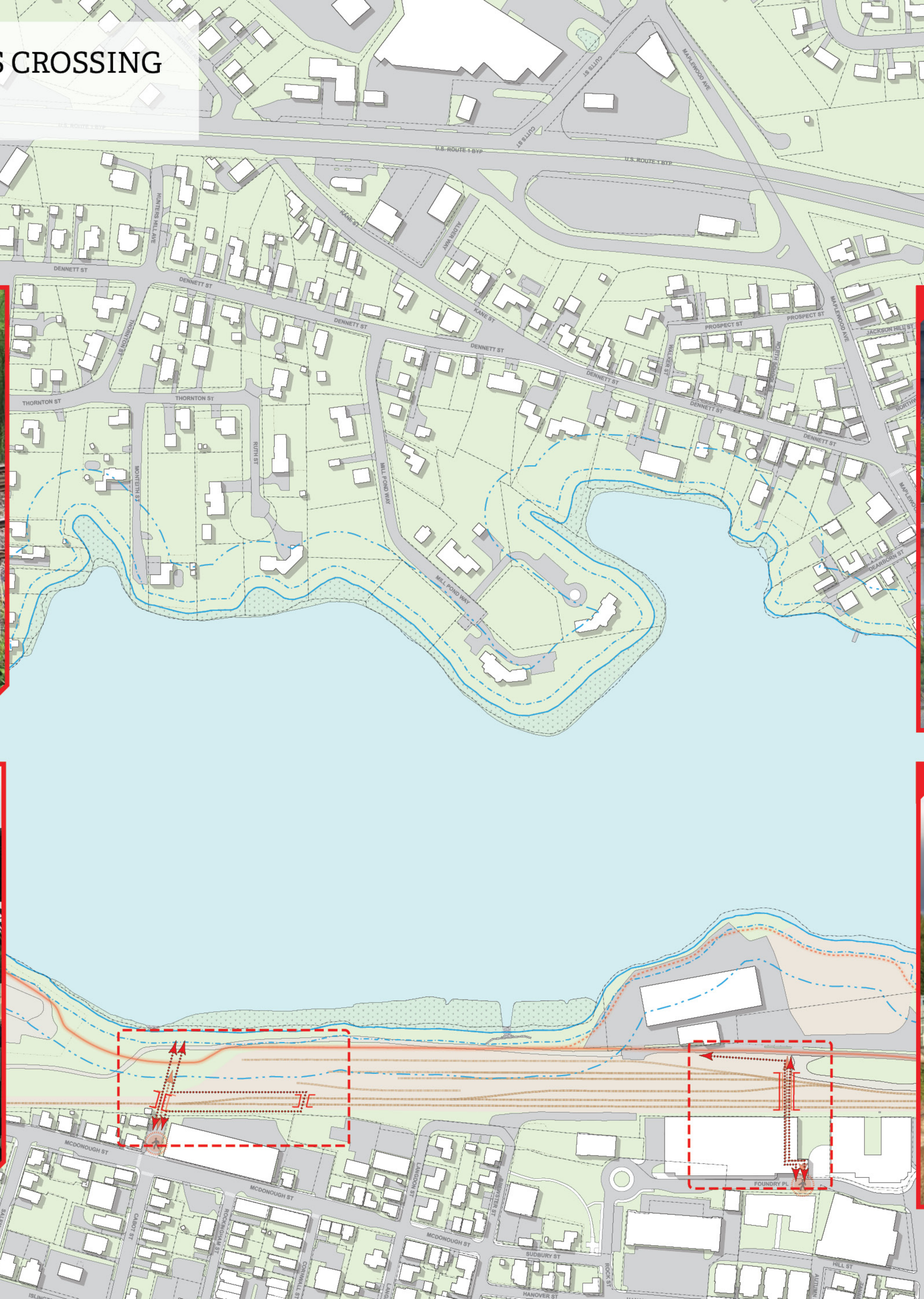


# RAILWAY CROSSING: AT GRADE VS. OVERPASS CROSSING NORTH MILL POND GREENWAY

0 60 120 240 480

## OPTION 1

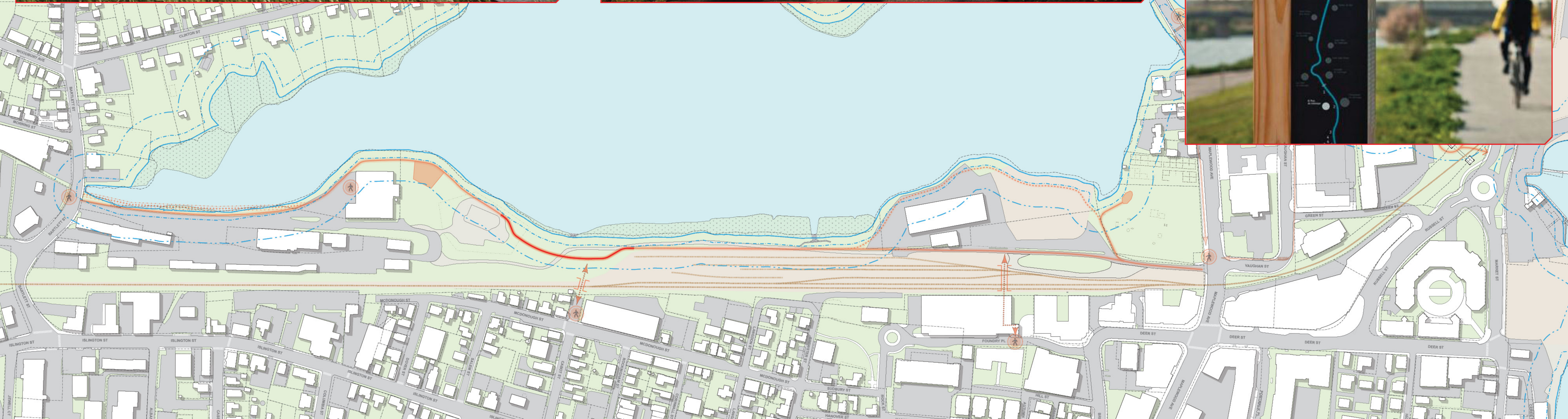
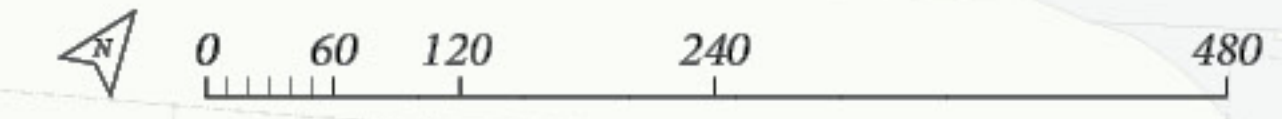
## OPTION 2





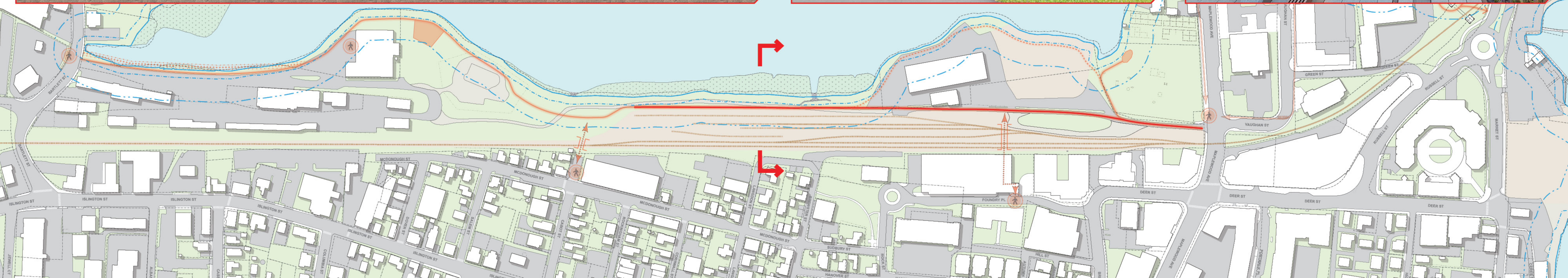
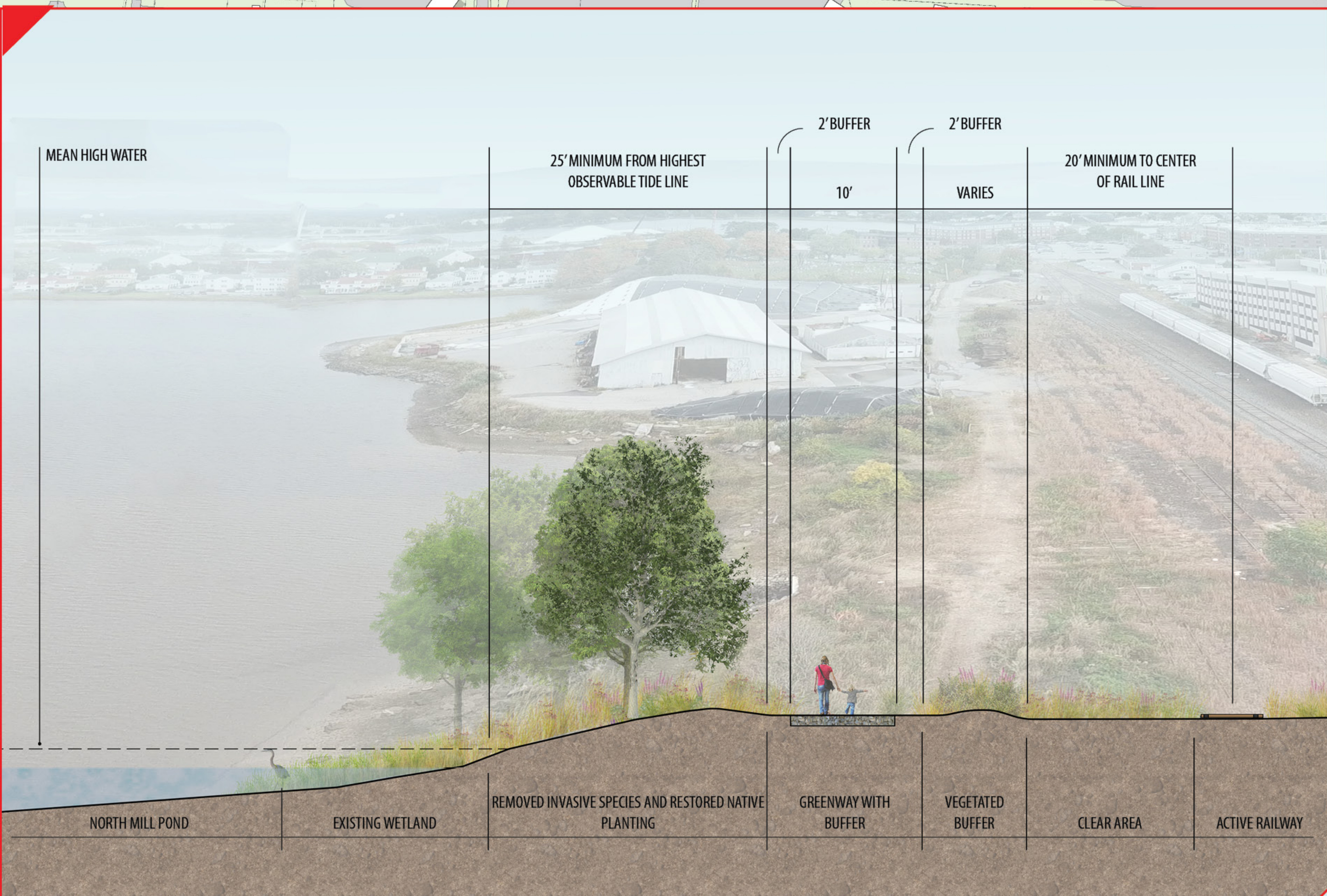
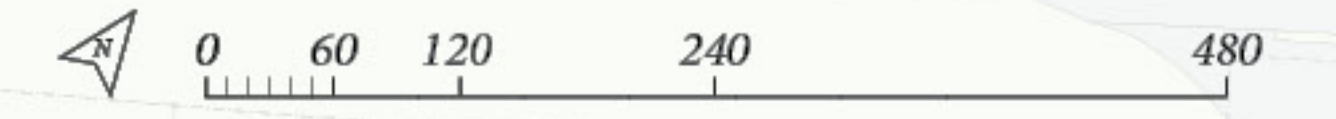
# SHORELINE TRAIL: SECTIONS AND PRECEDENT IMAGES

## NORTH MILL POND GREENWAY





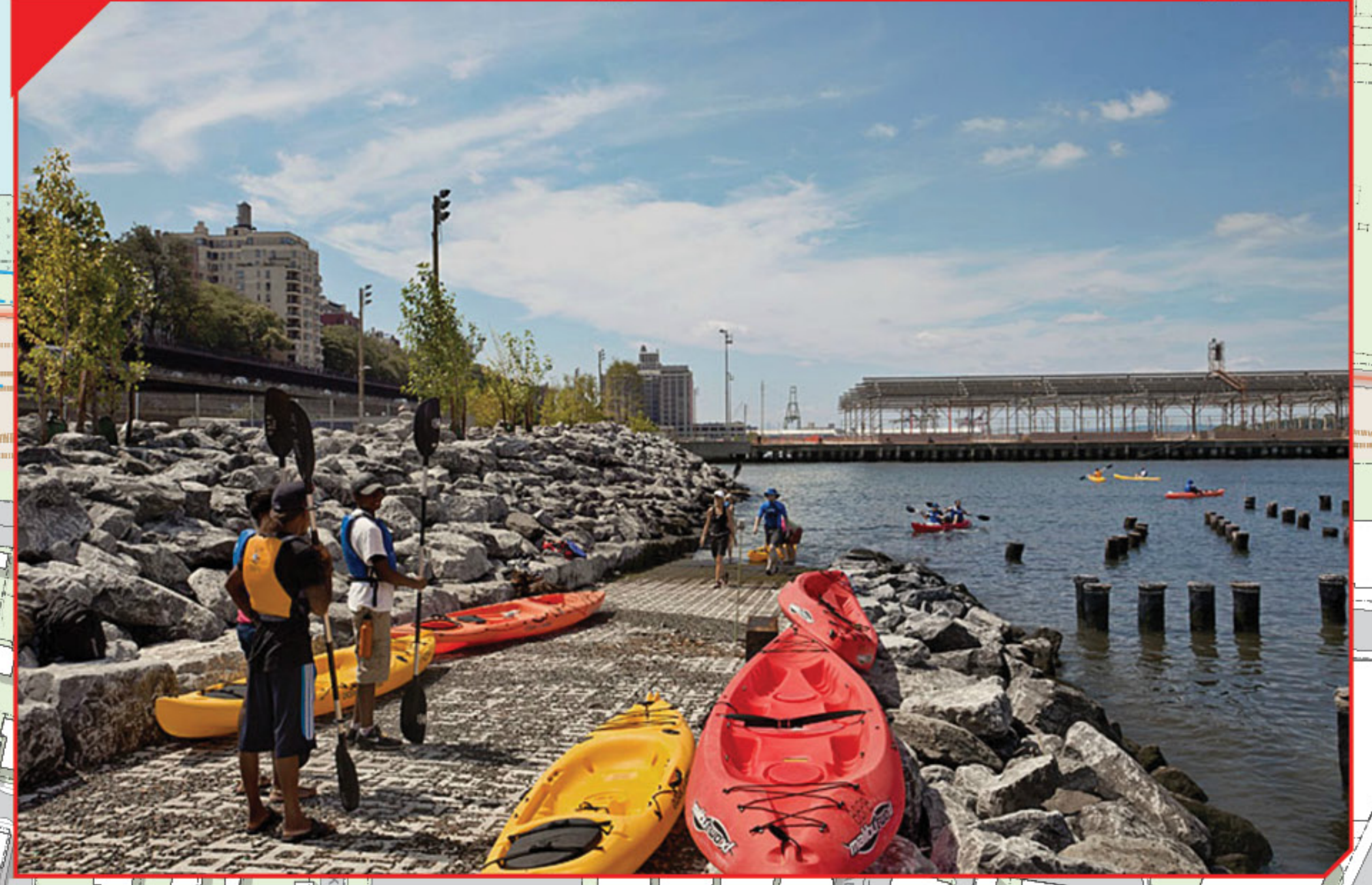
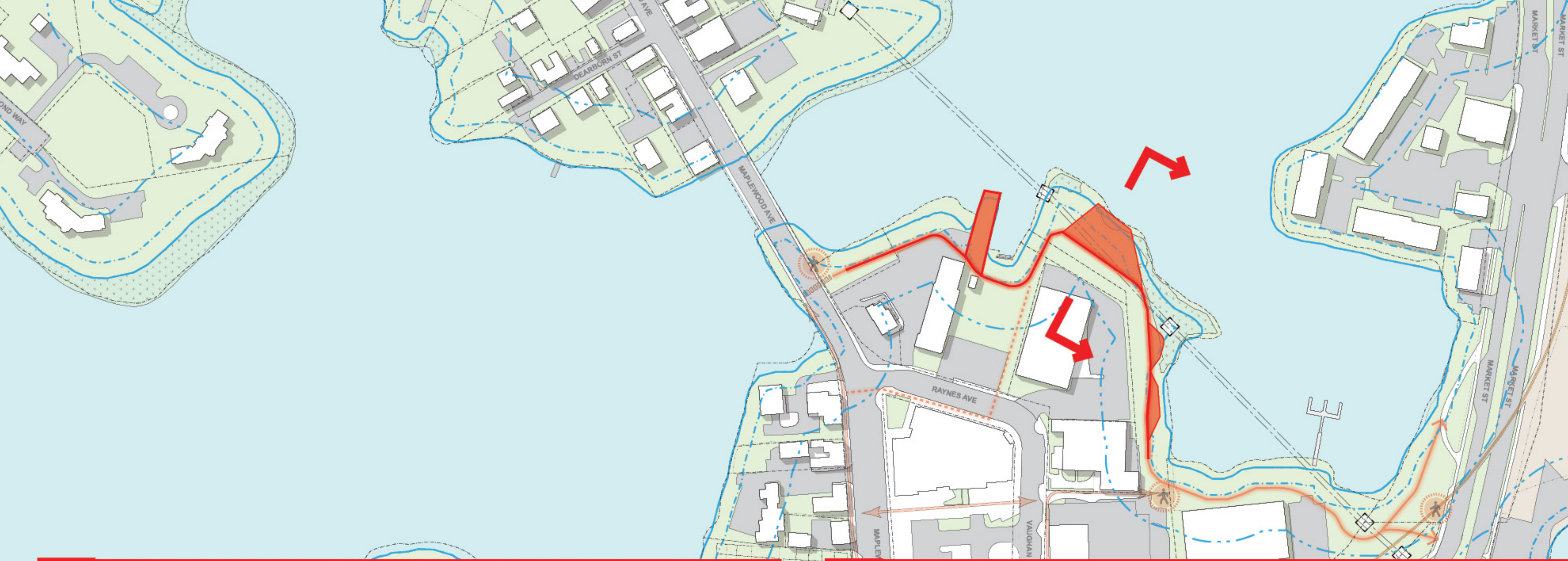
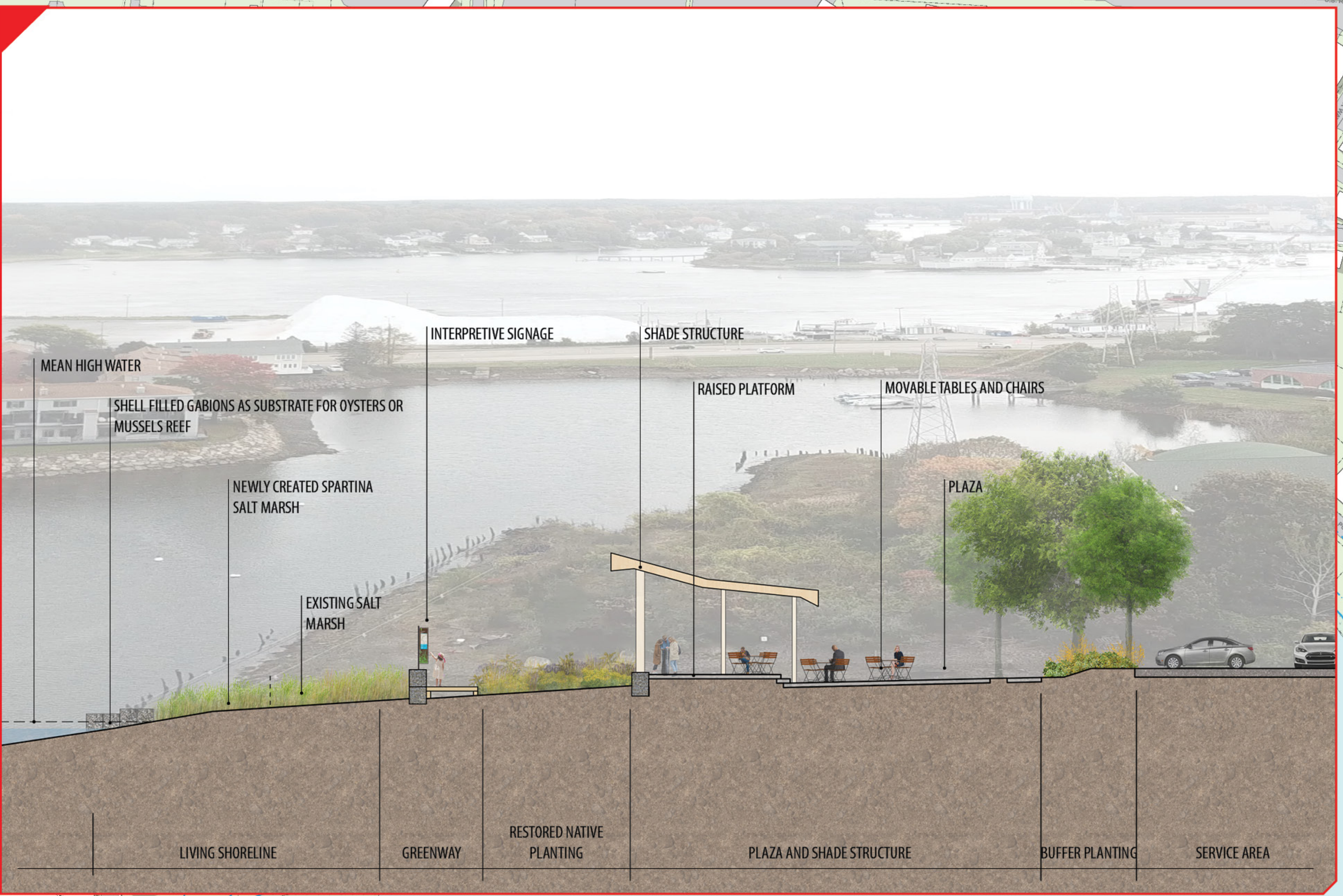
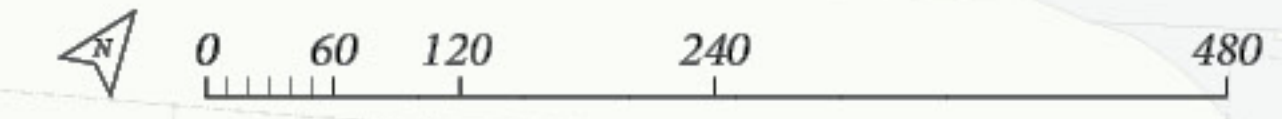
# TRAIL ADJACENT TO RAILYARD: PRECEDENT IMAGES NORTH MILL POND GREENWAY





# COMMUNITY PARK: SECTIONS AND PRECEDENT IMAGES

## NORTH MILL POND GREENWAY





EXISTING DEGRADED SHORELINE  
NORTH MILL POND GREENWAY







INVASIVE PLANT INVENTORY - NORTH MILL POND



AUTUMN OLIVE



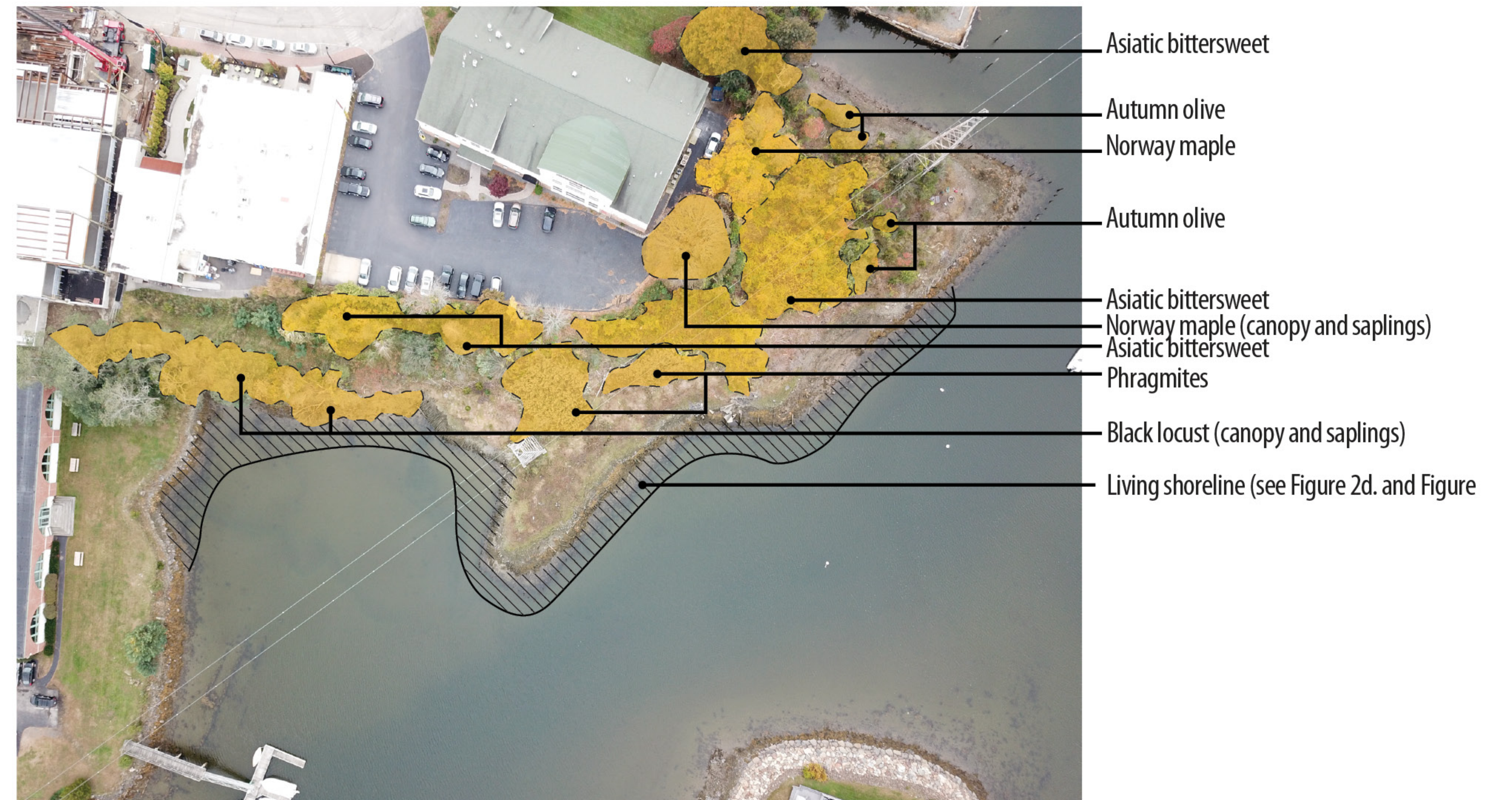
COMMON REED - PHRAGMITES



GLOSSY BUCKTHORN



ASIATIC BITTERSWEET

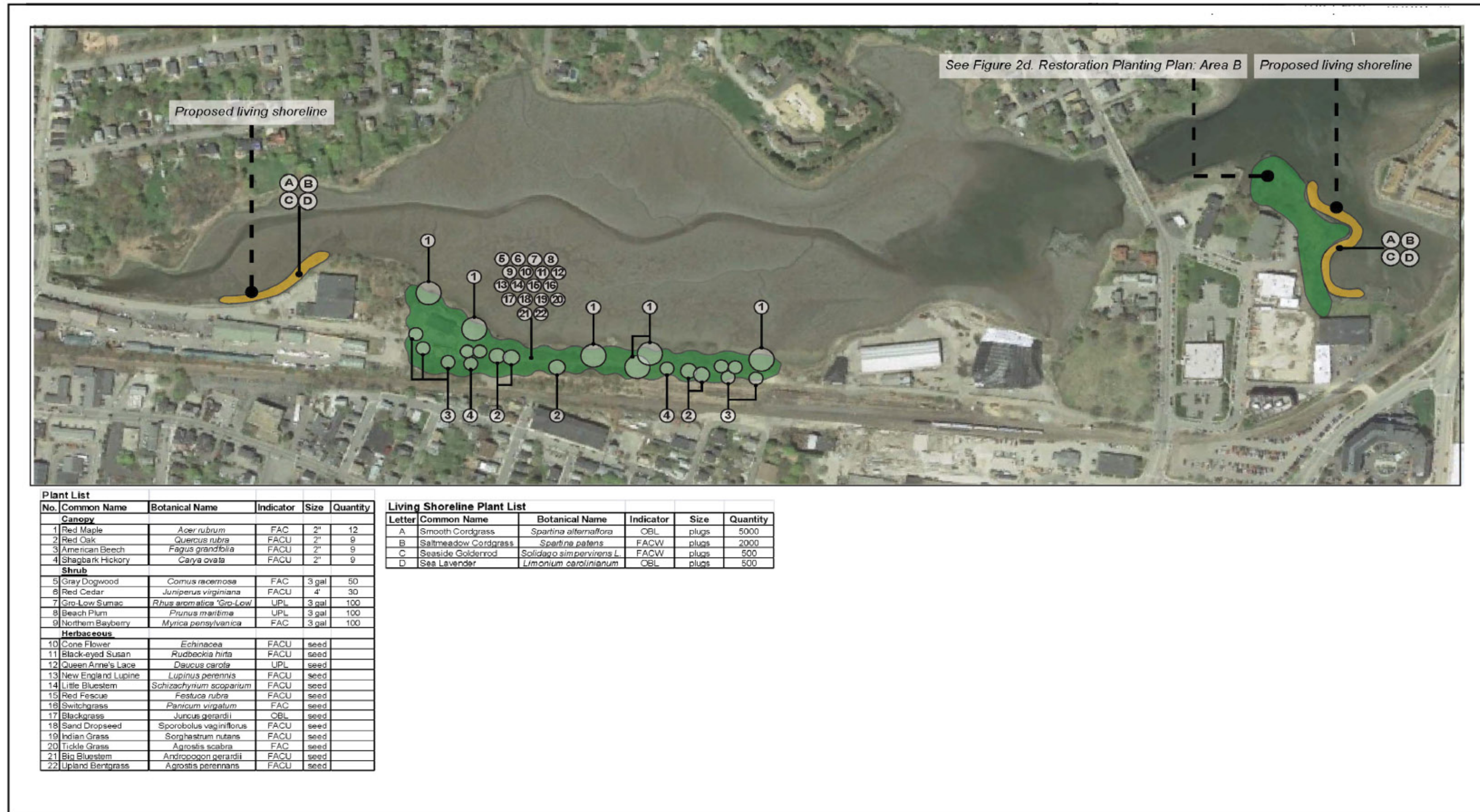


INVASIVE PLANT INVENTORY - COMMUNITY PARK

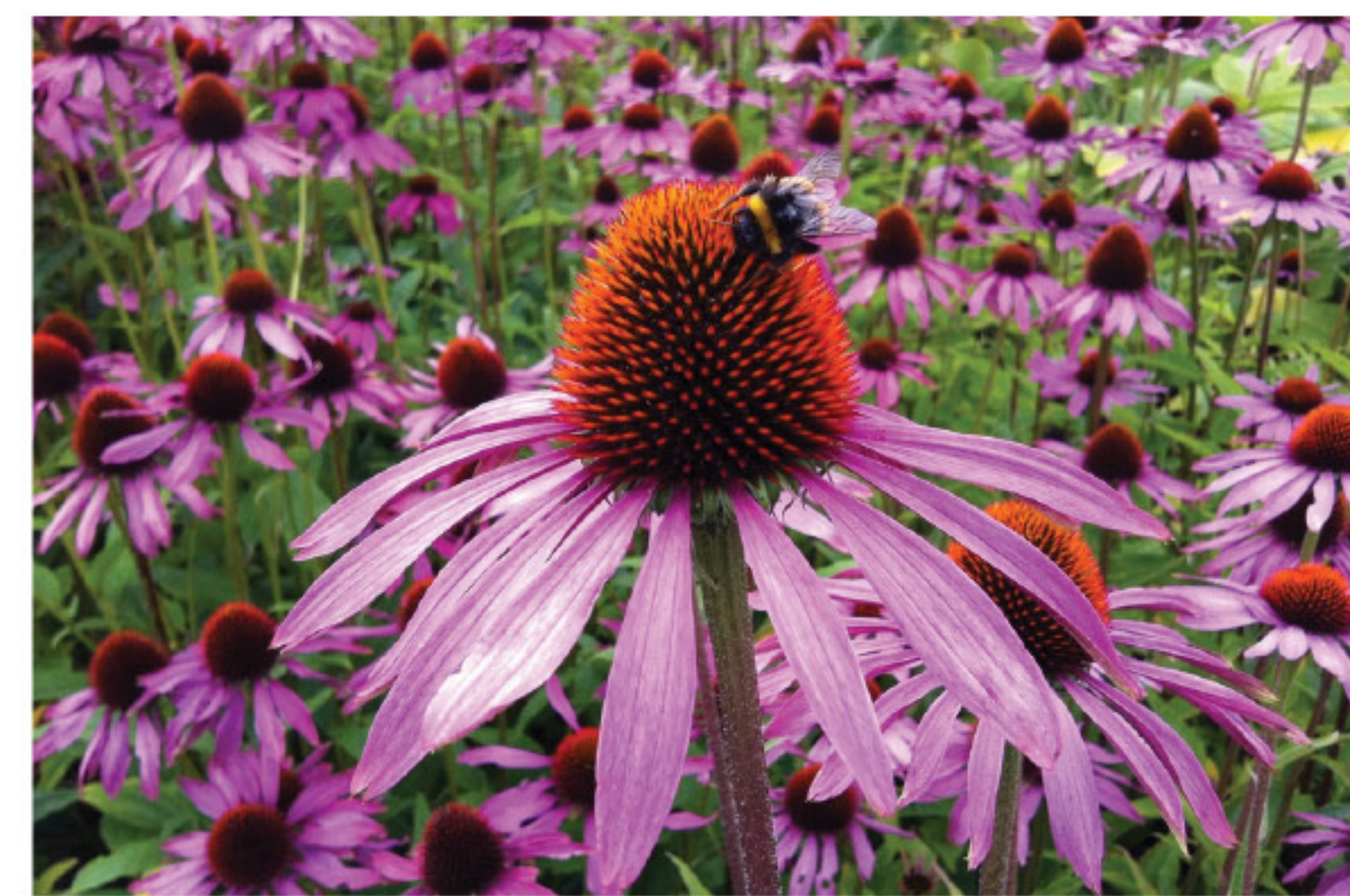


# ECOLOGICAL RESTORATION OPPORTUNITIES: RESTORATION PLANTING PLANS

## NORTH MILL POND GREENWAY



RESTORATION OPPORTUNITIES - NORTH MILL POND



PURPLE CONEFLOWER



RED MAPLE



BEACH PLUM



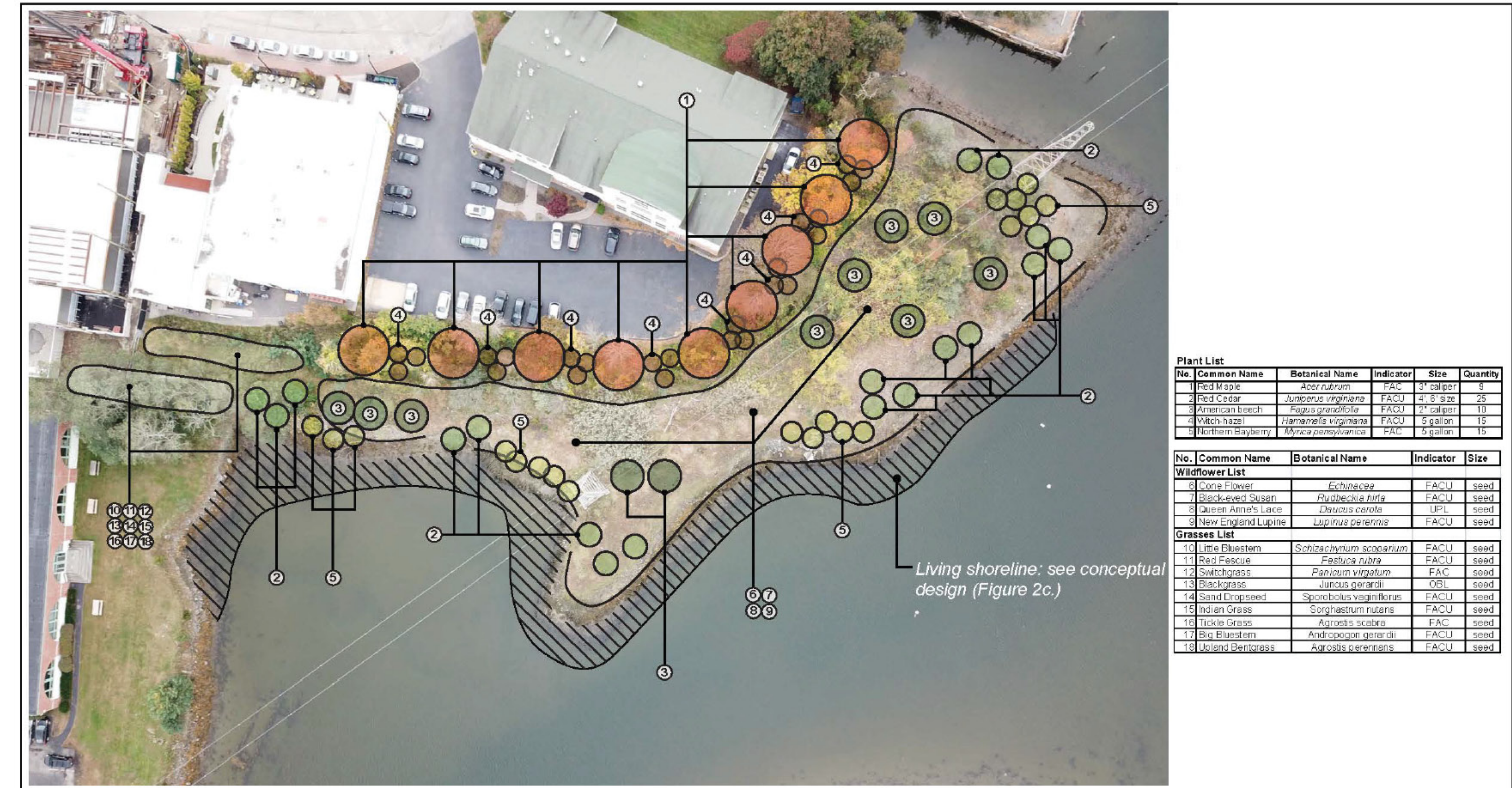
AMERICAN BEECH



NEW ENGLAND LUPINE



LITTLE BLUESTEM



RESTORATION OPPORTUNITIES - COMMUNITY PARK





GABIONS WITH OYSTER SHELL AND ROCK



COIR LOGS & STRUCTURAL GEOTEXTILES



COIR LOGS AND HIGH AND LOW MARSH PLANTINGS  
AFTER TWO YEARS OF ESTABLISHMENT



MARSH GRASS PLANTINGS INSTALLED WITH COIR BLANKET



SALVAGED GRANITE BLOCK CELLS

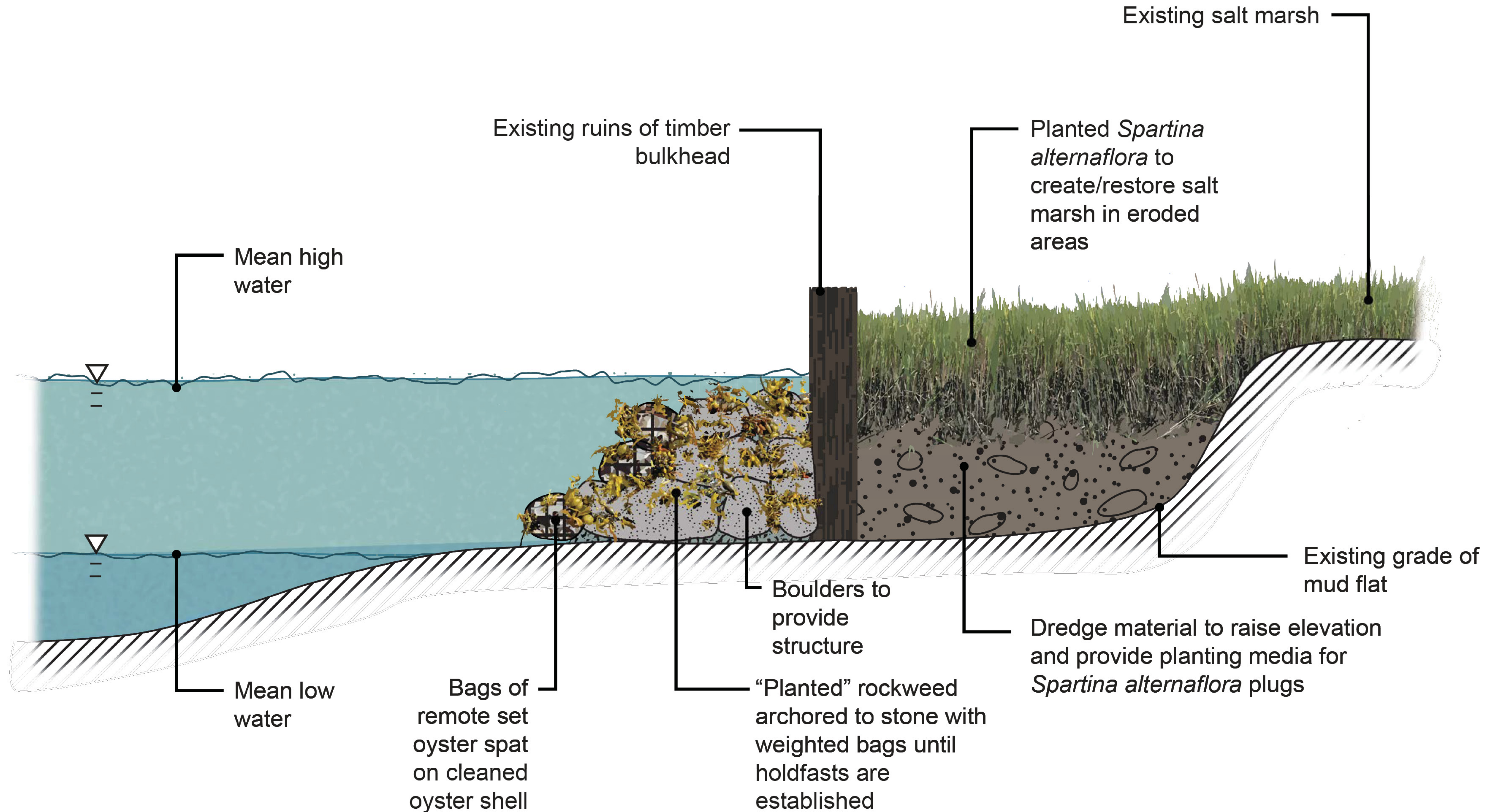


SALVAGED GRANITE PLANTING BEDS ESTABLISHED  
WITH PLANTING MEDIUM INSTALLED



ESTABLISHMENT OF SEA WEEDS  
IN TIDE POOL CELL



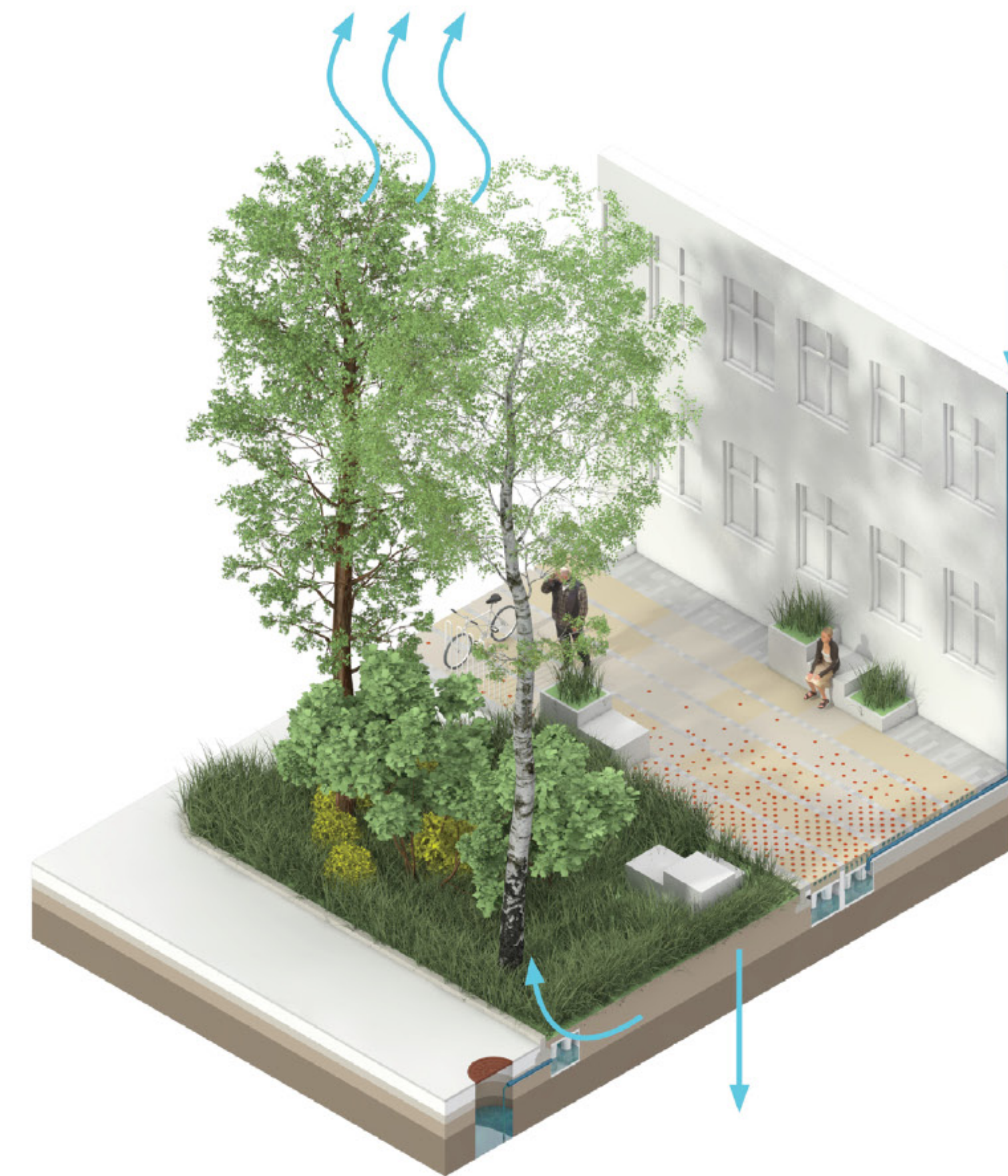






Bioretention basins increase stormwater filtering and infiltration

Climate Resilient Neighborhood Project in Copenhagen with Climate Tiles







Recessed Stormwater Planters along Division Street | Portland Oregon



Curb cut inlet allows stormwater to enter the stormwater planters for infiltration, filtering, and plant growth before entering the stormwater system.



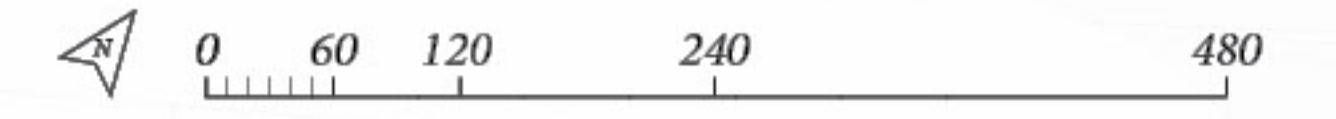
A Green Streets Recessed Stormwater Planter recently planted



A bee-hive inlet is set at a high water level elevation and serves to decant stormwater to the street drainage system during extreme storms.



# PROPOSED GREENWAY ALIGNMENT NORTH MILL POND GREENWAY



## GREENWAY ALIGNMENT

- Invasive Species to be Removed
- Preferred Alignment
- Alternate Raised Boardwalk
- Alternate Alignment
- Connector Path
- Connection via Existing Sidewalk
- Rail Junction



PROPOSED SIGNALIZED / ACTIVATED CROSSWALK

ALTERNATE RAISED BOARDWALK MULTI-USE PATH

TRAIL JUNCTION

PROPOSED LIVING SHORELINE

PROPOSED GREENWAY ACCESS

PROPOSED PUBLIC AMENITY SPACE WITH HISTORIC / INTERPRETIVE ELEMENTS

25' FROM HIGHEST OBSERVABLE TIDE LINE

50' FROM HIGHEST OBSERVABLE TIDE LINE

PROPOSED INVASIVE SPECIES TO BE REMOVED AND REPLACED WITH UPLAND PLANTING AREAS

GREENWAY ALIGNMENT TO BE 25' MINIMUM DISTANCE FROM HIGHEST OBSERVABLE TIDE LINE

POSSIBLE FUTURE GREENWAY ALIGNMENT

SEATING AREA / LOOKOUT POINT

TRAIL JUNCTION

GREENWAY ALIGNMENT TO BE 20' MINIMUM DISTANCE FROM CENTER OF RAIL LINE

PROPOSED GREENWAY ACCESS

PROPOSED RAILWAY CROSSING OR OVERPASS (OPTION 1)

PROPOSED GREENWAY ACCESS

PROPOSED RAILWAY CROSSING OR OVERPASS AT GARAGE ELEVATOR (OPTION 2)

PROPOSED CROSSWALK

TRAIL JUNCTION

POSSIBLE ALTERNATIVE ROUTE

PROPOSED COMMUNITY SPACE

PROPOSED INVASIVE SPECIES TO BE REMOVED AND REPLACED WITH UPLAND PLANTING AREAS

PROPOSED LIVING SHORELINE

PROPOSED GREENWAY ACCESS

EXISTING SIDEWALK

TRAIL JUNCTION

PROPOSED CROSSWALK

EXISTING SIDEWALK