



# MacEachron Park Shoreline Restoration Schematic Designs

Hastings-on-Hudson  
June 14, 2022



# MacEachron Park - Purpose of today's meeting

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- **Provide a status update to the public regarding work accomplished to date**
- **Solicit input from park users, stakeholders and the general public**
- **Discuss next steps**

# MacEachron Park – Shoreline Restoration Schematic Designs

## Public Insights

Questionnaire to solicit ideas and input from this evening's presentation

Two ways:

1. Preferred – on-line form

<https://forms.office.com/r/HstfNEKf9S>

2. Paper (we have 15 blank forms tonight)



# MacEachron Park

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## The Grant – Hudson River Estuary Program

Conceptual Design – Produce a conceptual design with nature-based elements to stabilize the shoreline, remediate park-side erosion, manage stormwater runoff, and include an area to access the water. Design will accommodate tidal flooding and climate change impacts.



# MacEachron Park

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**The park is named after Frances MacEachron, the Village's first female mayor who served from 1981 to 1993**

**The park is popular as it is, along with adjacent Kinnally Cove, the Village's only waterfront park**

**Thousands of residents and visitors use the park each year**

**Views of the Hudson River, the new Mario M. Cuomo bridge, the Palisades, and the Manhattan skyline**

**Amenities currently include natural scenery with a short trail, a playground, picnic tables and park benches**

# MacEachron Park

## Park Setting



# Topographic and Hydrographic Survey

We created a base map from which:

Existing conditions can be defined, and,

Concept designs can be prepared



# Existing Conditions Report

Prepared January 2022

- **Shoreline and Erosion**
- **Stormwater**
- **Flood Risk Assessment**
- **Trees and Soils**
- **Permitting Assessment**
- **Resilience**
- **Environmental Assessment**
  
- **An Engineering Basis of Design was prepared**
  - Tidal elevations and river stage including sea level rise
  - Storms, waves and vessel wake
  - Currents and ice
  - Salinity



# Previous Uses

## Industrial

- Stone
- Timber
- Bulkhead
- Offshore piers and mooring
- Dolphin
- Storage Tanks

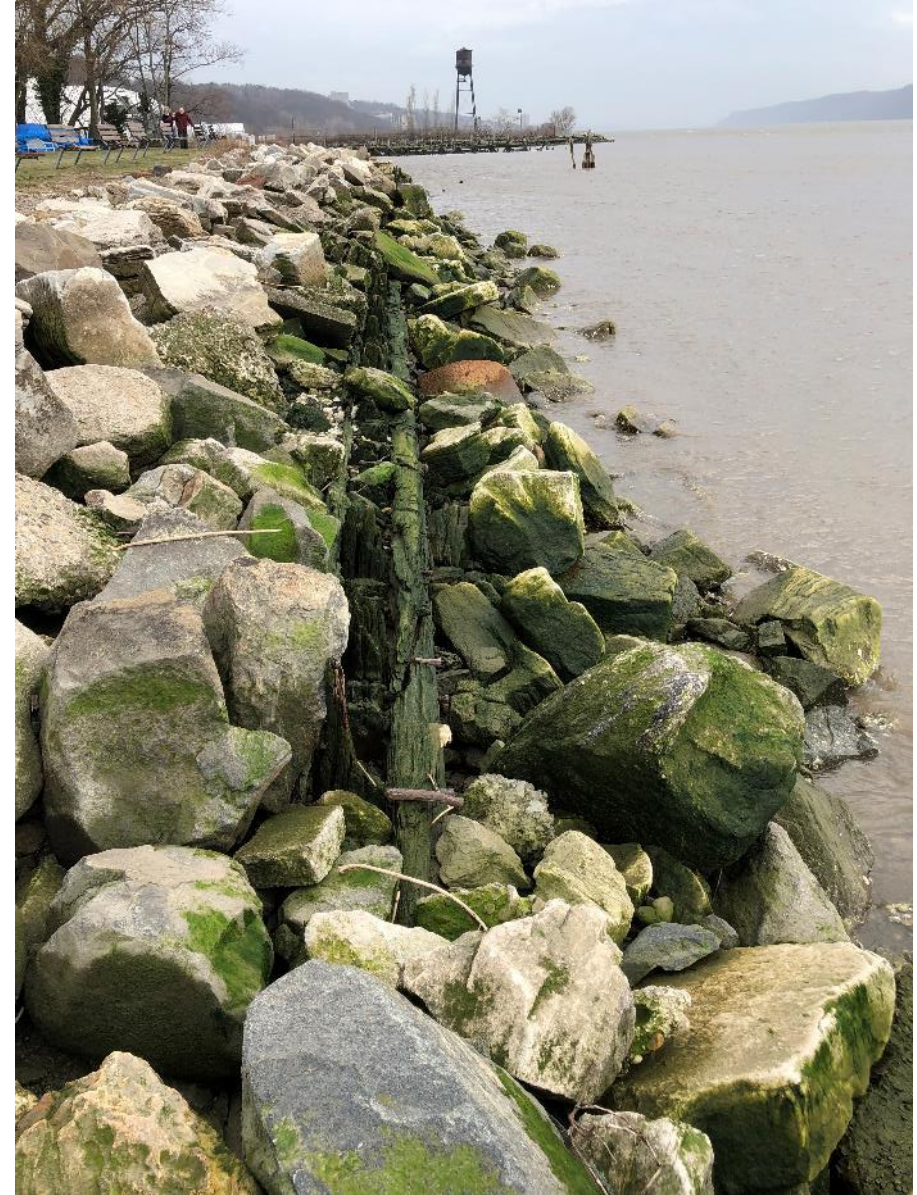


1976



# Shoreline

Along the Hudson River





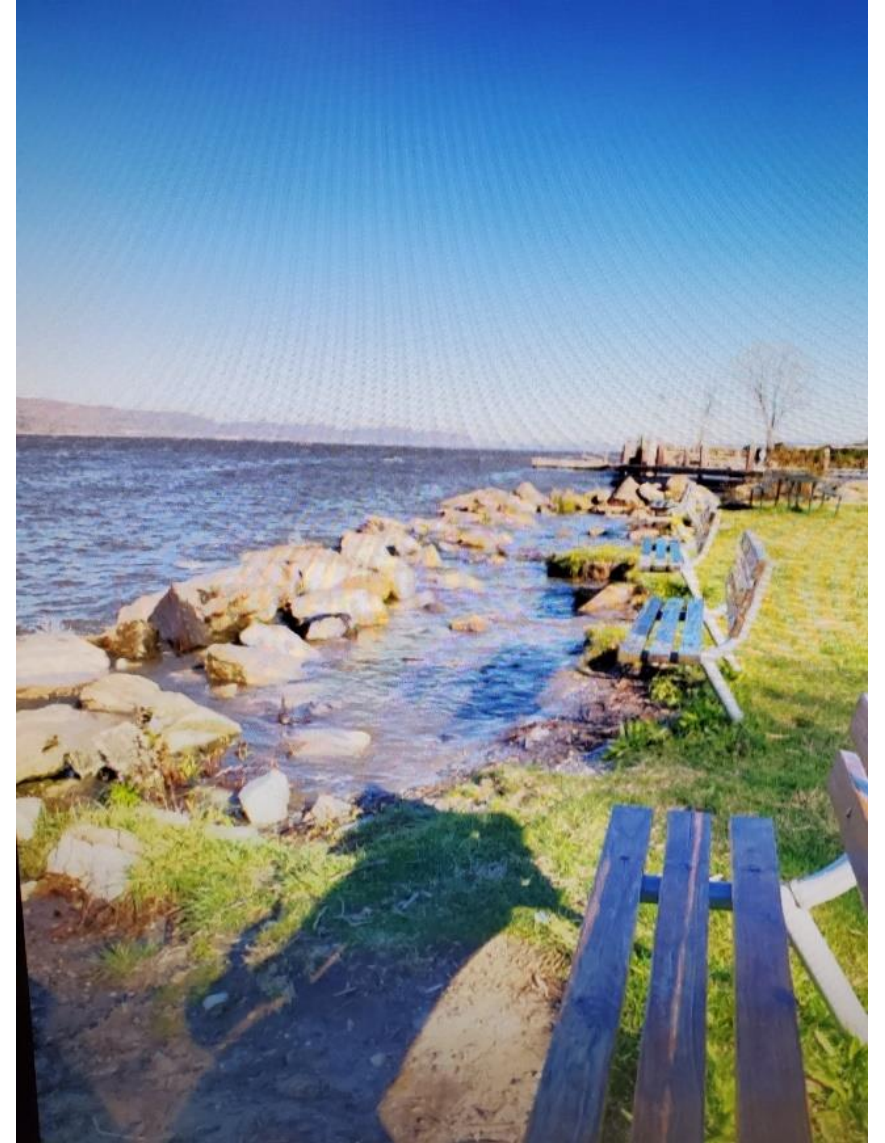
# Extreme high and low water

## High

- River stage due to rain
- High astronomical tide
- Storm surge
- Wind working with an incoming tide

## Low

- Lack of rain
- Wind working with an outgoing tide



# Erosion and Sedimentation

- **Erosion is occurring along the western and northern shorelines**
- Storm Waves
- Increased Water levels
- Vessel Wake
- Displaced Stone Revetment and failing timber bulkhead
- **Geotechnical instability exists along the southern shoreline**
- Collapsing wall along Kinnally Cove
- **Sedimentation of Kinnally Cove is expected to increase with the remediation of the Anaconda Wire site.**



# Erosion

## Erosion

- Loss of Benches
- Safety
- Loss of usable park land
- Periodic flooding





# Vessel Wake





# Areas of accelerated erosion

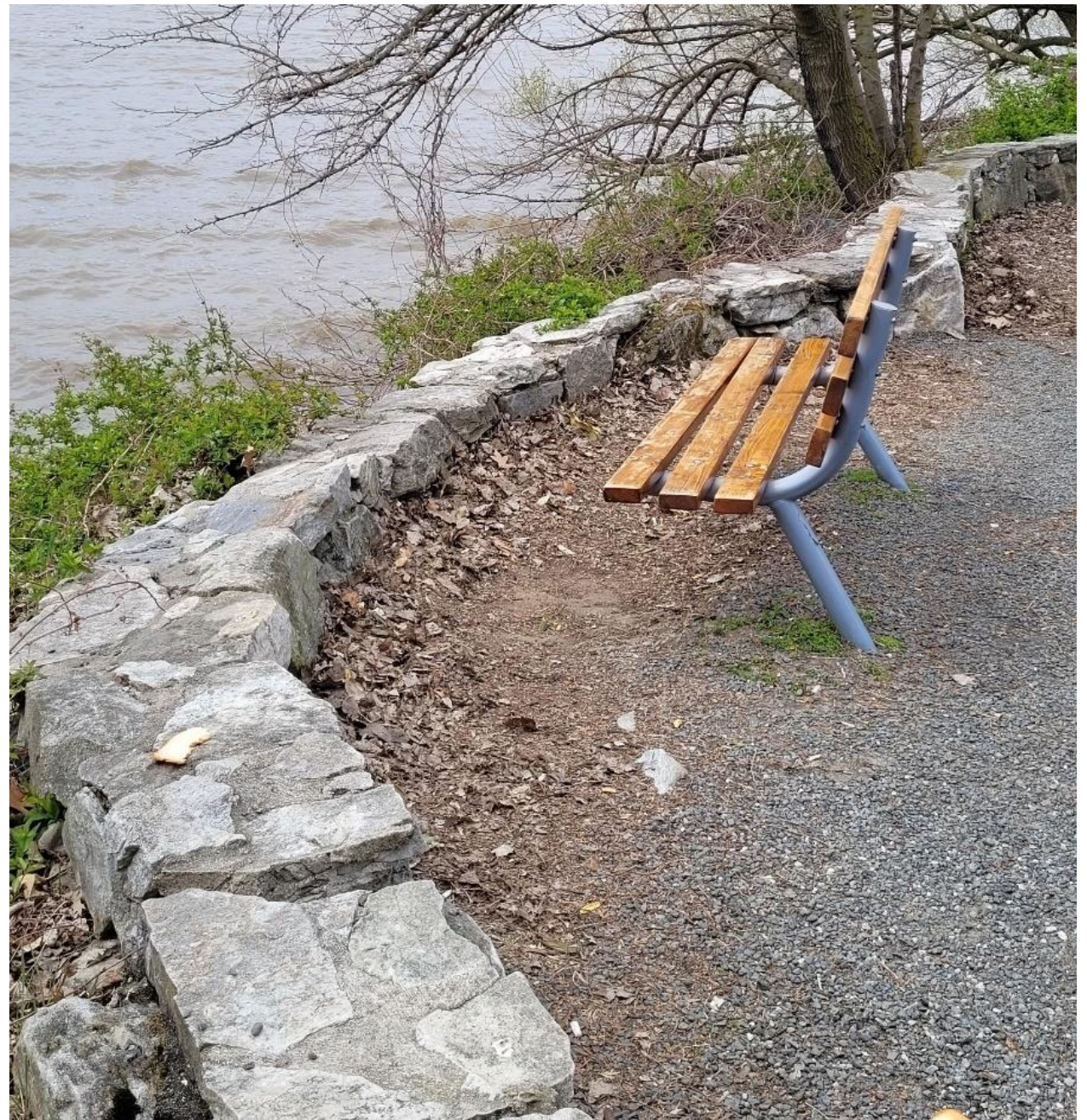
## Cove





# Southern Shoreline

Along Kinnally Cove





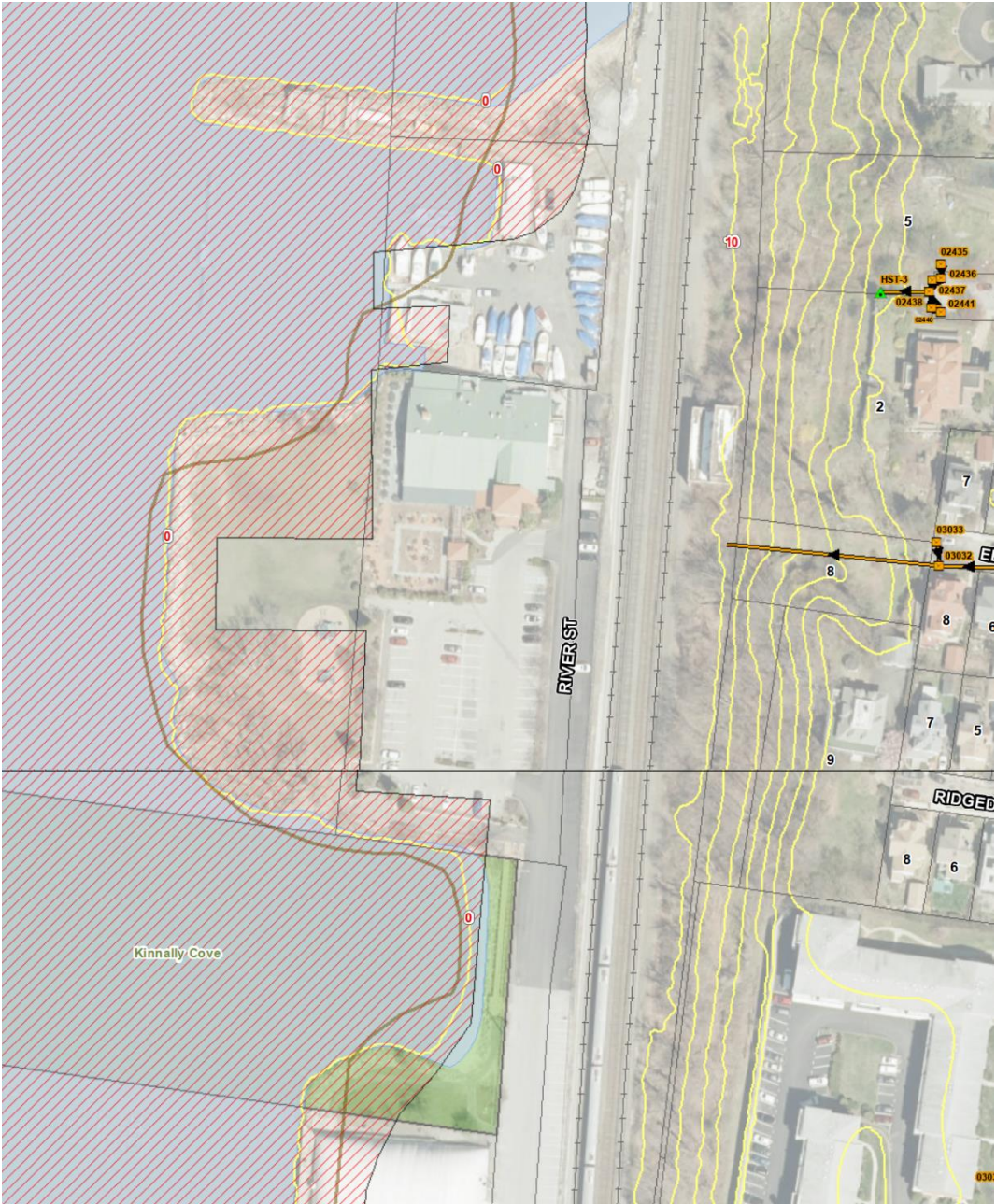
# Shoreline

## Along Kinnally Cove





# Hastings Stormwater MS4



# Existing Stormwater Flow

## Elevations

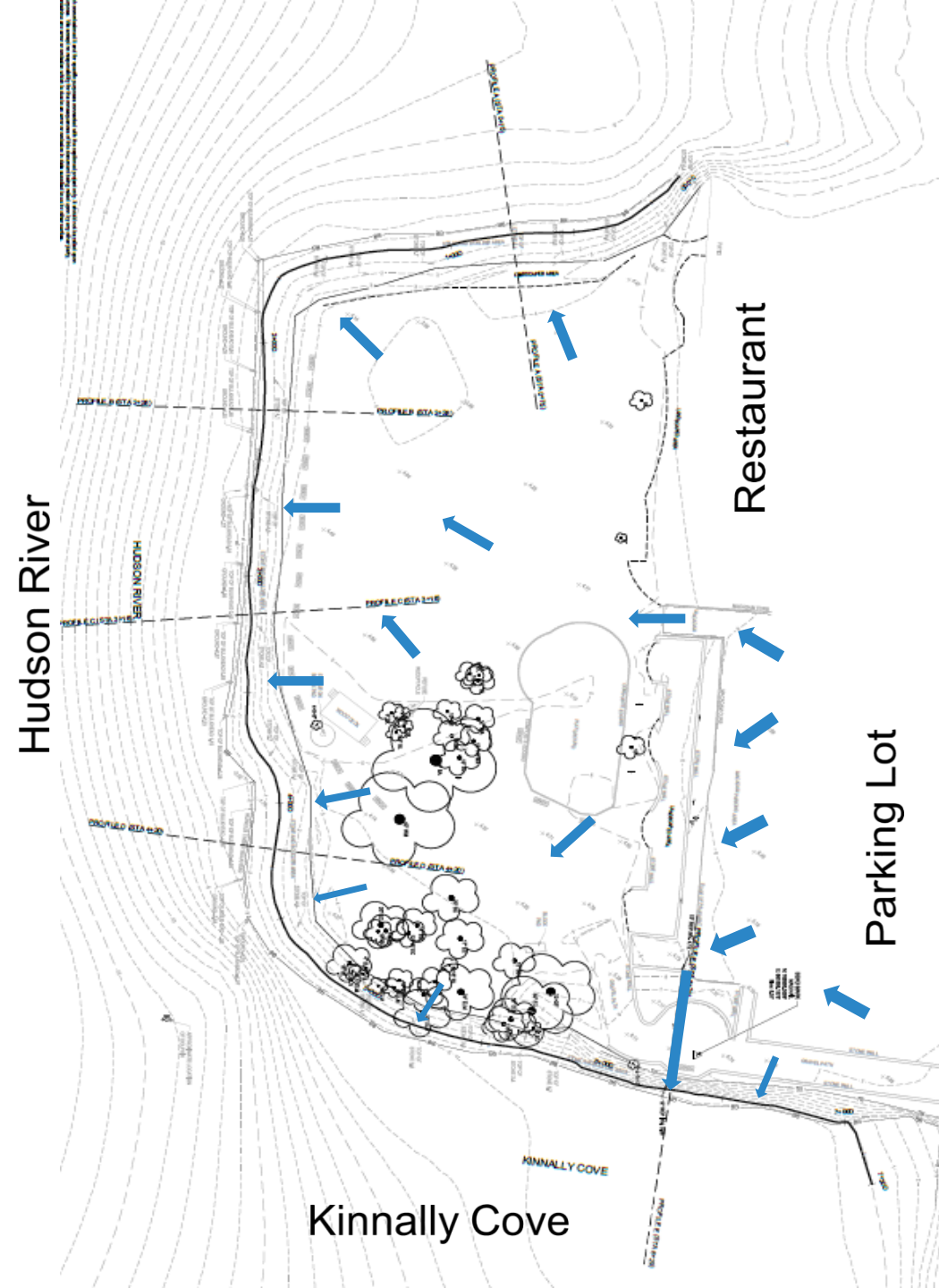
- Parking lot +6.19 to +6.59 ft
- Park +3.98 to +5.29 ft

## Outfall Pipe

- Inverts +4.12 to +3.08 ft

## Final Grading Plan

- Account for raised elevations in the park





# Existing Conditions

## Stormwater







MacEachron Waterfront Park: 48 trees inventoried by Matt Weibel (SavATree Consulting Group)





# Concept Design

## Setting and Inspiration

Hudson River Landscape School of Landscape Painters



Autumn on the Hudson River by Local Artist Jasper Francis Cropsey, 1860



Trail along Kinnally Cove

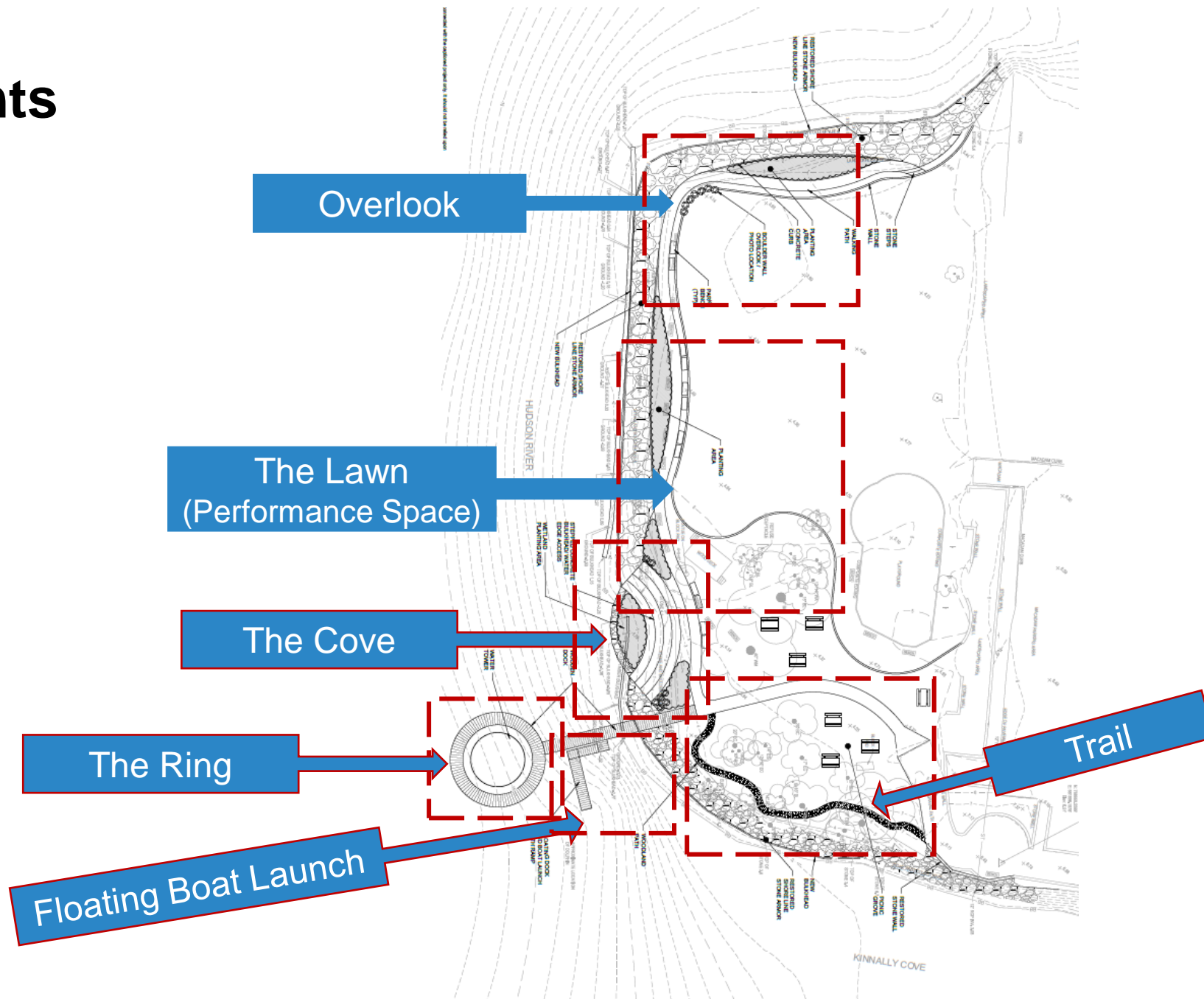


# MacEachron Park

## Concept Design

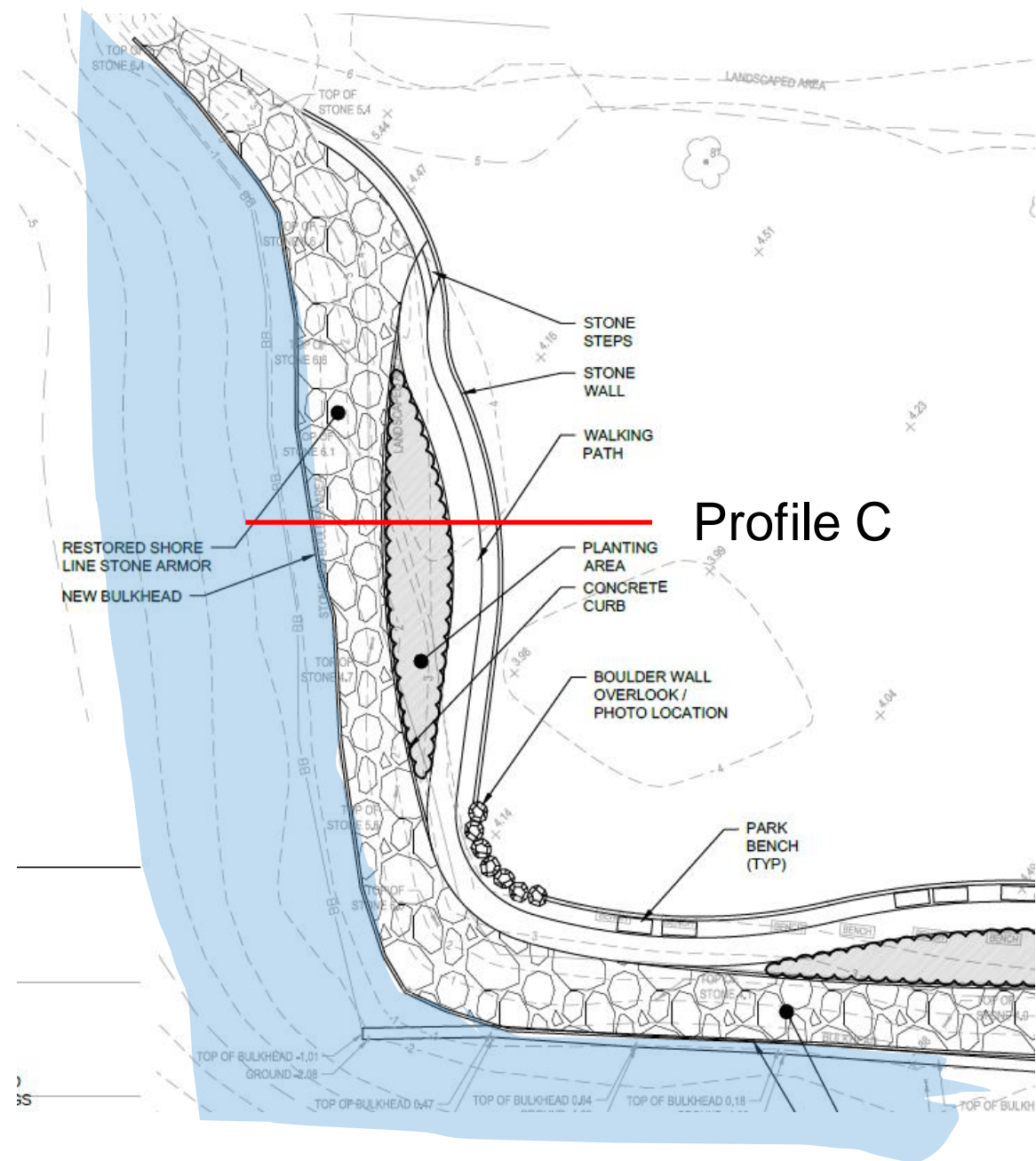


# Elements



# Concept Designs

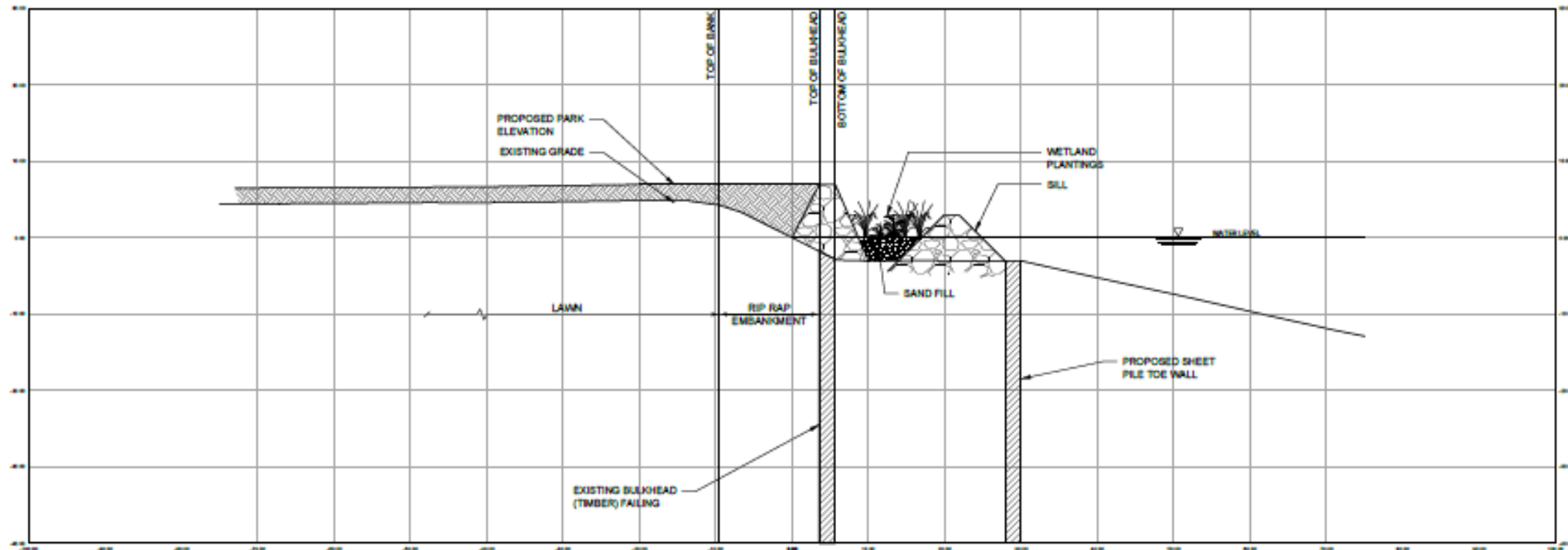
Overlook area with raised elevation and nature-based edges



# Conceptual stone revetment and sill w/ plantings

Increased elevation to +6.5 ft. NAVD 88 northern 2/3 of the park

PROFILE C (STA 3+16)





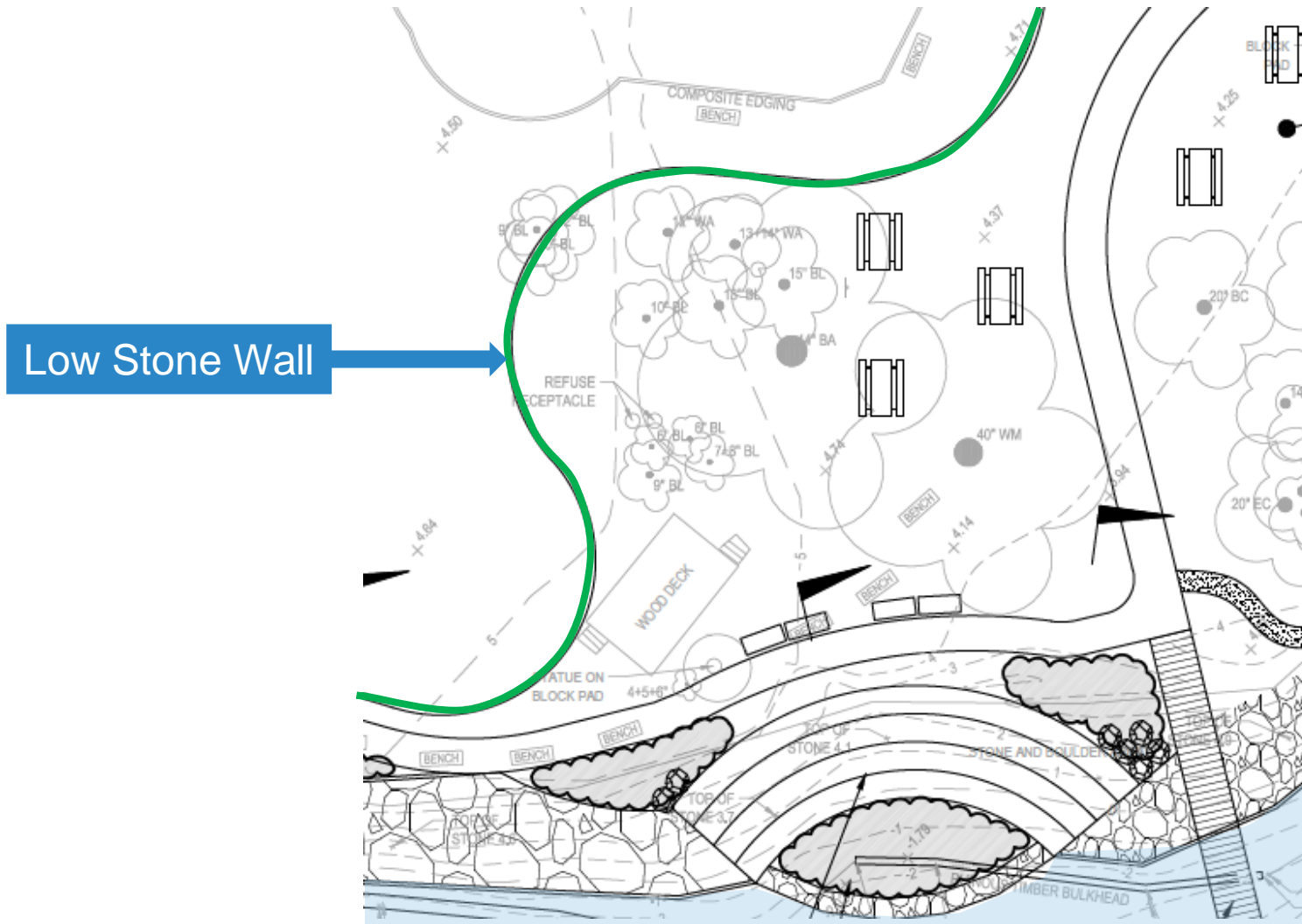


# Concept Designs

Overlook/Photo Spot



## Concepts – Lawn seating





# Design Elements – Low Stone Wall





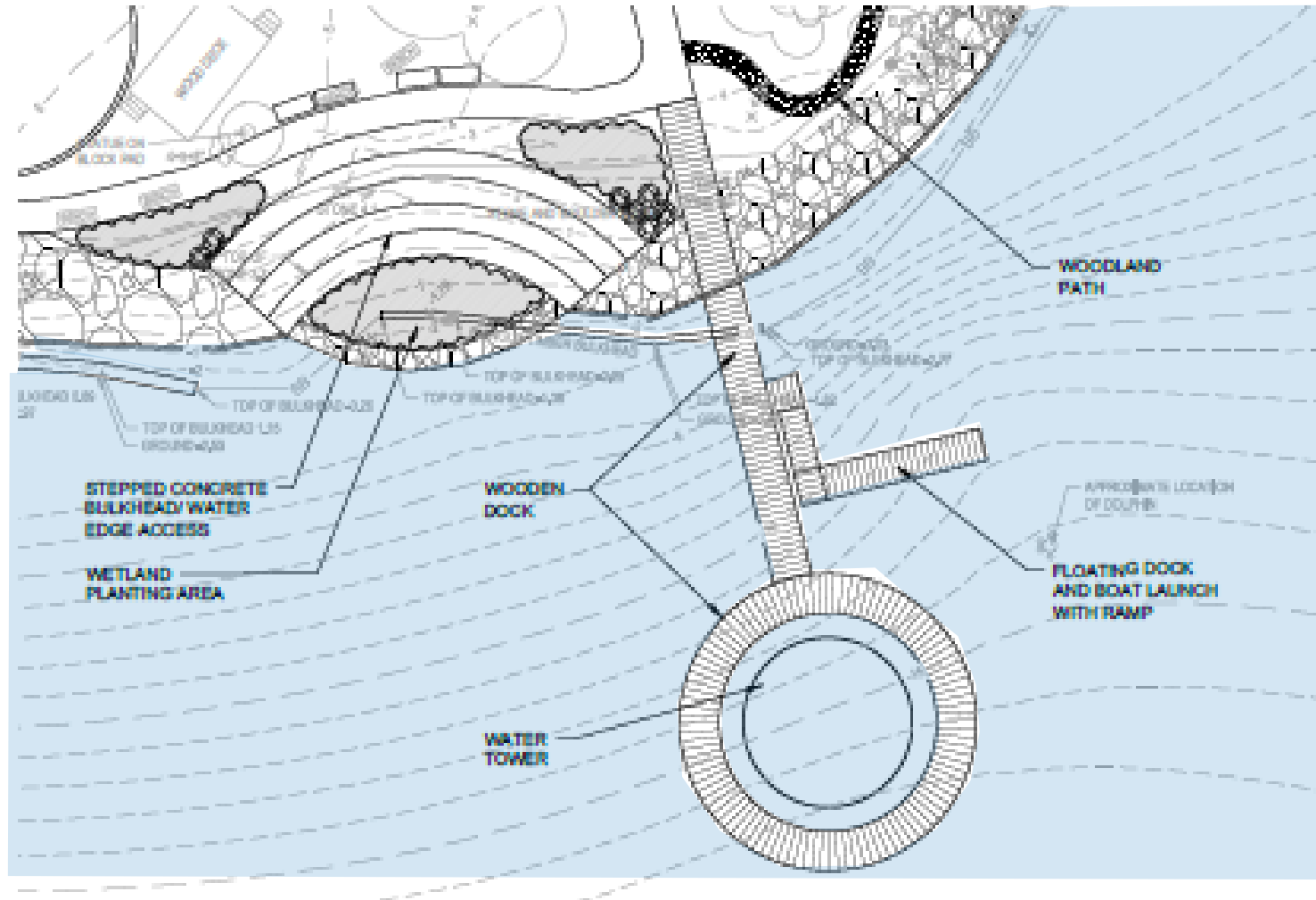


# Concepts

Lawn seating



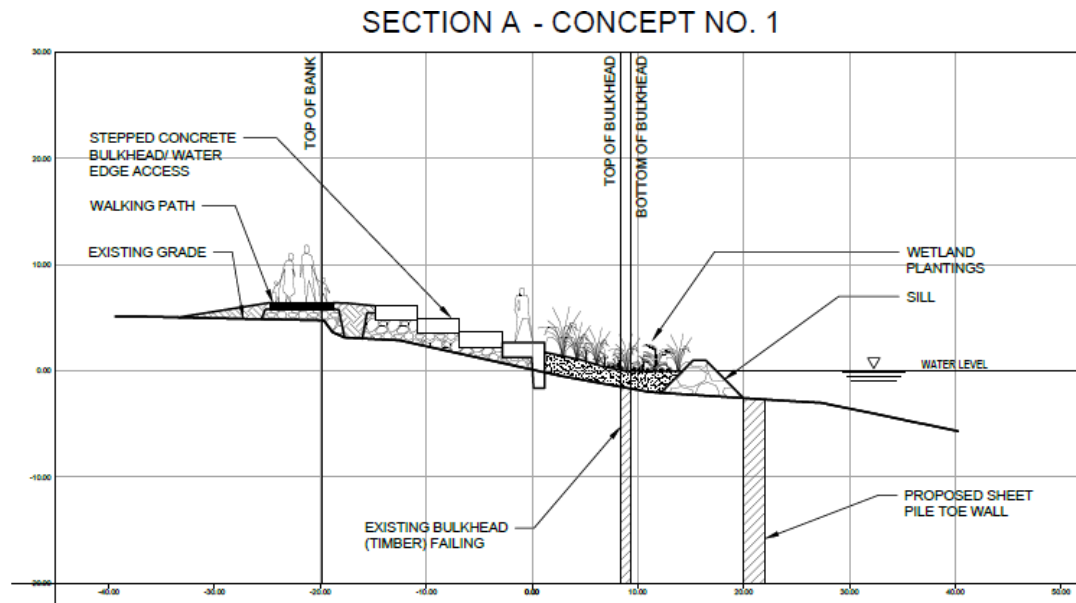
# Concept Designs – Cove, Ring and Boat Launch



# Concept Design

## Cove/Tidal Pool

### Enhancing Water Access







**Cove/Tide Pool**



# Areas of accelerated erosion

## Cove





# Concepts

## Cove/Tide Pool

### Enhancing Water Access





# The Ring - Water Access

Increase Educational opportunities and  
Ecosystem Services



Mussels grown on “sockline”  
Photo: [www.dfo-mpo.gc](http://www.dfo-mpo.gc)



Model of the “crust” of filter-feeding  
marine organisms on a wooden piling,  
at American Museum of Natural History





# “The Ring” Water Access with Floating Boat Launch



# The Ring with Water Tower





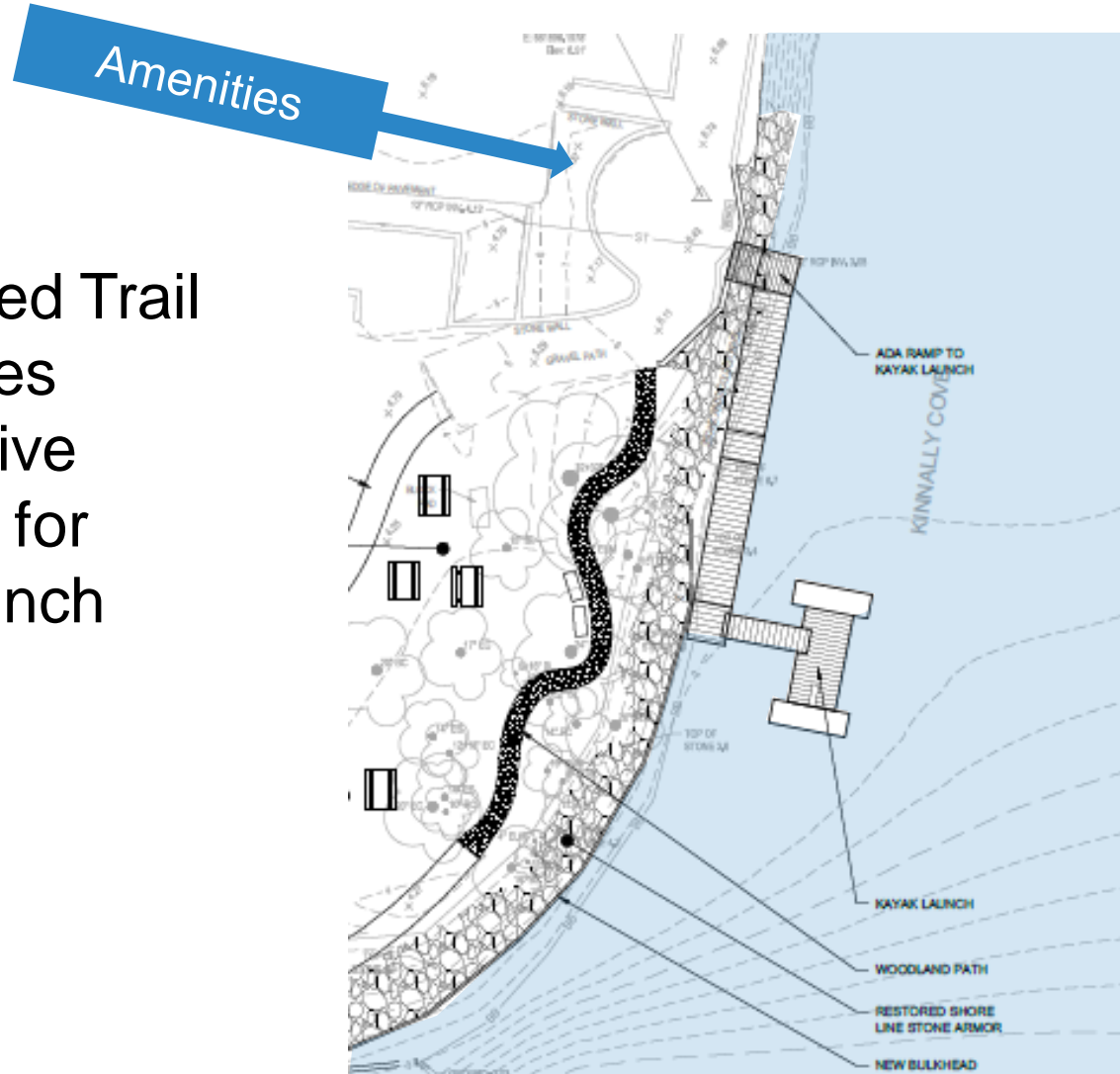
# The Ring with Floating Boat Launch and Water Tower





# Concept Design for Southern shoreline along Kinnally Cove

- Enhanced Trail
- Amenities
- Alternative location for boat launch





# Example Amenities - Bike Racks and Kayak Storage



Scenic Hudson Long Dock Park, Beacon, NY



Example bike racks



# Enhanced Trail





# Summary of Concept Designs

## Major work efforts for next phases

*Temporary protection of the shoreline has been initiated, but erosion will likely continue*

- **Develop Preferred Plan**
- **Obtain additional funding**
- **Conduct geotechnical and environmental borings, and final designs**
- **Restore the shoreline to protect against future erosion and loss of parkland**
- **Improve the stability of the southern shoreline to prevent collapse**
- **Provide final grading plan to enhance stormwater flow**

## Design Elements – Modularity and Phasing – for the Preferred Plan

- **Raise elevation in specific areas – park will continue to flood, but less often, and with reduced impact**
- **Increase public access to the river**
- **Add historical, cultural and educational context to the park**
- **Enhance public use through amenities**
- **Allow subtle demarcation of areas within the park**
- **Some elements may be more difficult to obtain permits**



# Acknowledgements

This project has been funded in part by a grant from the New York State Environmental Protection Fund through the Hudson River Estuary Program of the New York State Department of Environmental Conservation.



**Department of  
Environmental  
Conservation**



**Hudson River  
Estuary Program**

A Program of the New York State Department of Environmental Conservation





# Public Input





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