Norfolk Thrive EPA Area-Wide Planning Project Presentation

HRPDC – Regional Environmental Committee

HRPDC, Chesapeake, VA – February 6, 2020

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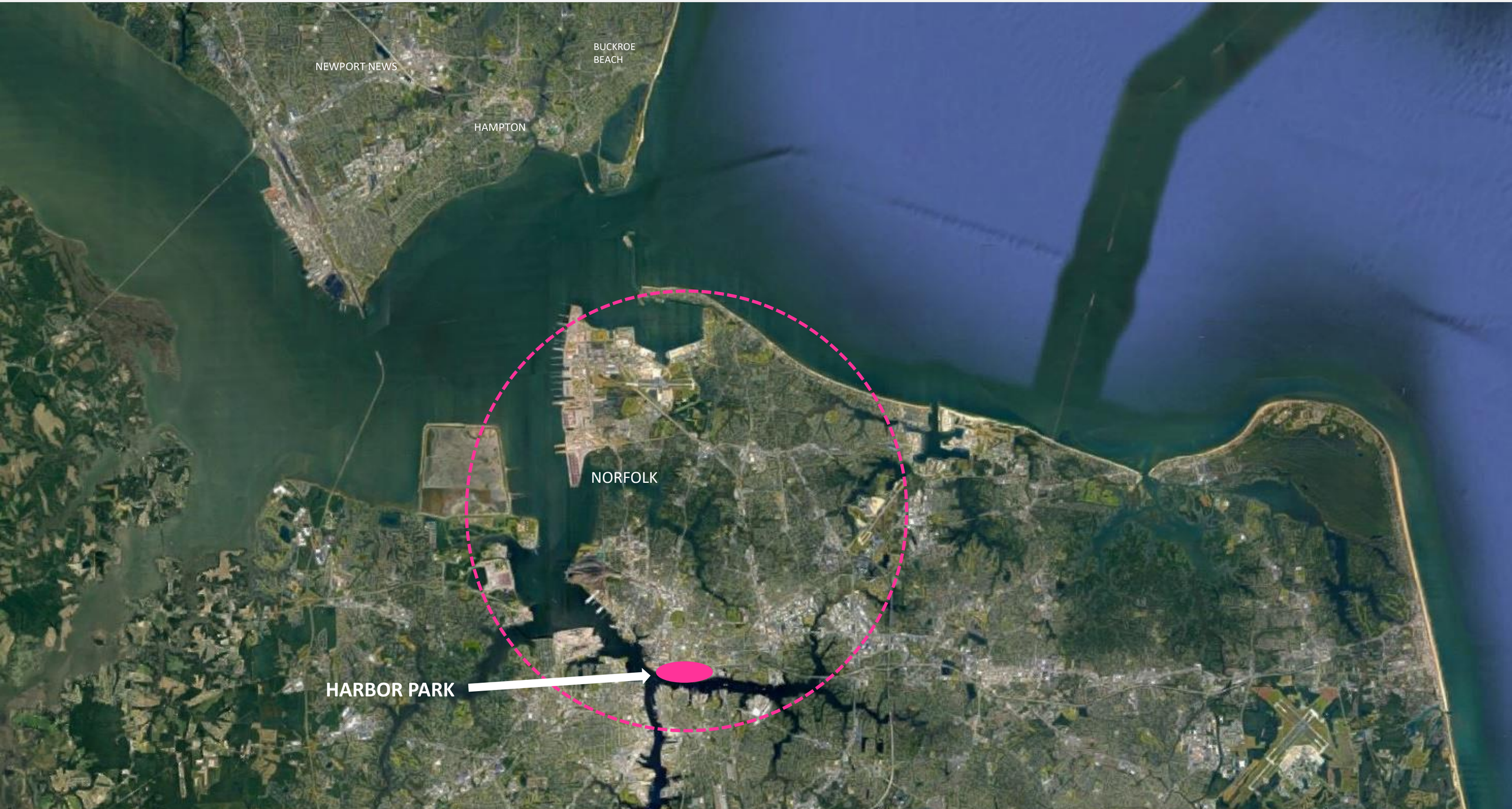
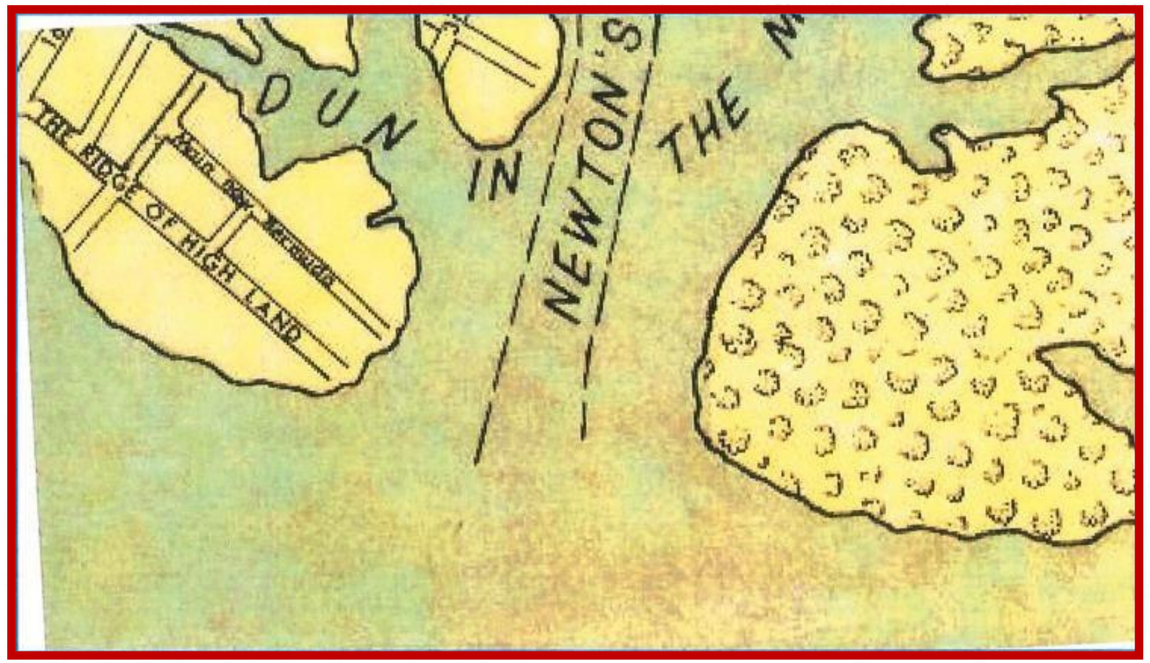
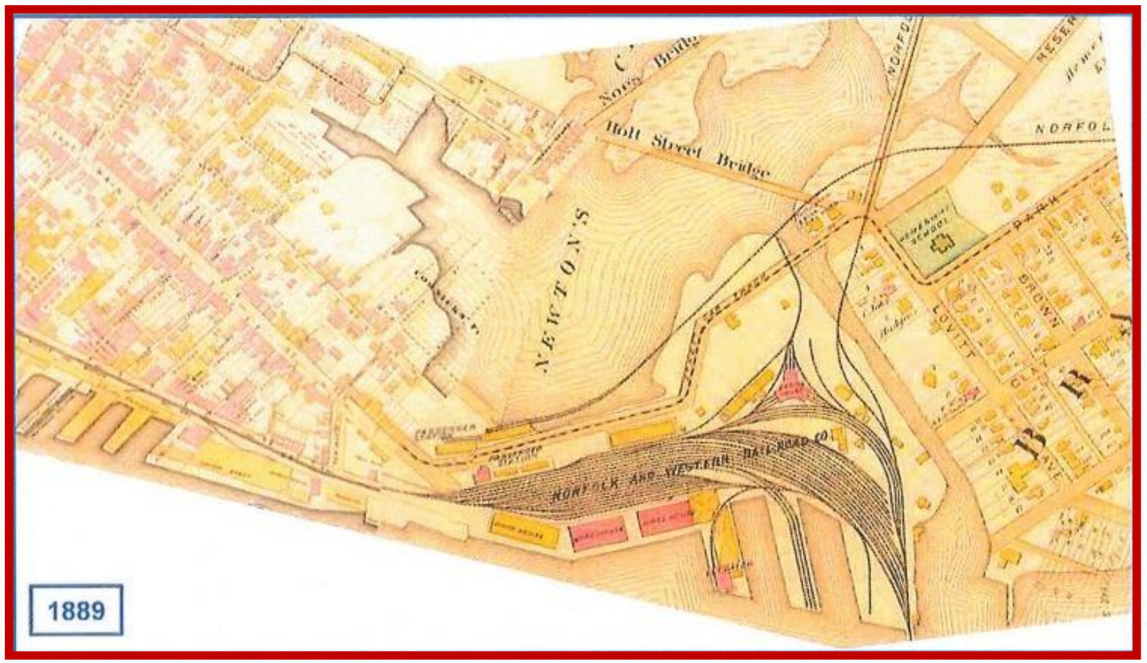
LANDSCAPE ARCHITECTURE
URBAN DESIGN


NEWPORT NEWS
BUCKROE BEACH
HAMPTON
NORFOLK
HARBOR PARK

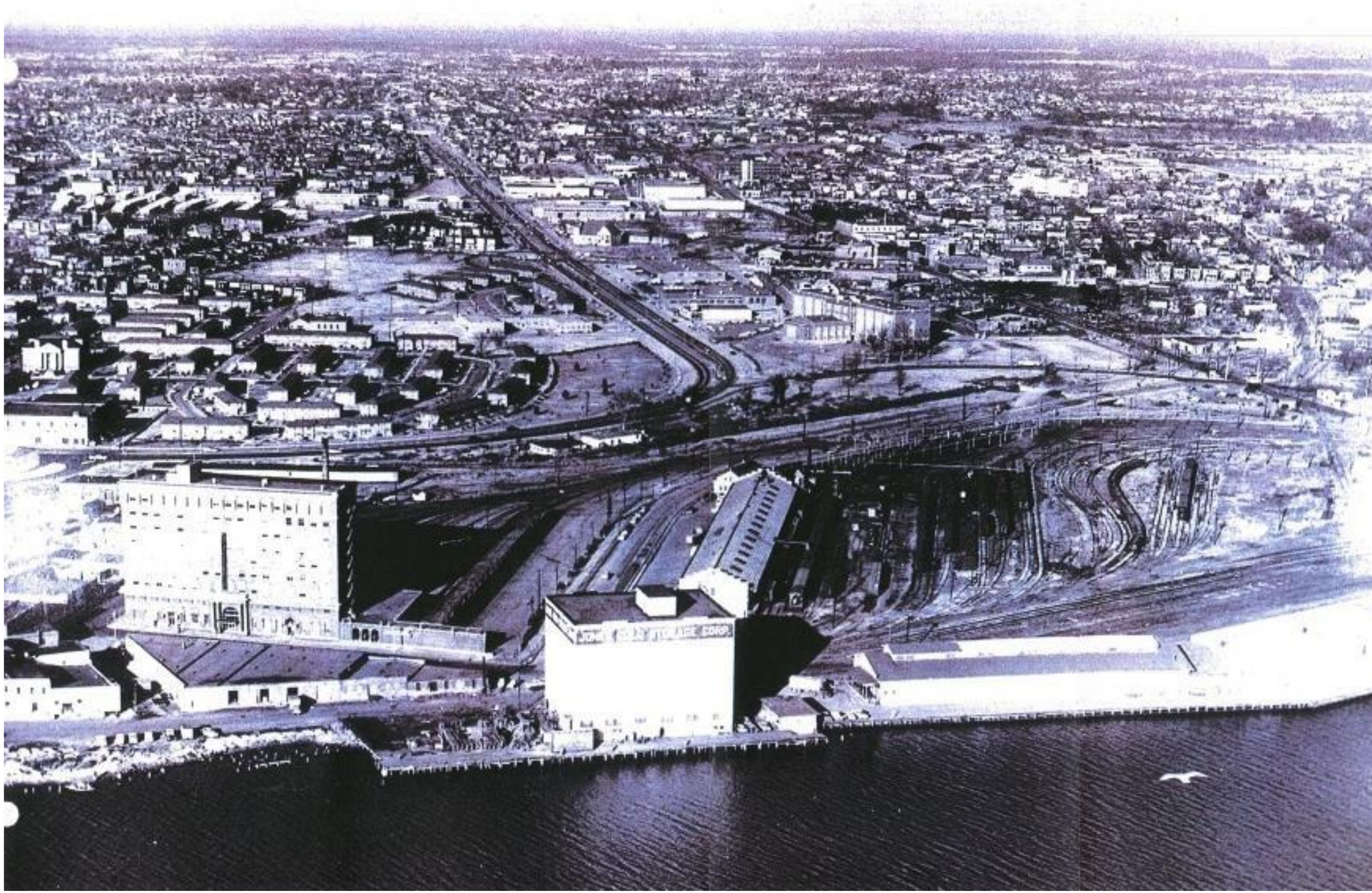


Historical 1736 Map – Harbor Park & Vicinity



Historical 1889 Map – Harbor Park & Vicinity

An Industrial Legacy



FREEMASON DISTRICT
DOWNTOWN NORFOLK
CITY HALL
ST. PAUL'S AREA
TIDEWATER GARDENS
NORFOLK SOUTHERN
CENTRAL BRAMBLETON
NORFOLK STATE UNIVERSITY
CHESTERFIELD HEIGHTS
SOUTH BRAMBLETON
NEWTONS CREEK
STUDY AREA BOUNDARY
ELIZABETH RIVER - EASTERN BRANCH
S G A
LANDSCAPE ARCHITECTURE
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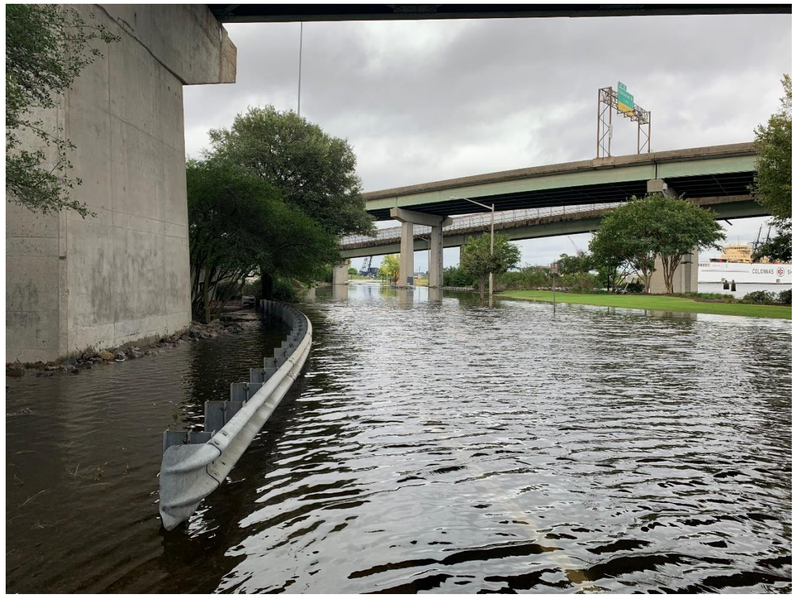
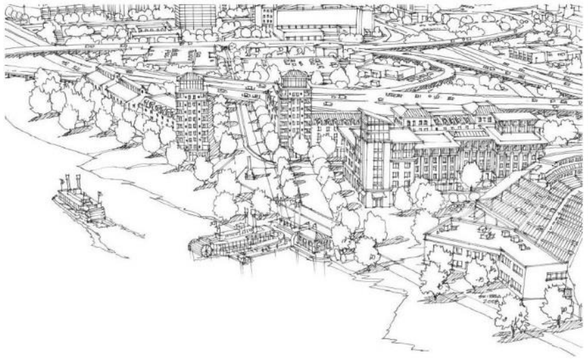
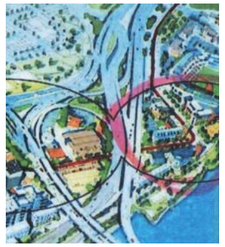
Existing Study Area Uses & Conditions

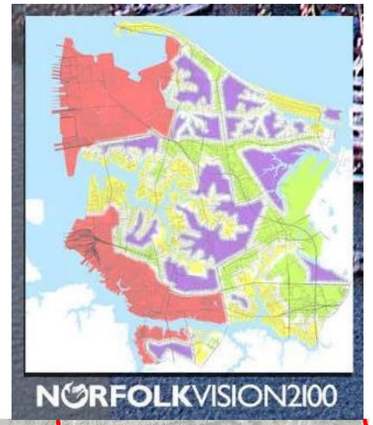


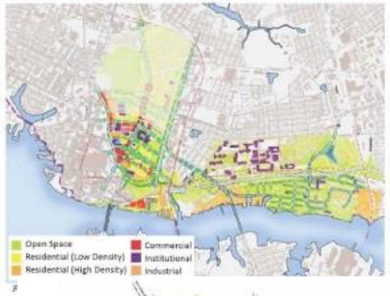
Existing Study Area Uses & Conditions

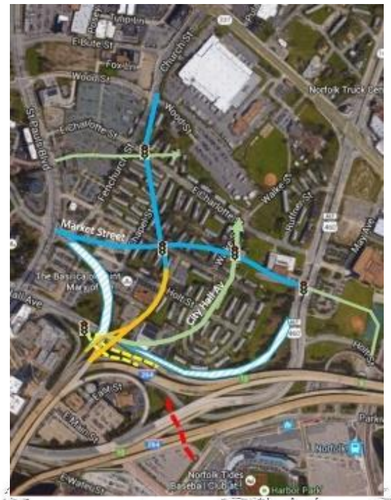
Redevelopment Visioning – Background Criteria

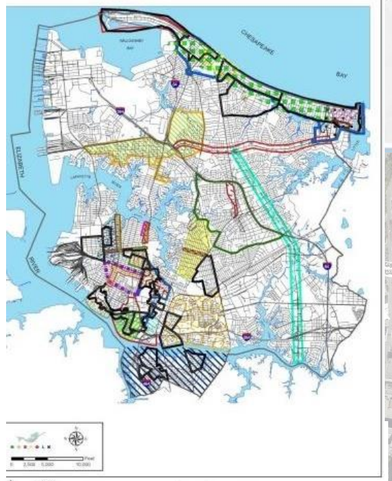


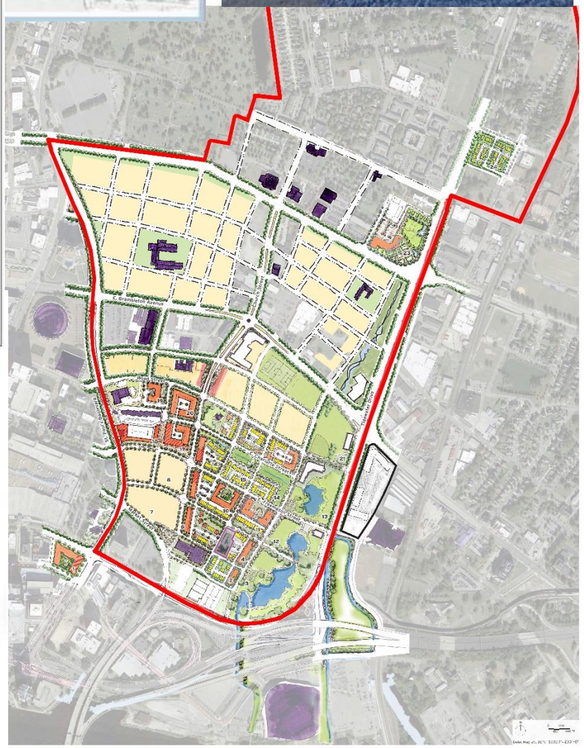


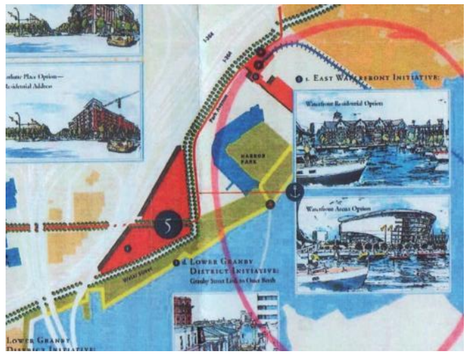




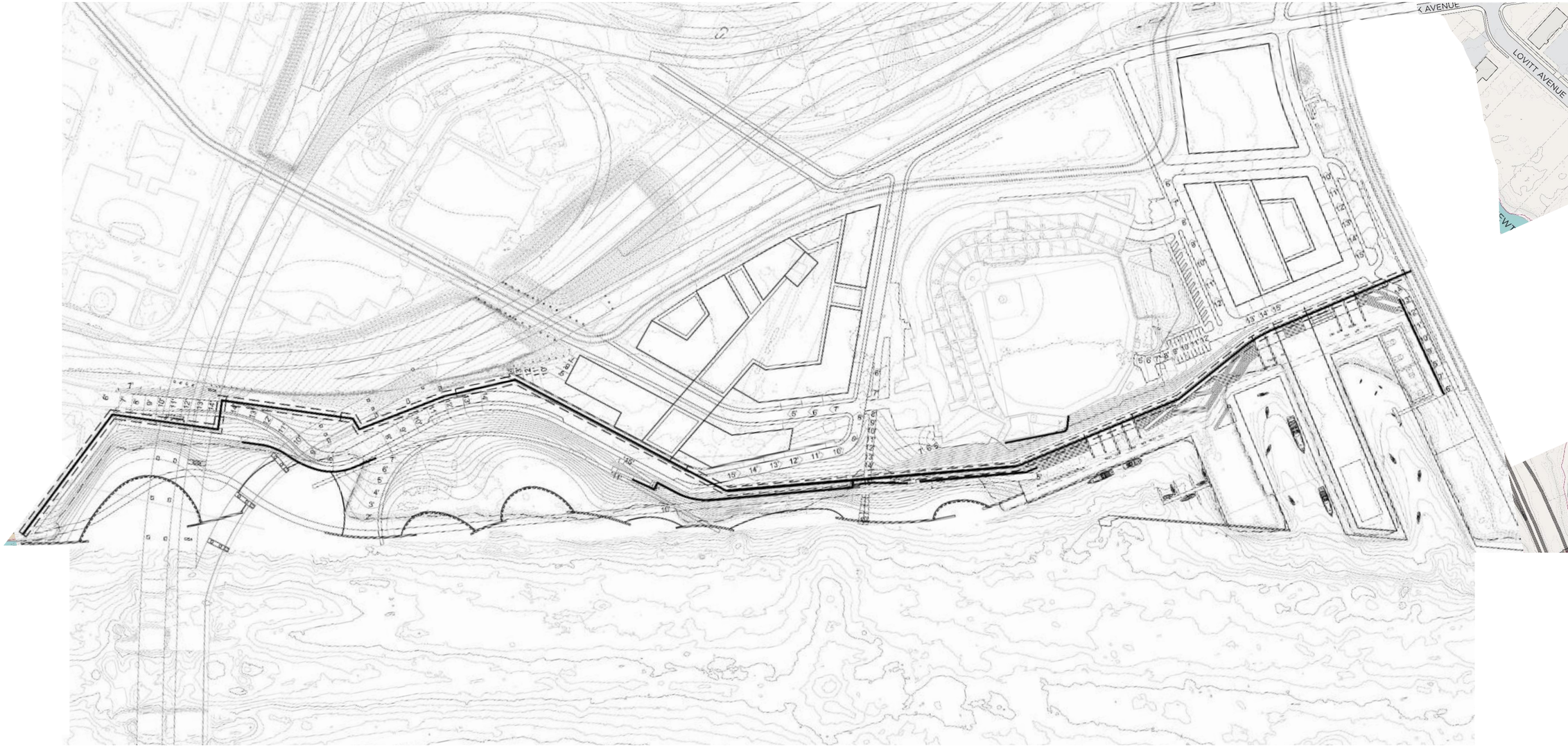








Living Shoreline Constructability Strategy



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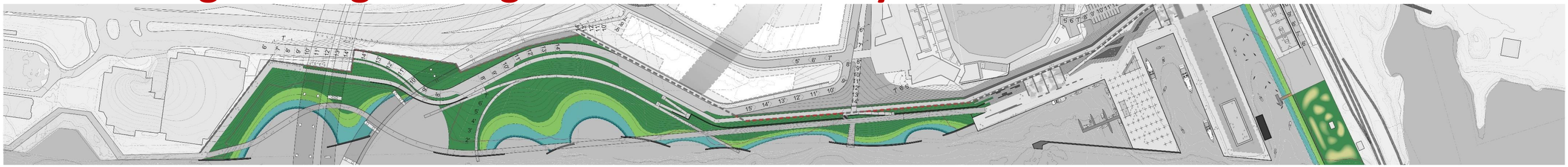
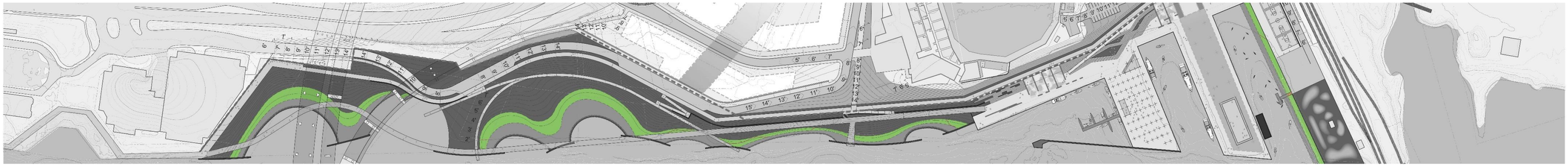
Soft Engineering – Living Shoreline Assembly

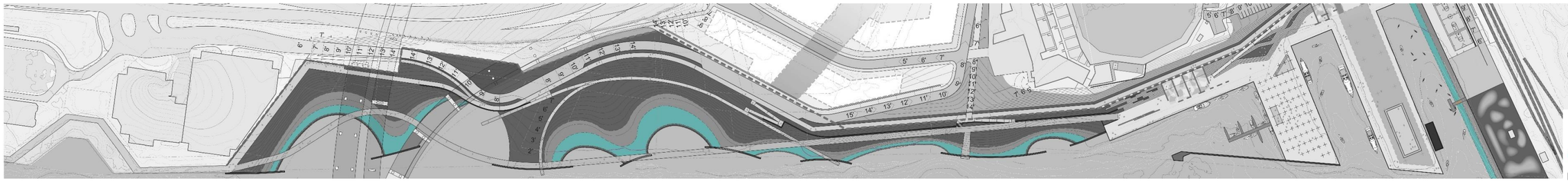


LIVING SHORELINE COMPONENTS

HIGH TIDE TO UPLAND RIPARIAN WETLAND ZONE PLANTINGS (MHW+)



MID TO HIGH TIDE WETLAND ZONE PLANTINGS (MSL TO MHW)



LOW TO MID TIDE WETLAND ZONE PLANTINGS (MLW TO MSL)

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LANDSCAPE ARCHITECTURE
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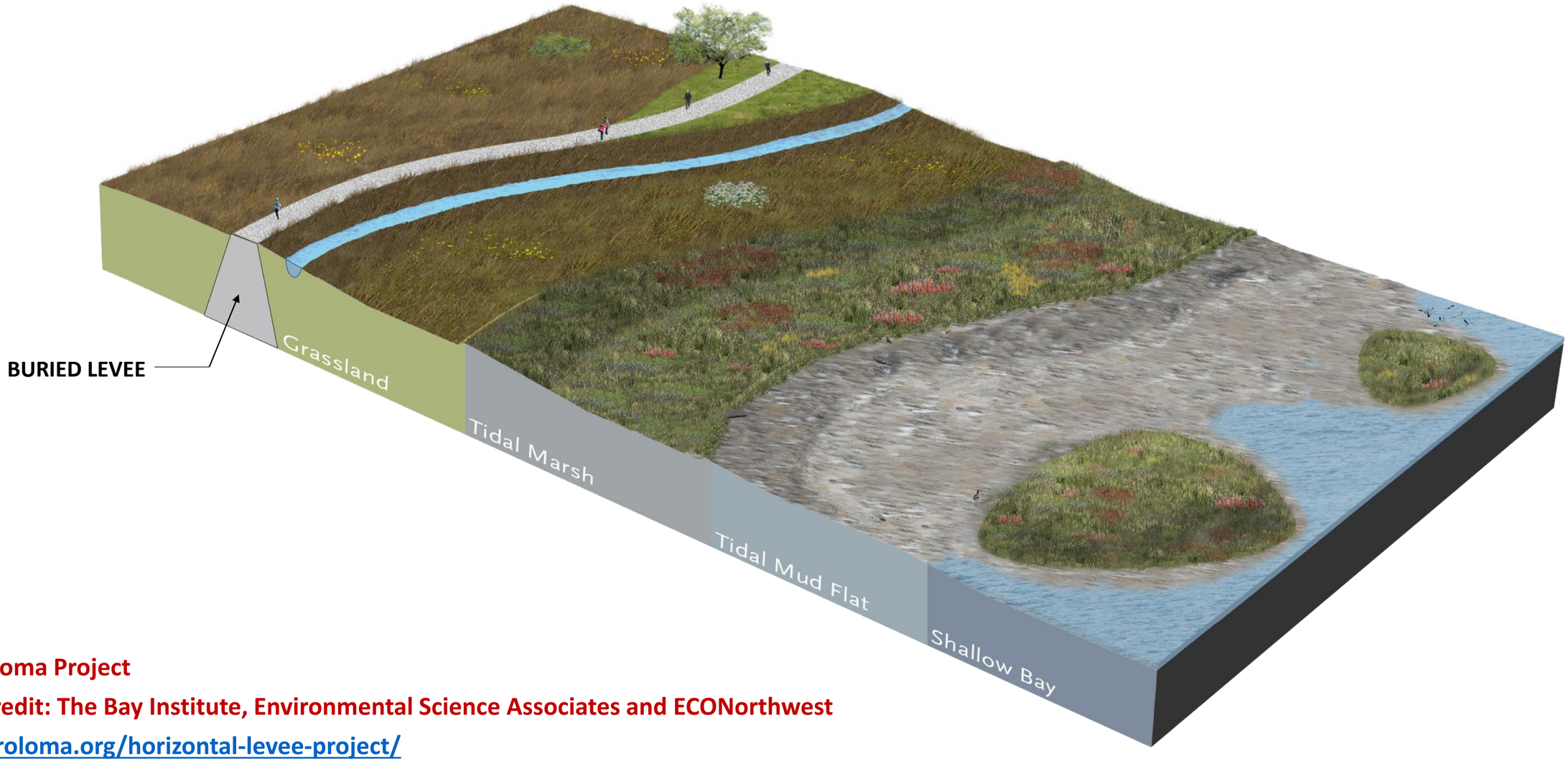
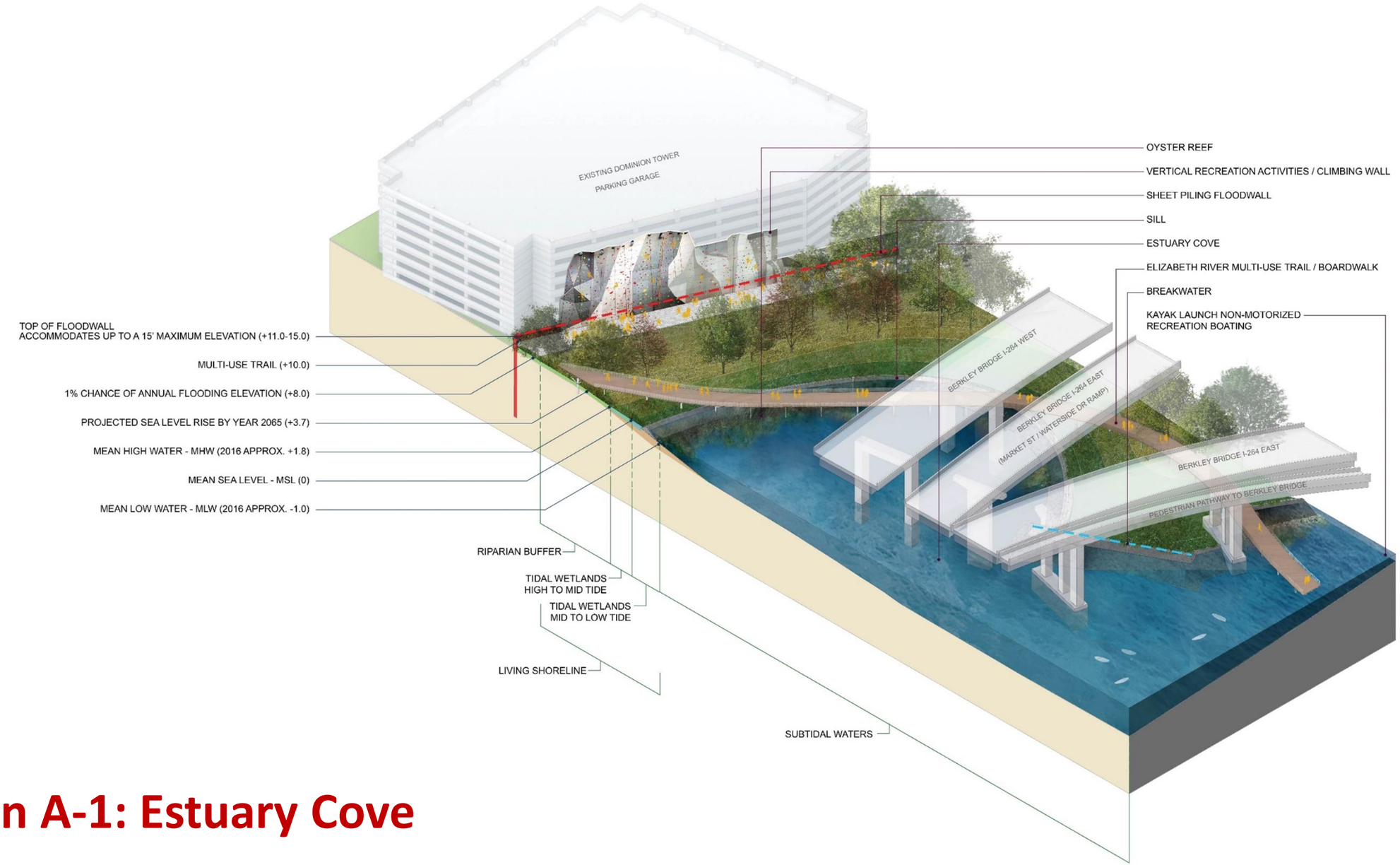
Case Study: The Bay Institute, 2013 – Horizontal Levee approach Buried Levee, Tidal Wetland Wedge



The Oro Loma Project

Project Credit: The Bay Institute, Environmental Science Associates and ECONorthwest

https://oroloma.org/horizontal-levee-project/



Section A-1: Estuary Cove

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LANDSCAPE ARCHITECTURE
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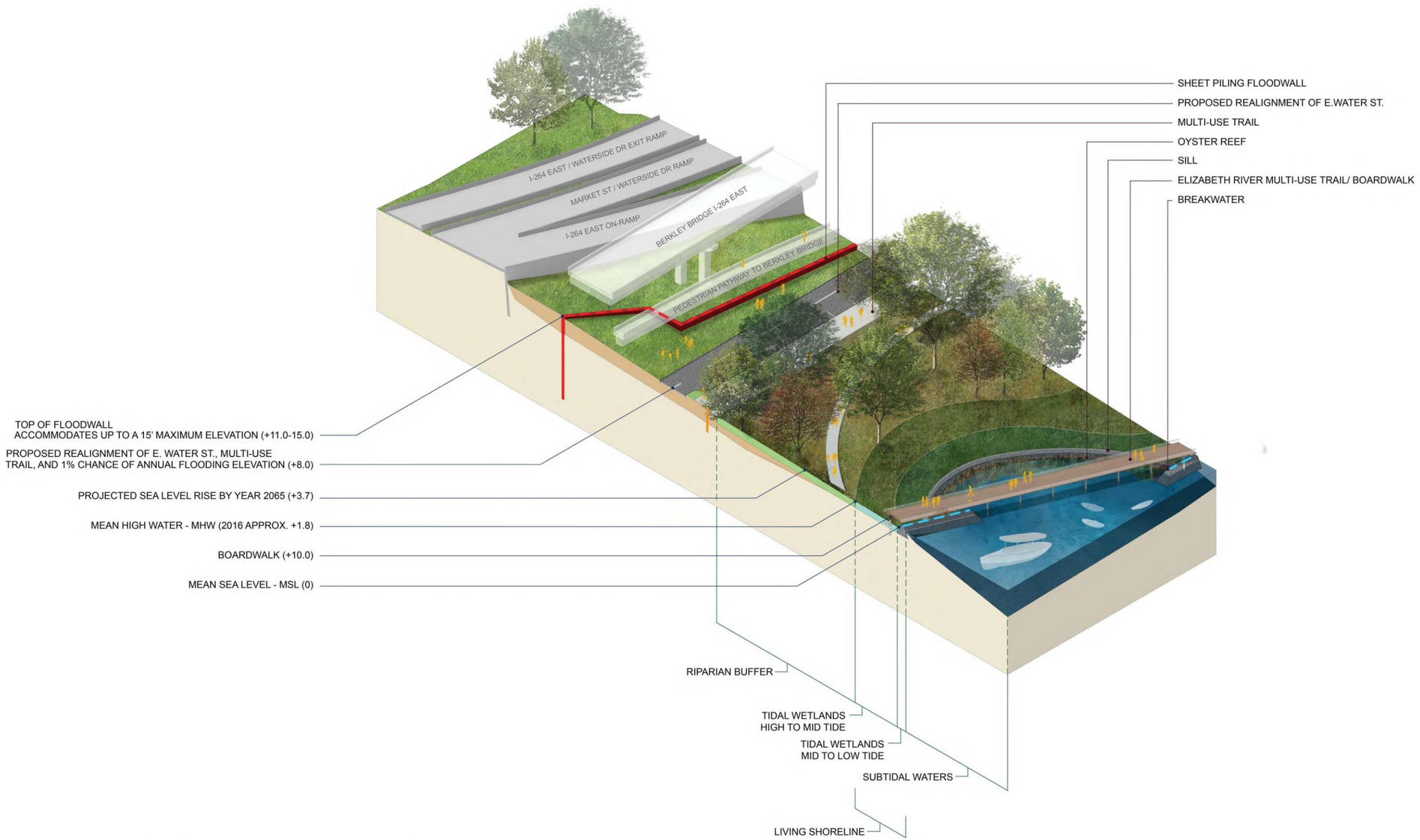

Section A-2: Living Shoreline

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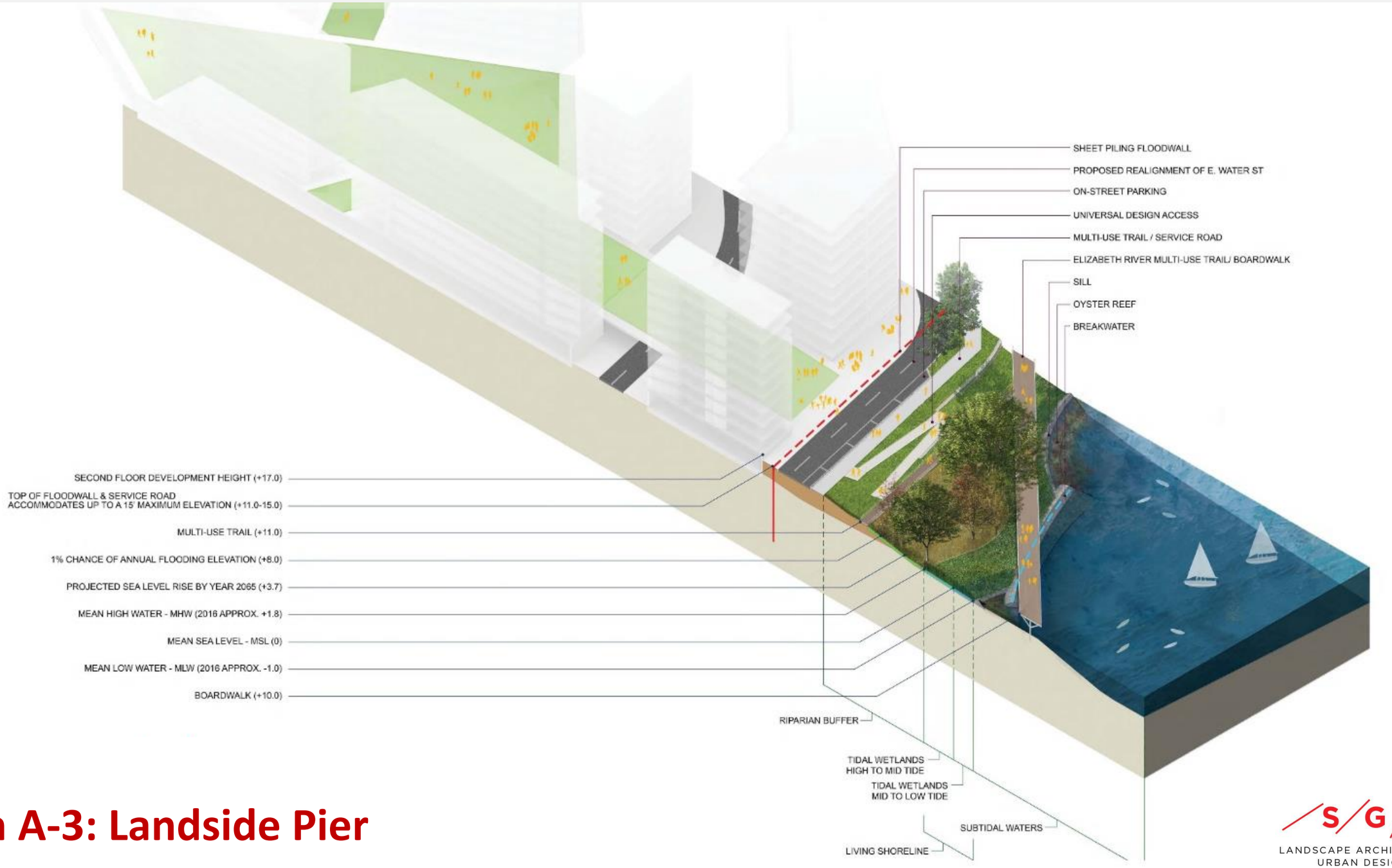

Section A-3: Landside Pier

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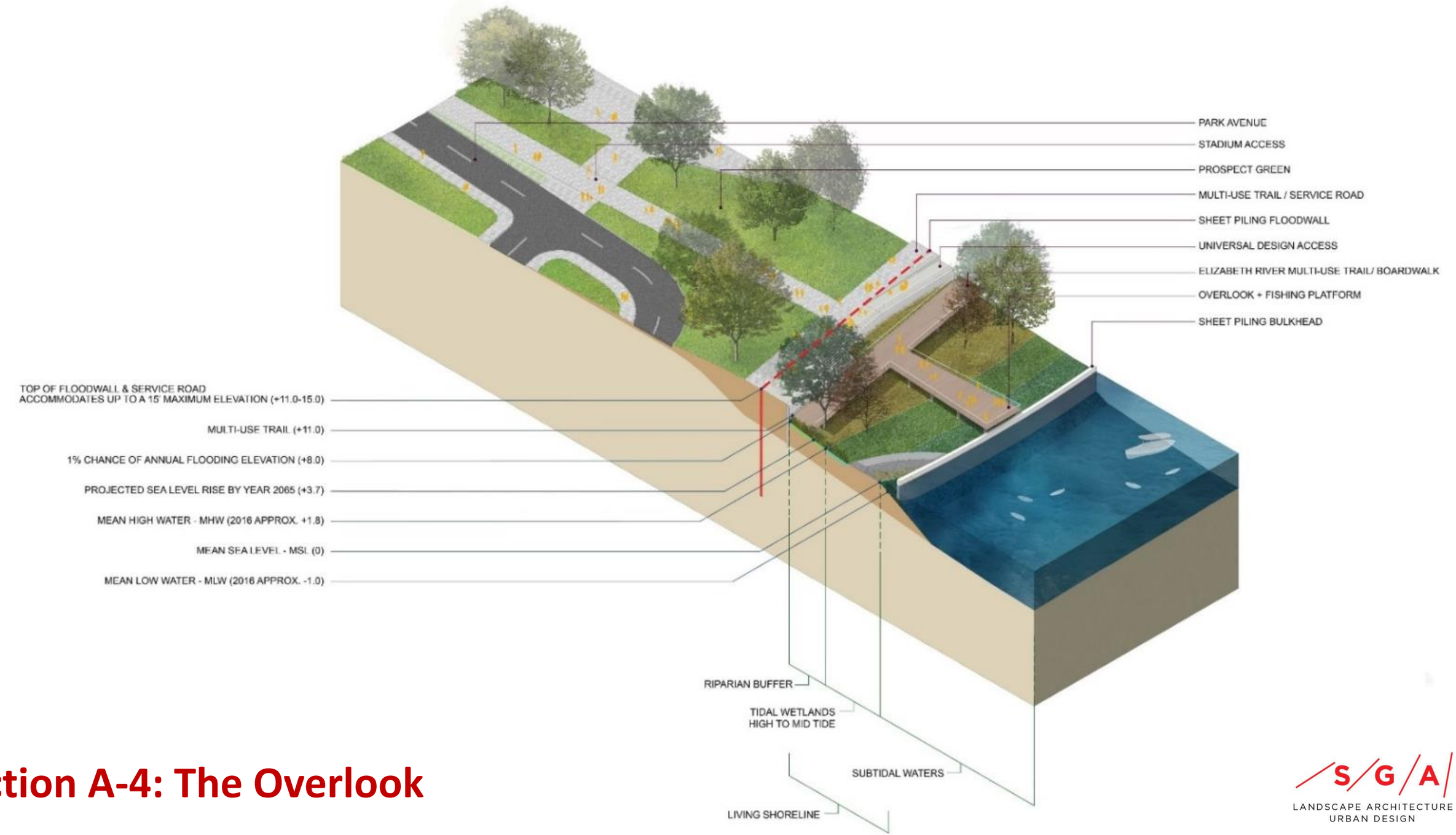

Section A-4: The Overlook

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LANDSCAPE ARCHITECTURE
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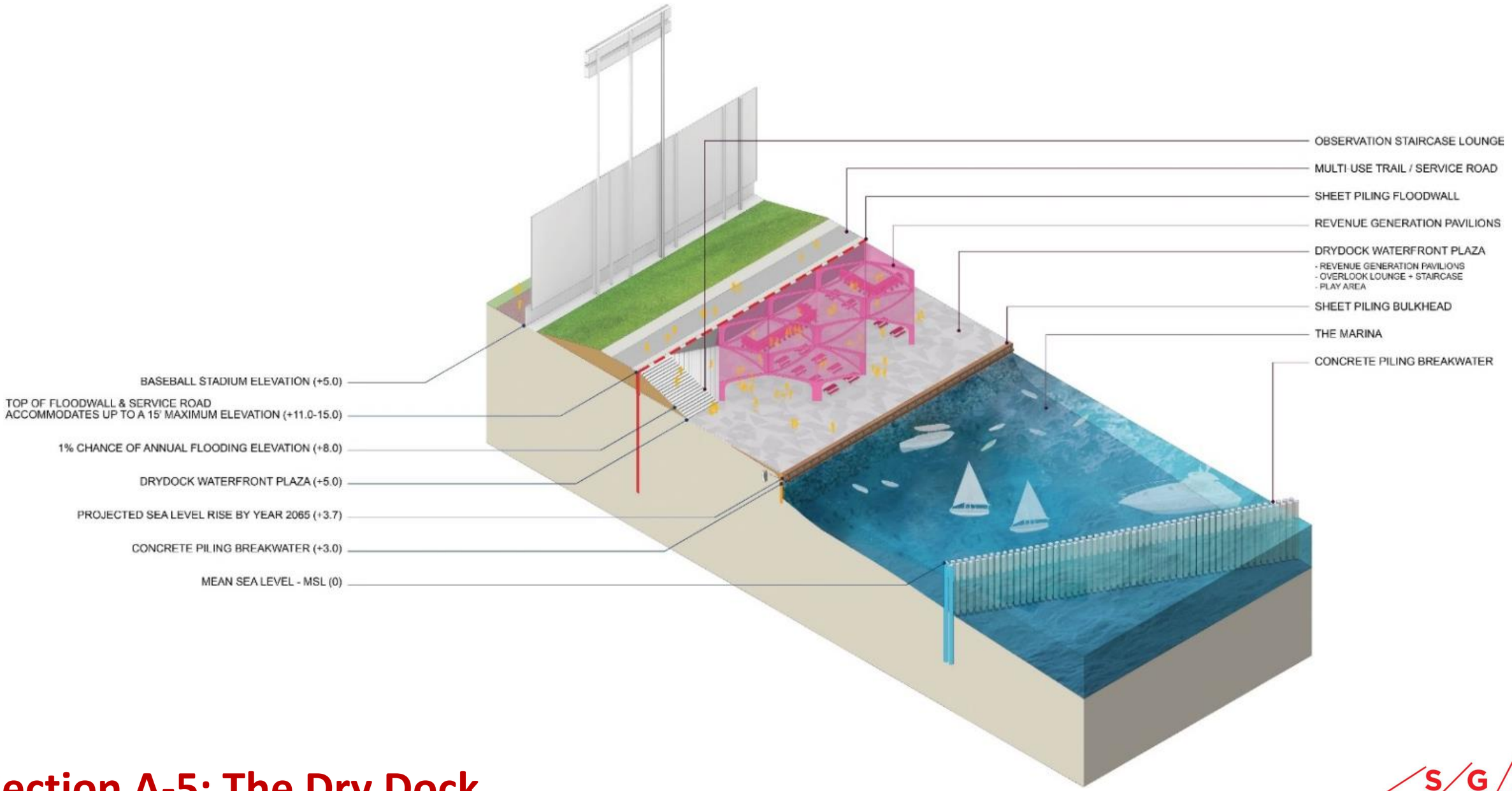

Section A-5: The Dry Dock

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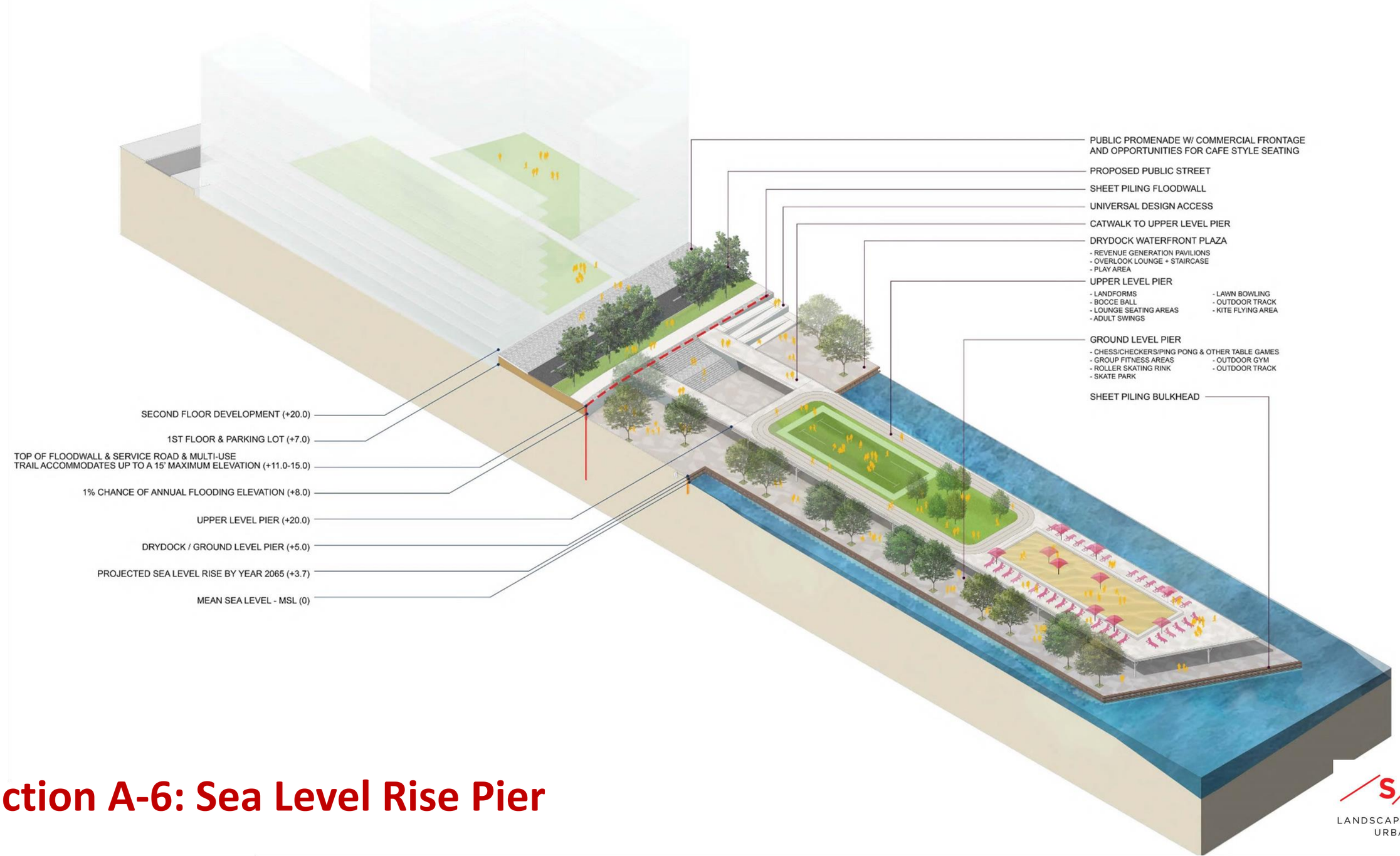

Section A-6: Sea Level Rise Pier

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LANDSCAPE ARCHITECTURE
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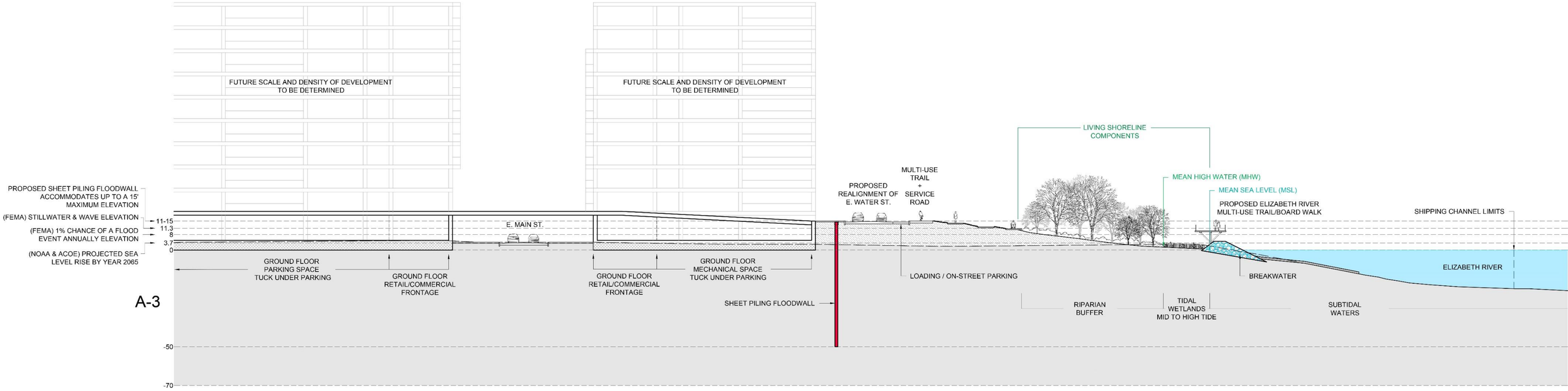
Shoreline Development Interface with Flood Protection and Living Shoreline



LANDSCAPE ARCHITECTURE
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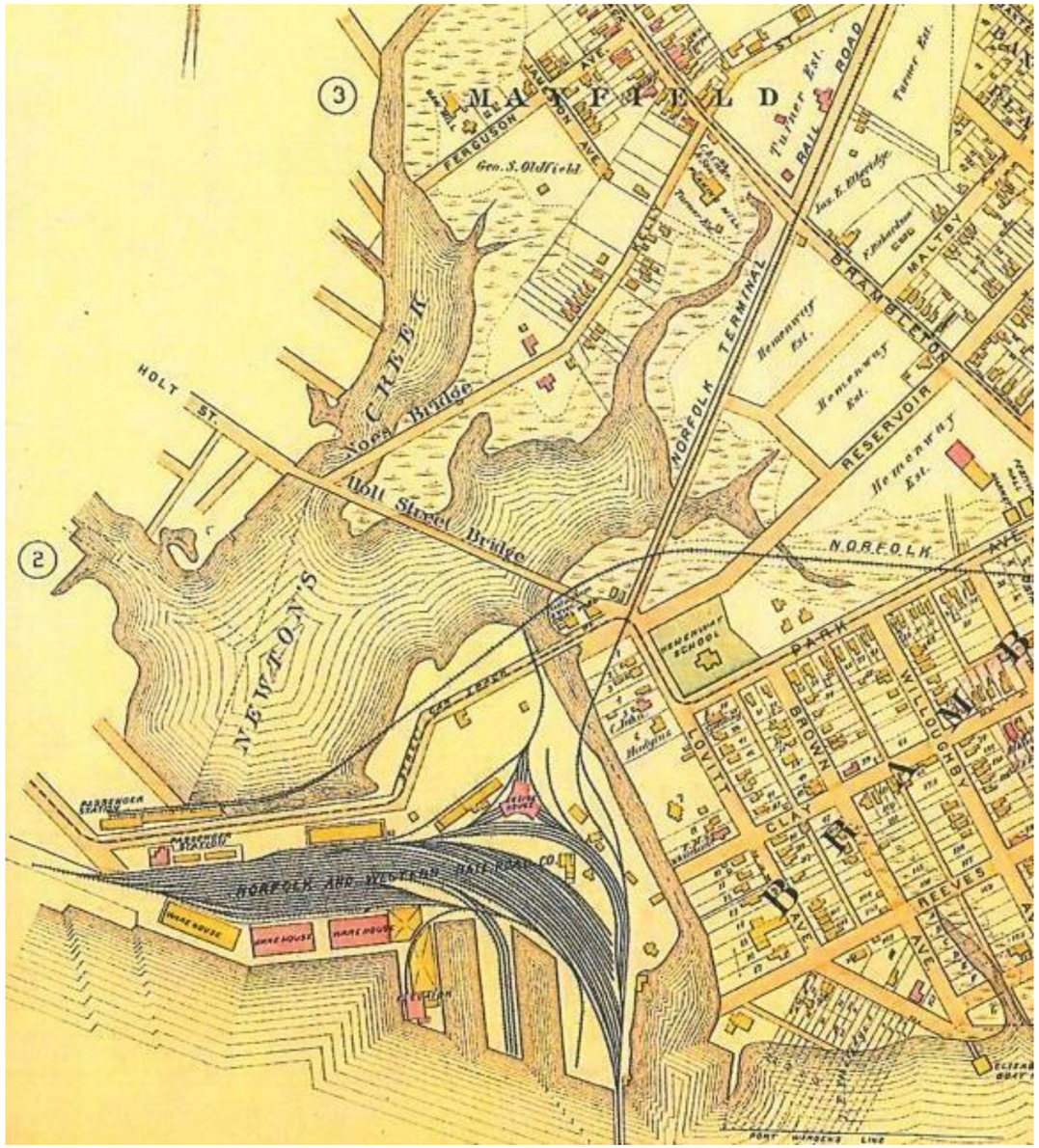
Projected Sea Level Rise By Year 2065

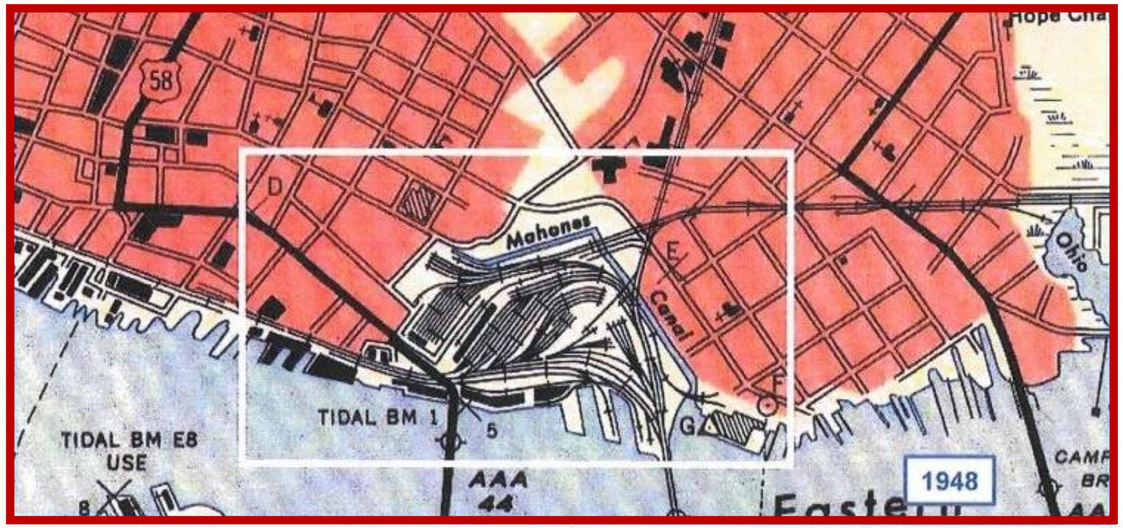
Area-Wide Plan Planning & Design Performance Criteria

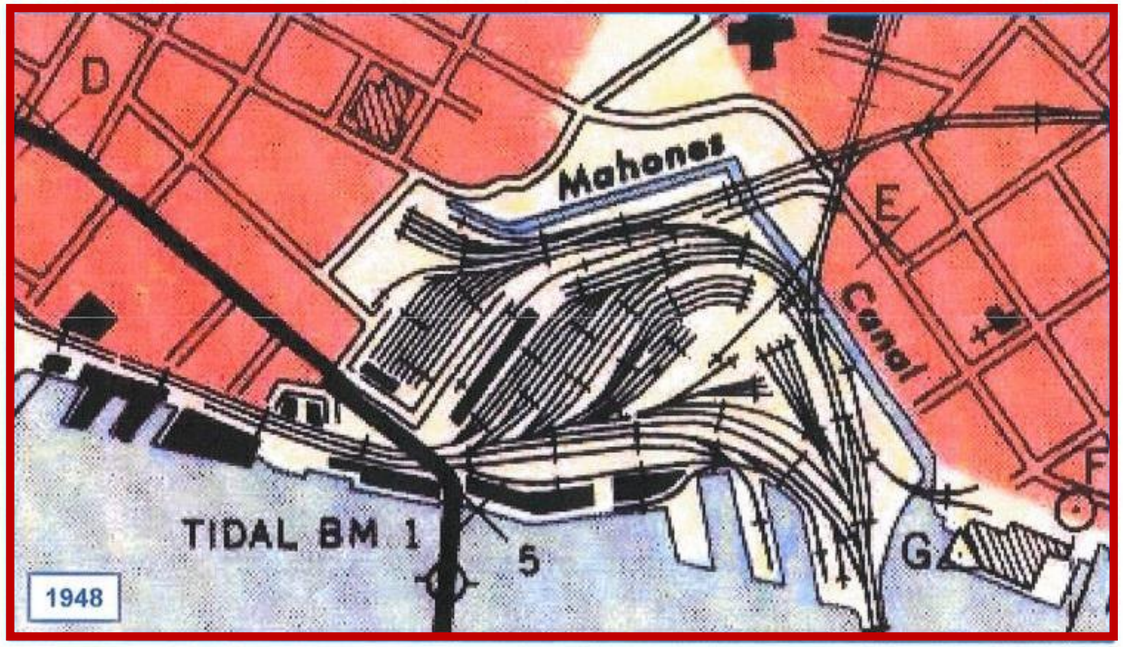
- **Integration of multiple needs into one cohesive resilience framework design strategy**
- **Ensuring multi-modal transportation connectivity**
- Expand visibility and access to the adjacent neighborhoods with community-desired recreation amenities
- Private development potential should always be considered
- Maintain and incorporate the ballpark

Historic Shoreline Analysis



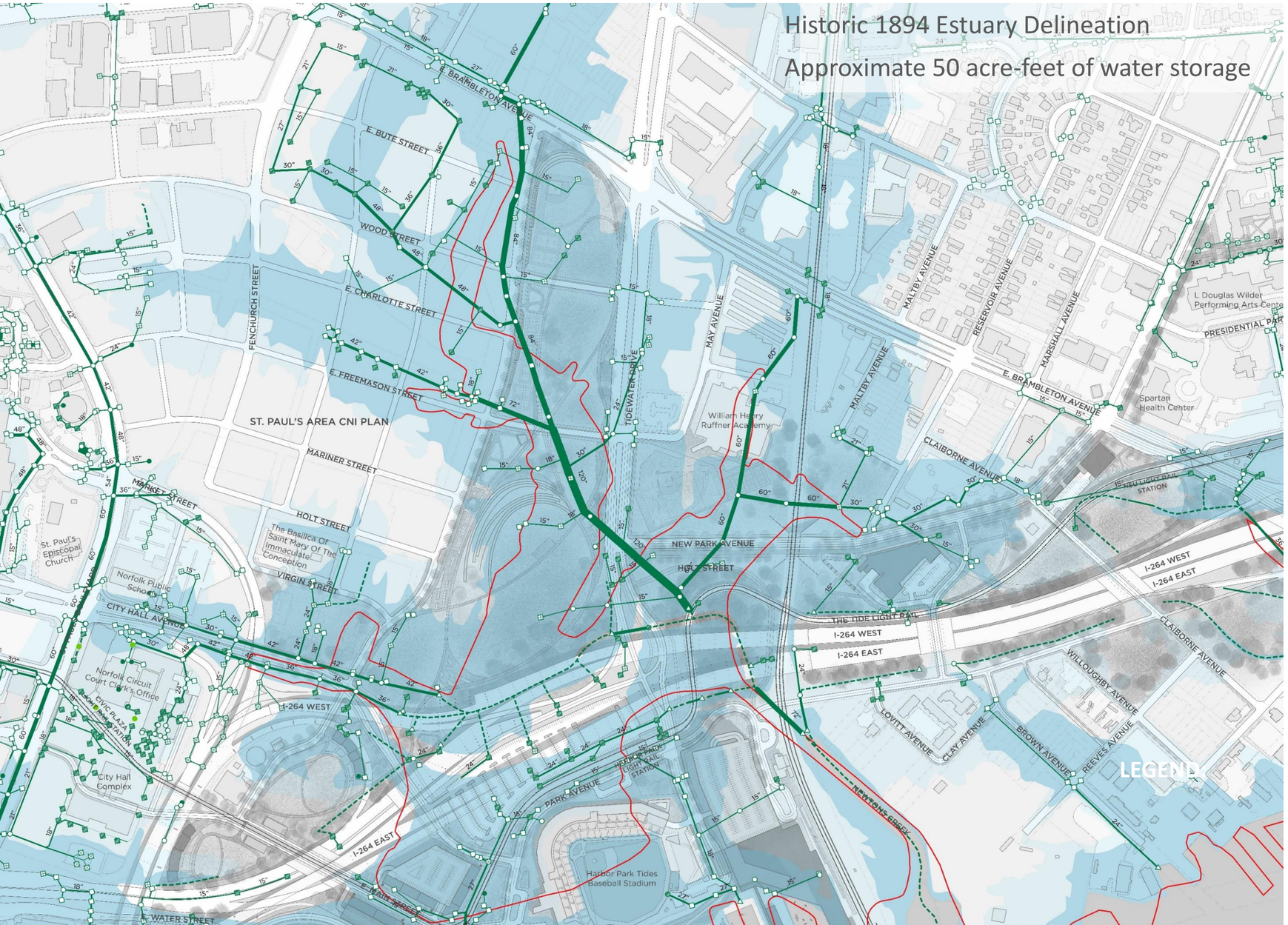
Historical 1894 Dun in the Mire Estuary (Approx. Area 50.39 Acres)

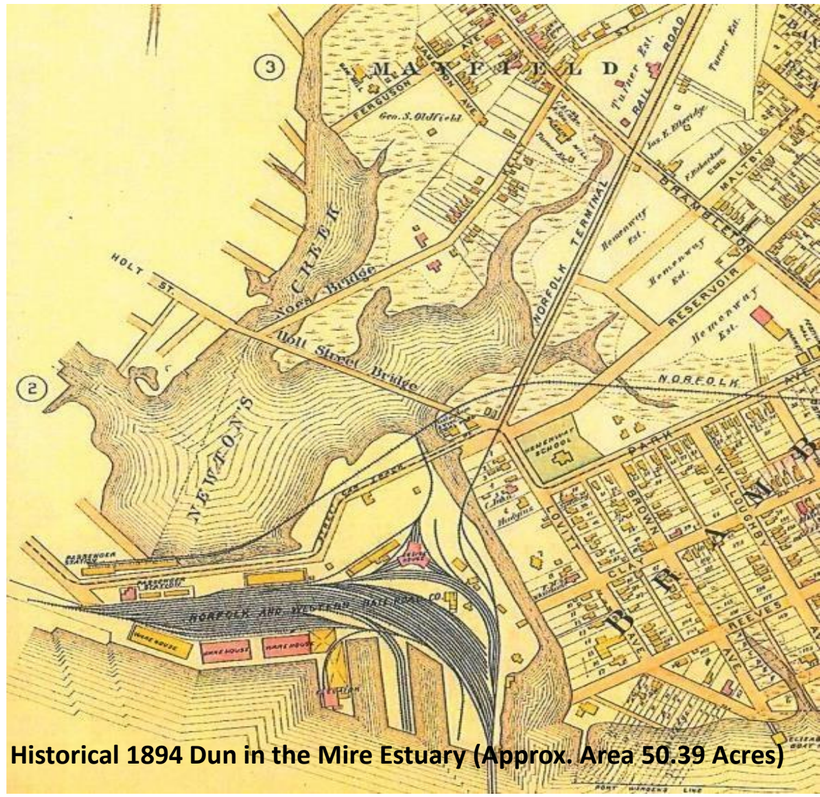




Historical 1948 Map – Harbor Park & Vicinity

Existing Stormwater Conveyance Infrastructure & Historic Shoreline Analysis





Historical 1894 Dun in the Mire Estuary (Approx. Area 50.39 Acres)

LEGEND

- Historic Shoreline (1894)
- 1% Annual Chance (100 Year) Flood
- 0.2% Annual Chance (500 Year) Flood
- Stormwater Pipes
- Stormwater Ditches
- Stormwater Manholes
- Roof Drains
- Private Structures/Pipe to Building
- Catch Basins
- Drop Inlets
- Gutter Basins
- Yard Basins
- Outfalls
- Stormwater BMPs

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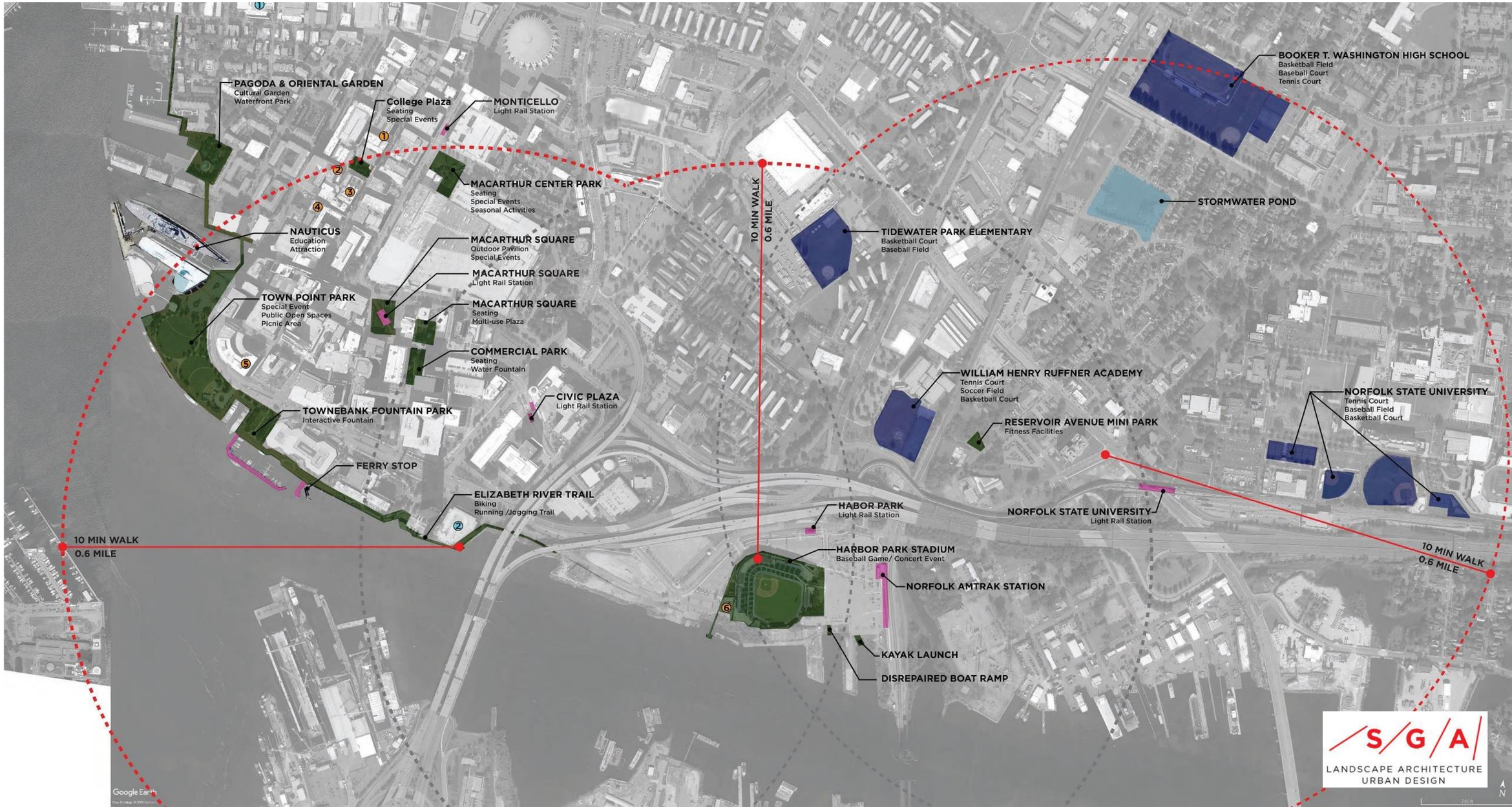
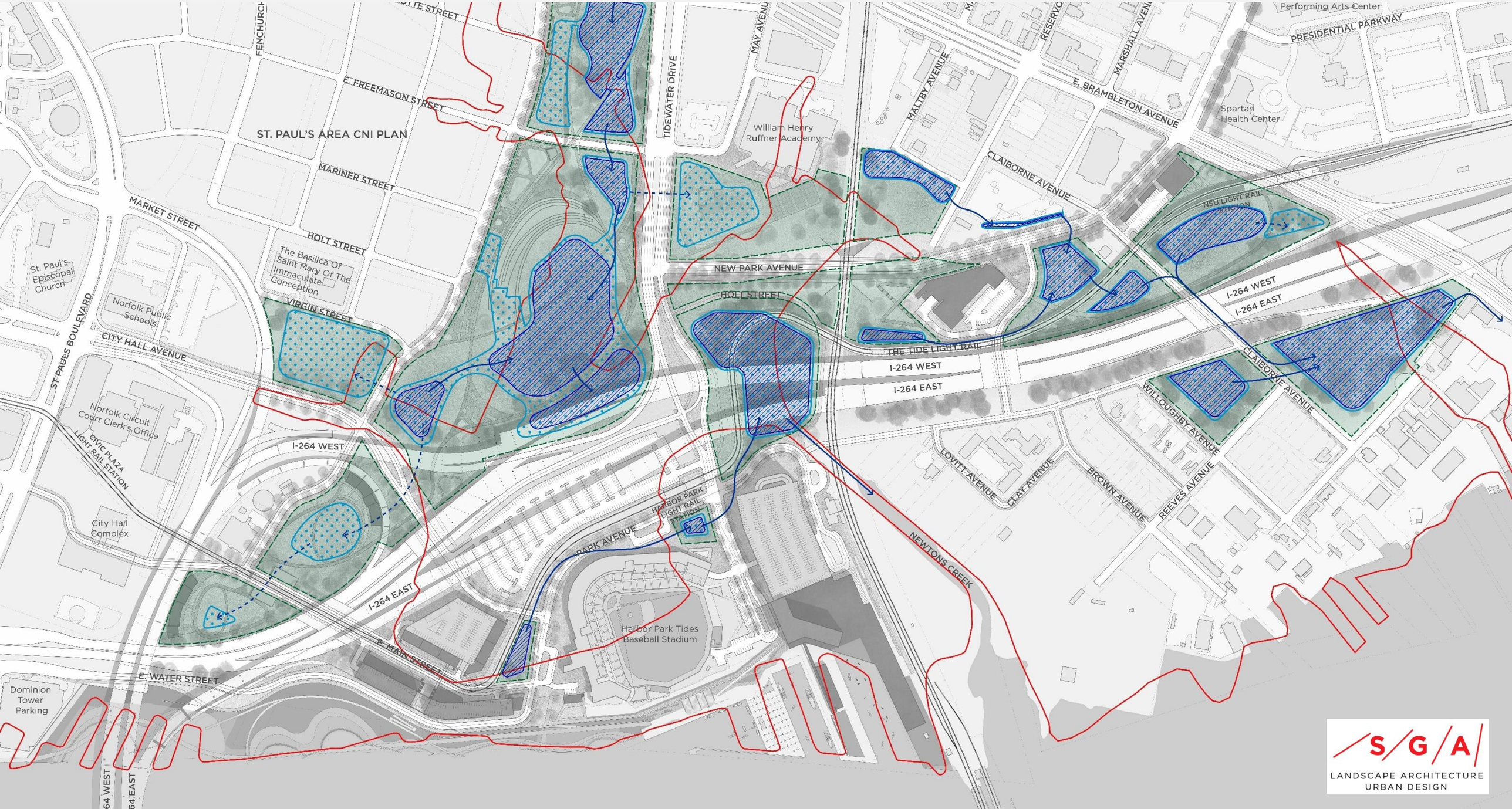
Hydrologic Basis Informs the Park

Existing Parks, Recreation Facilities, and Service Areas





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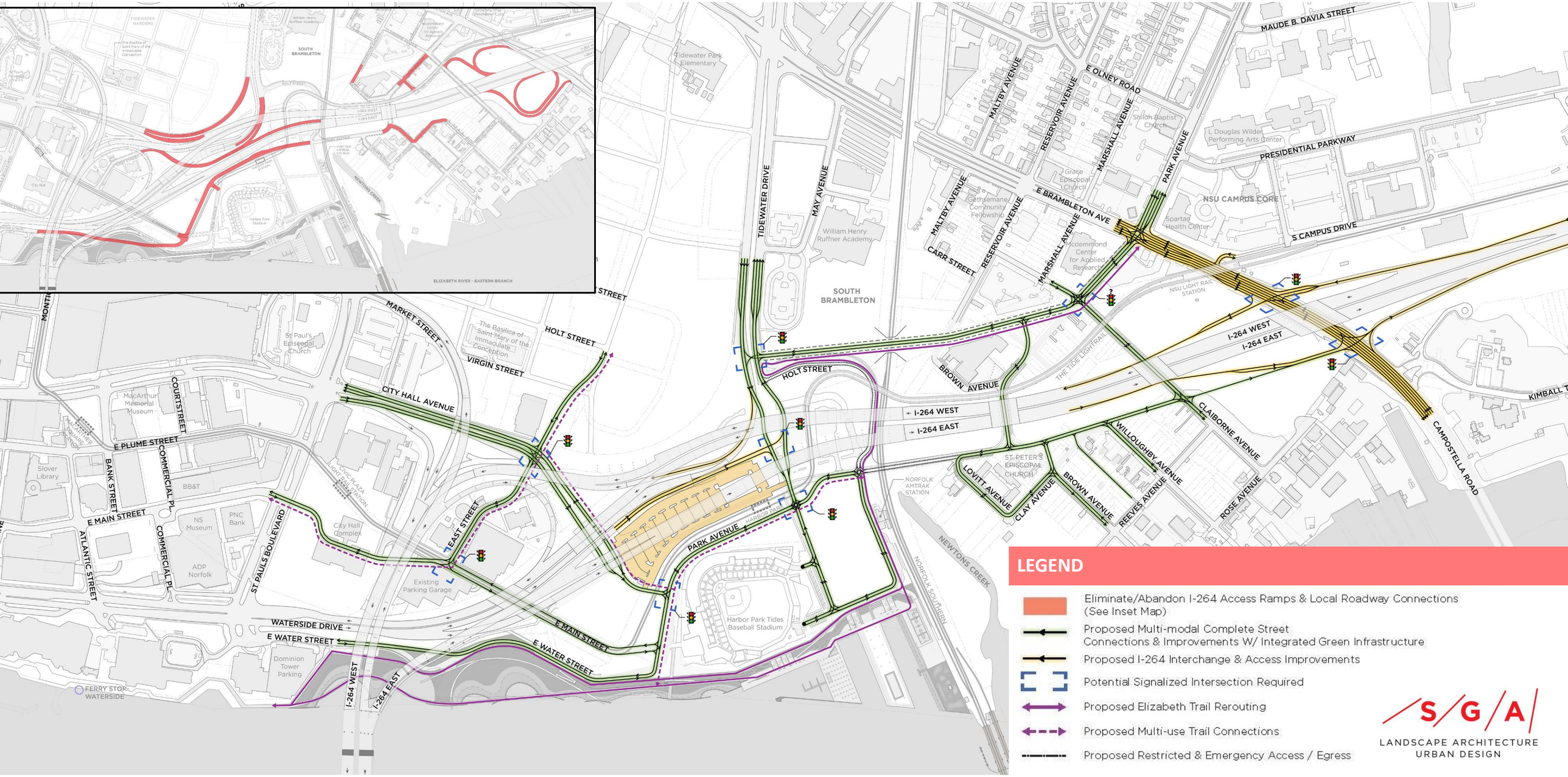
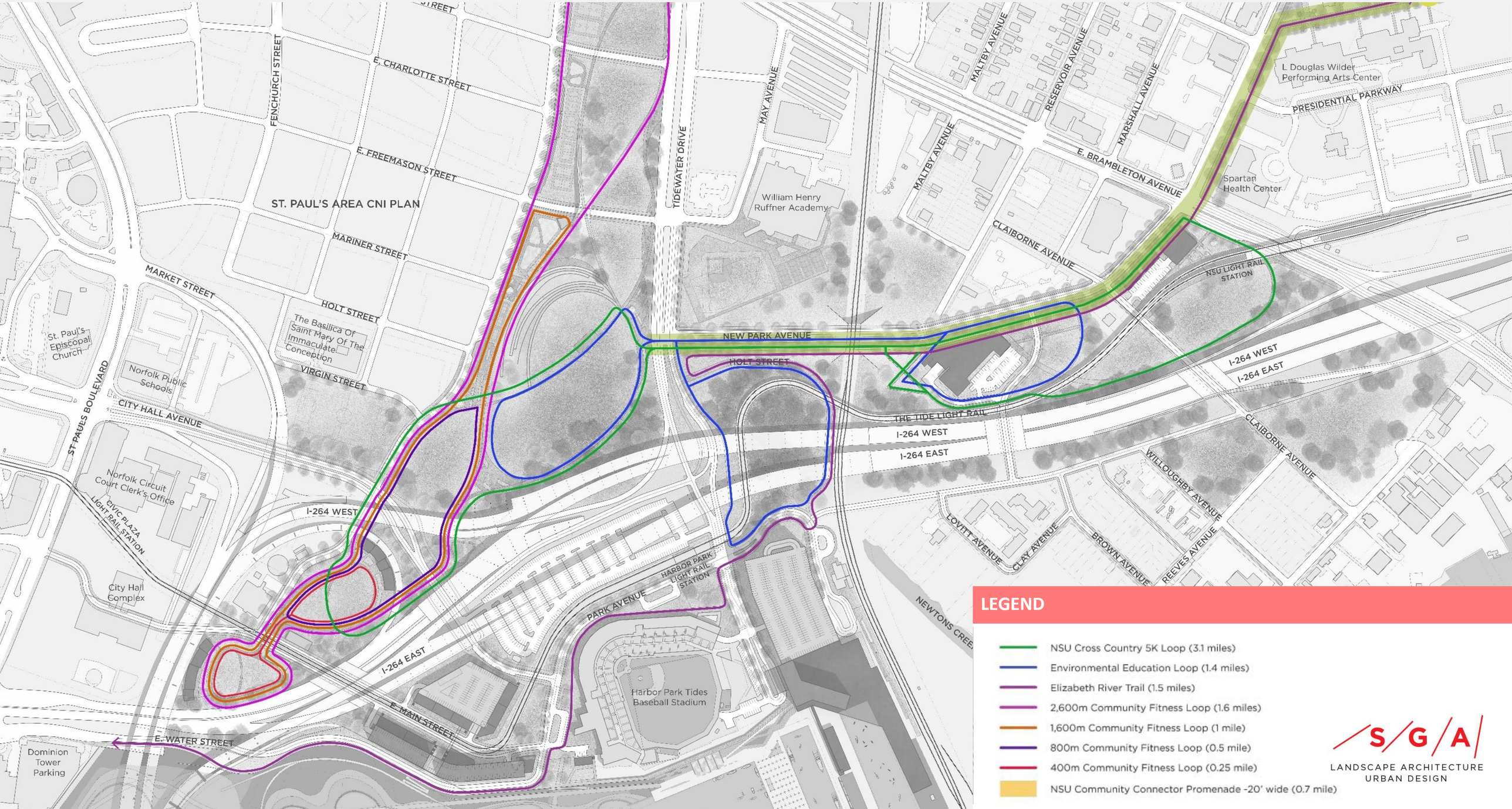
Transportation Improvements




E. CHARLOTTE STREET
FENCHURCH STREET
E. FREEMASON STREET
ST. PAUL'S AREA CNI PLAN
MARINER STREET
MARKET STREET
HOLT STREET
The Basilica Of Saint Mary Of The Immaculate Conception
VIRGIN STREET
St. Paul's Episcopal Church
Norfolk Public Schools
CITY HALL AVENUE
ST PAULS BOULEVARD
Norfolk Circuit Court Clerk's Office
CIVIC PLAZA LIGHT RAIL STATION
City Hall Complex
Dominion Tower Parking
E. WATER STREET
I-264 WEST
I-264 EAST
E. MAIN STREET
TIDEWATER DRIVE
MAY AVENUE
William Henry Ruffner Academy
NEW PARK AVENUE
HOLT STREET
THE TIDE LIGHT RAIL
PARK AVENUE
HARBOR PARK LIGHT RAIL STATION
Harbor Park Tides Baseball Stadium
NEWTONS CREE
MALTBY AVENUE
RESERVOIR AVENUE
MARSHALL AVENUE
E. BRAMBLETON AVENUE
CLAIBORNE AVENUE
NSU LIGHT RAIL STATION
L Douglas Wilder Performing Arts Center
PRESIDENTIAL PARKWAY
Spartan Health Center
WILLOUGHBY AVENUE
LOVITT AVENUE
CLAY AVENUE
BROWN AVENUE
REEVES AVENUE
LEGEND
NSU Cross Country 5K Loop (3.1 miles)
Environmental Education Loop (1.4 miles)
Elizabeth River Trail (1.5 miles)
2,600m Community Fitness Loop (1.6 miles)
1,600m Community Fitness Loop (1 mile)
800m Community Fitness Loop (0.5 mile)
400m Community Fitness Loop (0.25 mile)
NSU Community Connector Promenade -20' wide (0.7 mile)
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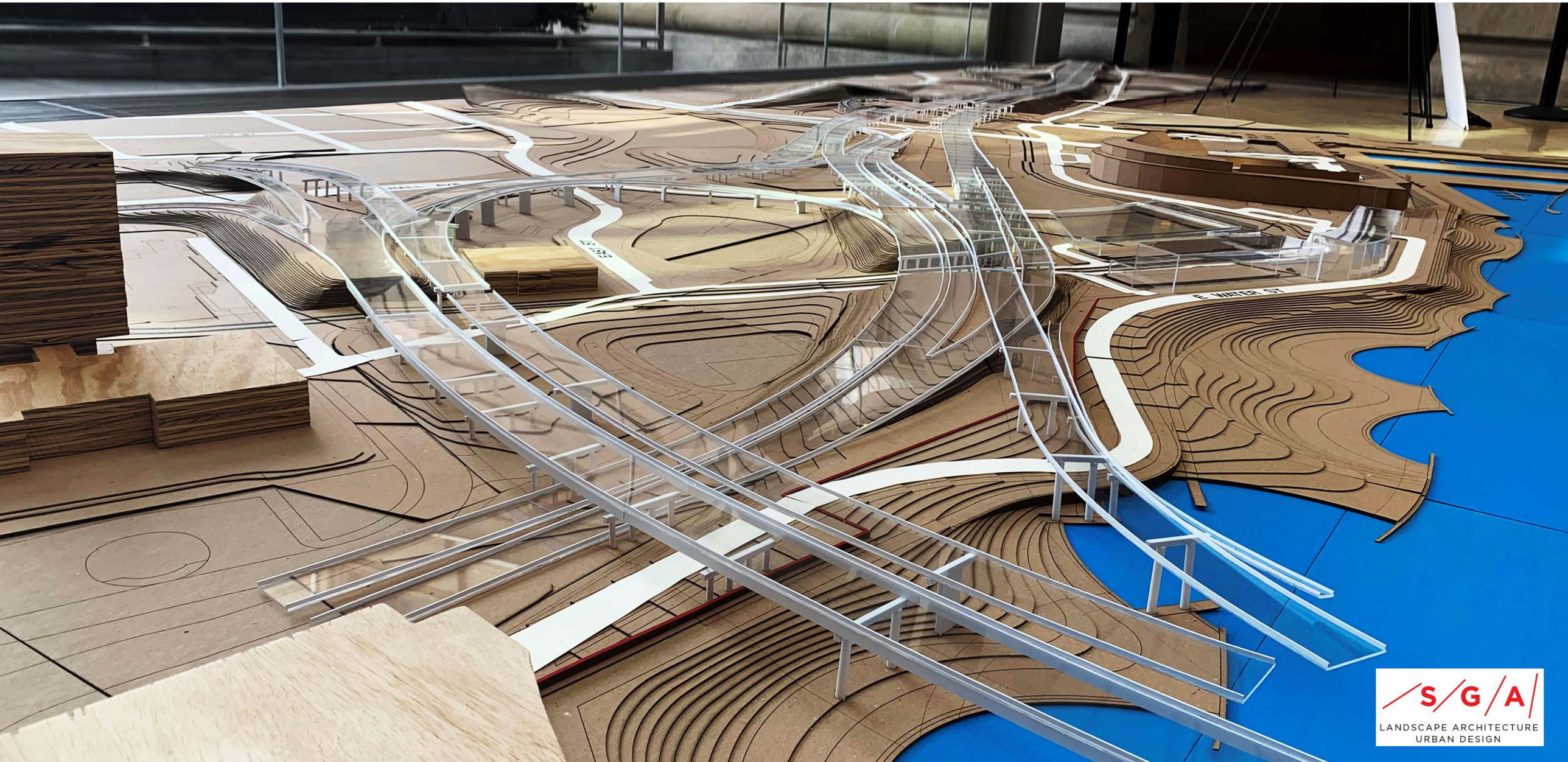
Large Scale Physical Modeling



Long-Term Buildout Plan: Harbor Park West

Bird's-eye view of Harbor Park west waterfront long-term mixed-use residential/retail redevelopment with fully integrated resilience flood protection, living shoreline, public access, and waterfront recreation amenities.

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“Teardrop” Active Recreation, Health, & Fitness Destination

Elevated view of I-264 teardrop area. Community active recreation, health, and fitness destination connecting Harbor Park, the St. Paul’s Area, and Downtown Norfolk.

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TOD Station/NSU Food Co-op

View from HRT Tide Light Rail NSU station. Looking toward the proposed Park Avenue thoroughfare and greenway.

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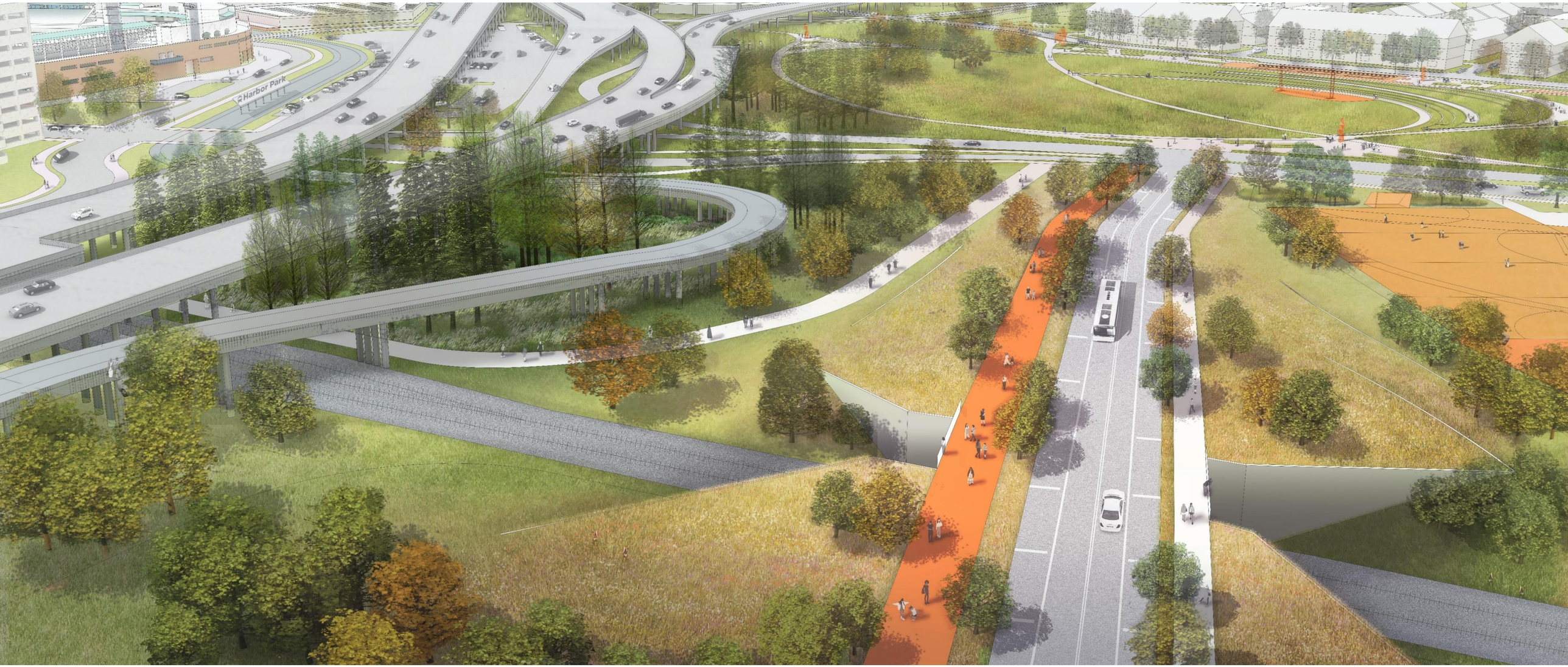
New Park Avenue Greenway



Bird's-eye view above the new Park Avenue thoroughfare and greenway. Looking toward St. Paul's Area Resilient Park, St. Paul's Area CNI Plan proposed redevelopment and Downtown beyond..

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LANDSCAPE ARCHITECTURE
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St. Paul's Area Resilient Park

Bird's-eye view of St. Paul's Area Resilient Park. Looking south toward Harbor Park.

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LANDSCAPE ARCHITECTURE
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HARBOR PARK WEST

Interim Use Visioning – Water Street Openspace

Bird's-eye view of Harbor Park West waterfront short-term, interim use, pop-up community destination.

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HARBOR PARK WEST

Aerial View

HARBOR PARK WEST

Existing Conditions, Demolition & HMI, and Survey

HARBOR PARK WEST

Post Demolition, Enviro. Site Characterization and RAP

Water Street Openspace: Precedent Images

Photo Credit: Unknown - No Copyright Infringement is intended

Photo Credit: Christian Philips

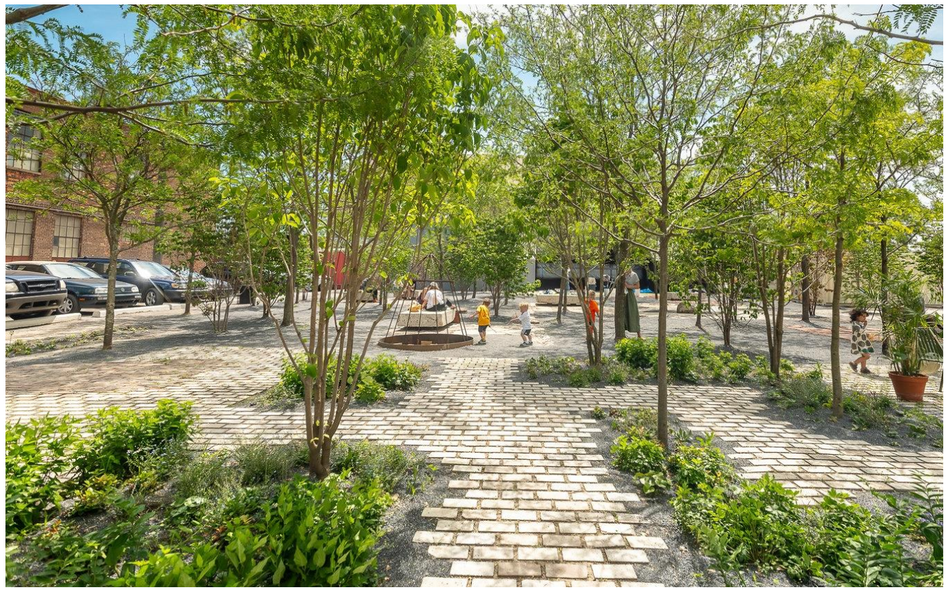

Photo Credit: D.I.R.T Studio

Photo Credit: metrobox architekten

HARBOR PARK WEST

Phase 1: Water Street Openspace Plan Cap - 50% Design

/S/G/A
LANDSCAPE ARCHITECTURE
URBAN DESIGN

HARBOR PARK WEST

Phase 1: Water Street Openspace - 50% Design

HARBOR PARK WEST

Phase 1: Water Street Openspace - 50% Design

How was this work funded?

1.1 Million in Brownfields Funding successfully secured by the City of Norfolk

- **2 - 50K DEQ Virginia Economic Development Partnership Assessment Grants**
- **1 - 500K DEQ Virginia Economic Development Partnership Remediation Grant**
- **1 - 300K U.S. EPA Brownfields Assessment Grant (no local match required)**
- **1 - 200K U.S. EPA Brownfields Area-Wide Plan Grant (R.I.P.)**

Follow-up Federal Brownfields Funding Opportunities

- U.S. EPA Multi-Purpose Grant – Up to $800K
- U.S. EPA Brownfields Revolving Loan Fund Grant – Up to $1M
- U.S. EPA Brownfields Clean-up Grants – Up to $500K
- U.S. EPA Brownfields Direct Technical Assistance Support
- U.S. EPA Brownfields Assessment Grant - 200K-300K

In March 2018 the BUILD Act was signed into law and expanded program funding limits to the existing brownfields legislation.

QUESTIONS?

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tstromberg@s-ga.com
www.s-ga.com

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URBAN DESIGN

Implementation Action Strategy and Next Steps

Coastal Resilience Infrastructure Implementation Action Strategy

- **Flood Protection alignment analysis and coordination with Development**
- Comprehensive topographic, bathymetric, and utility surveys
- Geotechnical survey and analysis
- Hazardous materials/environmental assessment
- Wetlands delineation/tidal zone analysis
- Hydrology and hydraulics studies

Stormwater Management and Community Recreation Implementation Action Strategy

- Stormwater feasibility and constructability analysis
- **Securing agency buy-in**
- Watershed impact analysis
- **Funding/financing strategy**
- Environmental due diligence
- Coordination with coastal flood protection efforts
- Topographic Analysis and preliminary stormwater engineering

Environmental Due Diligence Action Strategy – Next Steps

- Inventory and quantify all brownfields properties
- **Perform environmental due diligence and assessments**
- Address historic maritime structures
- Evaluate historic fill materials
- Support necessary demolition activities
- Perform detailed site assessments and remedial action plans
- **Consider special soil management strategies**
- Continue agency coordination with Virginia DEQ

ST. PAUL'S AREA CNI PLAN
CHARLOTTE STREET
FENCHURCH
ST. PAULS BOULEVARD
E. FREEMASON STREET
MARINER STREET
MARKET STREET
HOLT STREET
VIRGIN STREET
CITY HALL AVENUE
ST. PAUL'S EPISCOPAL CHURCH
NORFOLK PUBLIC SCHOOLS
THE BASILICA OF SAINT MARY OF THE IMMACULATE CONCEPTION
NORFOLK CIRCUIT COURT CLERK'S OFFICE
CIVIC PLAZA LIGHT RAIL STATION
CITY HALL COMPLEX
DOMINION TOWER PARKING
I-264 WEST
I-264 EAST
"TEARDROP" OUTDOOR HEALTH & WELLNESS AREA
HARBOR PARK WEST
E. MAIN STREET
E. WATER STREET
THE TIDE LIGHT RAIL
HARBOR PARK LIGHT RAIL STATION
PARK AVENUE
HARBOR PARK TIDES BASEBALL STADIUM
HARBOR PARK EAST
AMTRAK STATION
NORFOLK SOUTHERN RAILWAY
NEWTONS CREEK
ST. PAUL'S AREA RESILIENT PARK
TIDEWATER DRIVE
MAY AVENUE
WILLIAM HENRY RUFFNER ACADEMY
PARK AVENUE GREENWAY
NEW PARK AVENUE
MALTBY AVENUE
SOUTH BRAMBLETON
E. BRAMBLETON AVENUE
RESERVOIR A
MARSHALL AVENUE
CLAIBORNE AVENUE
MCDEMMOND CENTER FOR APPLIED RESEARCH
PERFORMING ARTS CENTER
PRESIDENTIAL PARKWAY
NSU CAMPUS CORE
SPARTAN HEALTH CENTER
NSU LIGHT RAIL STATION
ST. PETER'S EPISCOPAL CHURCH
LOVITT AVENUE
CLAY AVENUE
BROWN AVENUE
WILLOUGHBY AVENUE
REEVES AVENUE
CONSTRUCTABILITY PLAN PROPOSED LIVING SHORELINE AND WATERFRONT RECREATION
EXISTING HRT FERRY TERMINAL
ELIZABETH RIVER - EASTERN BRANCH
/S/G/A/
LANDSCAPE ARCHITECTURE
URBAN DESIGN