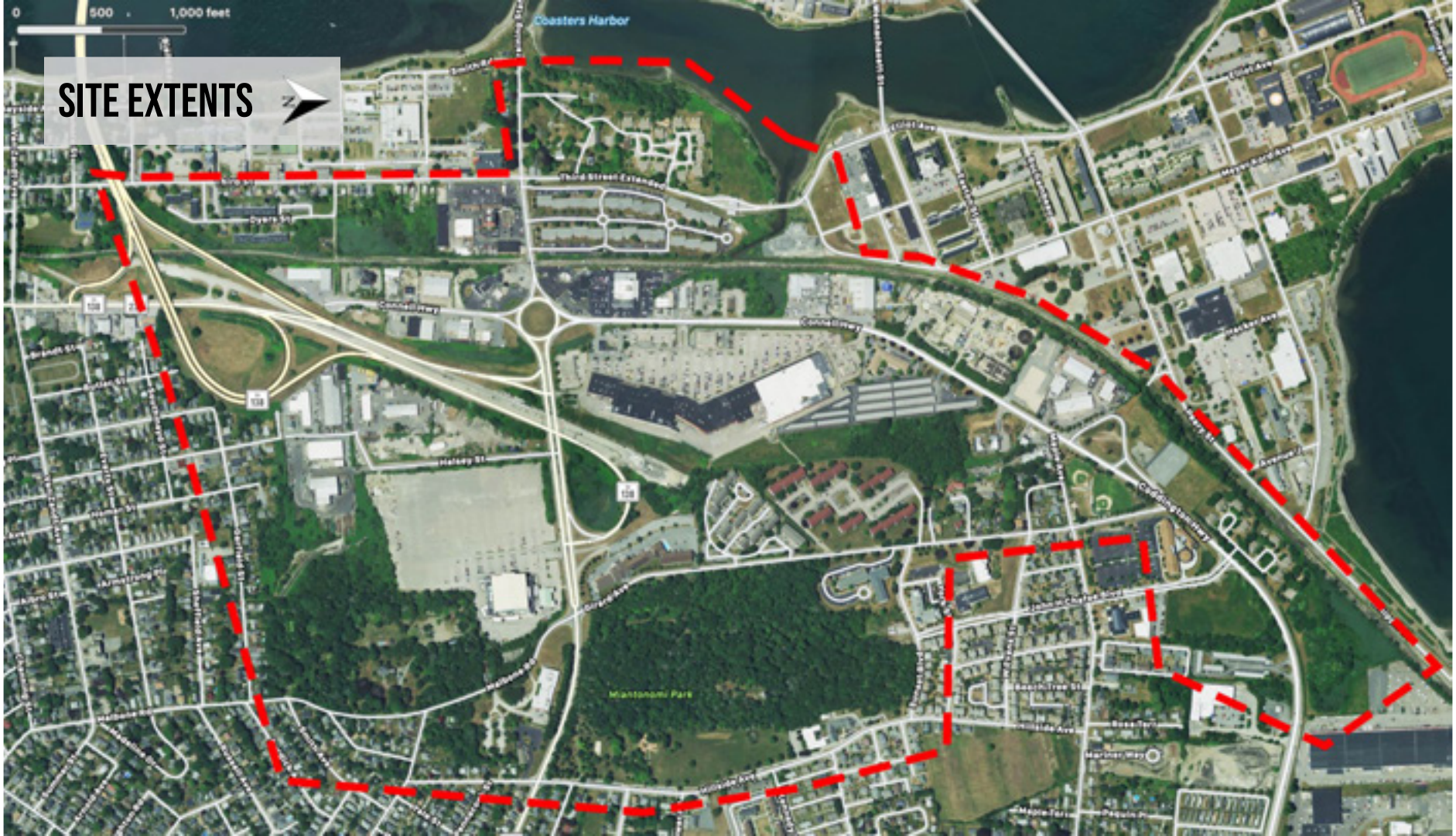
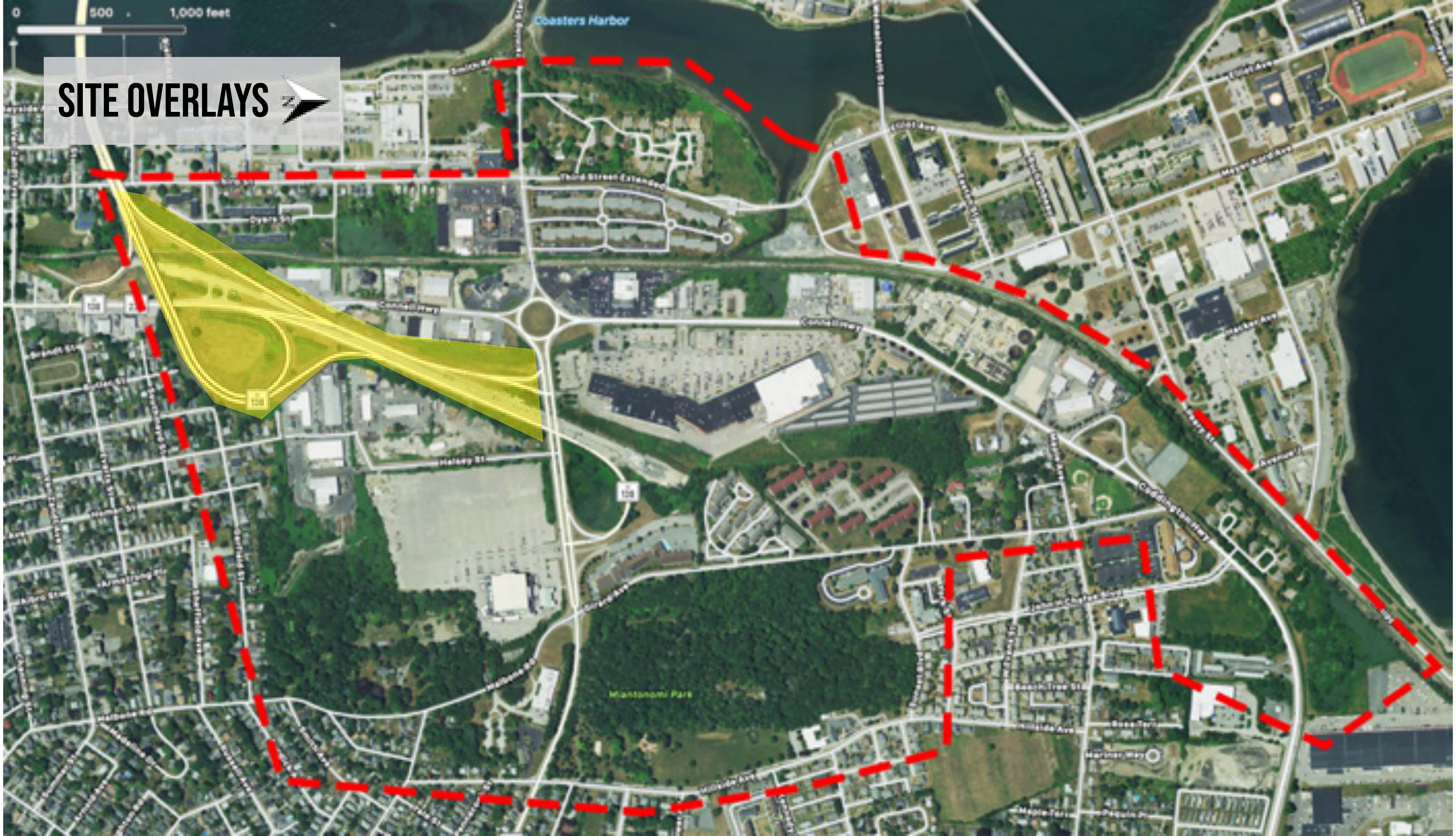

NEWPORT
NORTH END


0
500
1,000 feet
SITE EXTENTS
Coasters Harbor
Third Street Extension
Halsey St
Memorial Pkwy
Mantonomi Park

SITE OVERLAYS

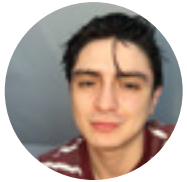


NORTH END NEWPORT

NORTH END GATEWAY | JT CONNELL HIGHWAY | ELIZABETH BROOK

LANDSCAPE ARCHITECTURE CAPSTONE 2021

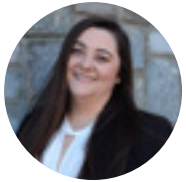
Lindsey Corse



David Gomez

Sophie Haddock

James Hinson



Miranda Hulme

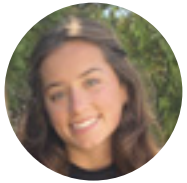
Aleksus Jagminas

Kevin Kloos

Samantha Lopes

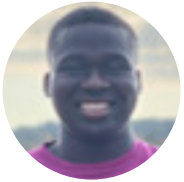
Nick Mackevich

Nahirovys Matos

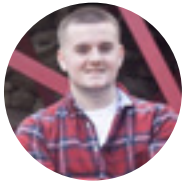


Sarah McGraw

Brian McMahon



Kojo Nsiah



Phil Purcell

Jonathan Reyes

Maggie Spano


NORTH END
GATEWAY

NORTH END GATEWAY

Aleksus Jagminas

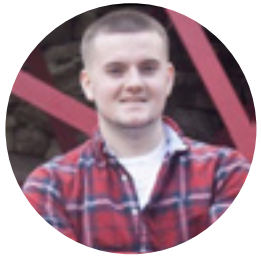
I'm interested in creating a more welcoming and environmentally conscious Newport. I will achieve this through plantings and urban initiatives such as recreational parks, dog parks and small business opportunities.

Samantha Lopes

I am interested in finding a solution to improving the safety of pedestrians, and shifting the transportation to multimodal, in a city that is automobile centralized; in order to address the issues of pollution, and stormwater runoff; I will look into the possibilities of redesigning the rotary to implement bioswales and native plantings.

Nick Mackevich

I'm interested in understanding how someone who is coming to Newport for the first time perceives the city as they drive in from the Pell Bridge side. How can we create a gateway to Newport as to represent the city as you enter. As well preserving a new green space for the public that will be a result of this improved road alignment.



Phil Purcell

I'm interested in redesigning the roundabout by using bioswales and coastal plantings in order to collect stormwater runoff and store it before being filtrated. In addition to this, I am also focusing on making RIDOT's Pell Bridge plan more sustainable by adding bioswales as well as more tree plantings to improve the biodiversity in the north end and along the roadway.

OCTOBER 27, 2020
DOT MEETING
EXISTING CONDITIONS

OCTOBER 27, 2020
DOT MEETING
PROPOSED REALIGNMENT

PROPOSED DOT PELL BRIDGE REALIGNMENT

PROPOSED ROADWAY REMOVAL

MAJOR CHANGES TO EXISTING ROADWAY

PROPOSED ROADWAY

NEWPORT GATEWAY

BY NICK MACKEVICH

I’M INTERESTED IN

CREATING A NOTABLE **GATEWAY** INTO NEWPORT VIA THE PELL BRIDGE ACTRESS POINT.

WHILE CREATING A **LINEAR** PARK TO GIVE RESIDENTS ACCESS TO **GREEN SPACE** AND

MITIGATING WATER RUNOFF.

DESIGN GOALS

- CONSERVE GREEN SPACE AS A RESULT NEW ROAD ALIGNMENT
- CREATE AN ACCESSIBLE PARK FOR NORTH END RESIDENTS
- CREATE A PIECE OF NATURE WITHIN THE NORTH END
- MANAGE STORMWATER RUNOFF
- MITIGATE IMPERVIOUS SURFACES

RAINWATER RUNOFF

PERVIOUS SURFACES:

12.3 ACRES

½ IN. RAINFALL (0.15) = 30,360 GAL.

1 IN. RAINFALL (0.15) = 66,250 GAL.

IMPERVIOUS SURFACES :

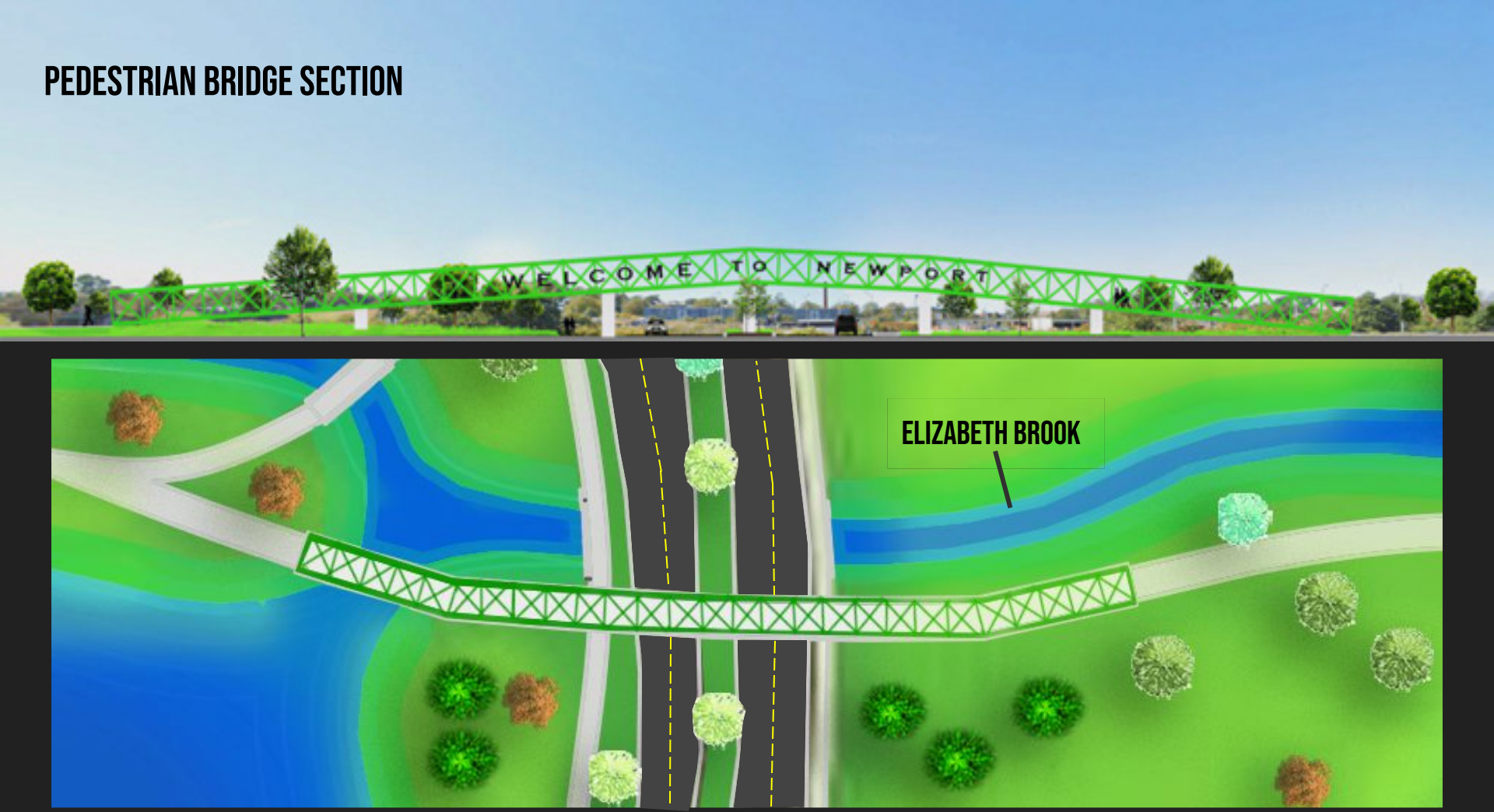
22.5 ACRES

½ IN. RAINFALL (0.85) = 455,346 GAL.

1 IN. RAINFALL (0.85) = 925,680 GAL.


PARKING LOT TREES
ELIZABETH BROOK
RETENTION POND
PEDESTRIAN BRIDGE
1/2 MILE WALKING PATH
DEVELOPMENT SPACE
0'
50'
100'
200'
300'
N

PEDESTRIAN BRIDGE SECTION



BRIDGE OFF RAMP BEFORE & AFTER

INCREASED TREE CANOPY
IMPROVED ROADWAY BARRIERS
IMPROVED AND DISTINCTIVE LIGHTING

DESIGN PECIDENTS

PELL BRIDGE REDESIGN

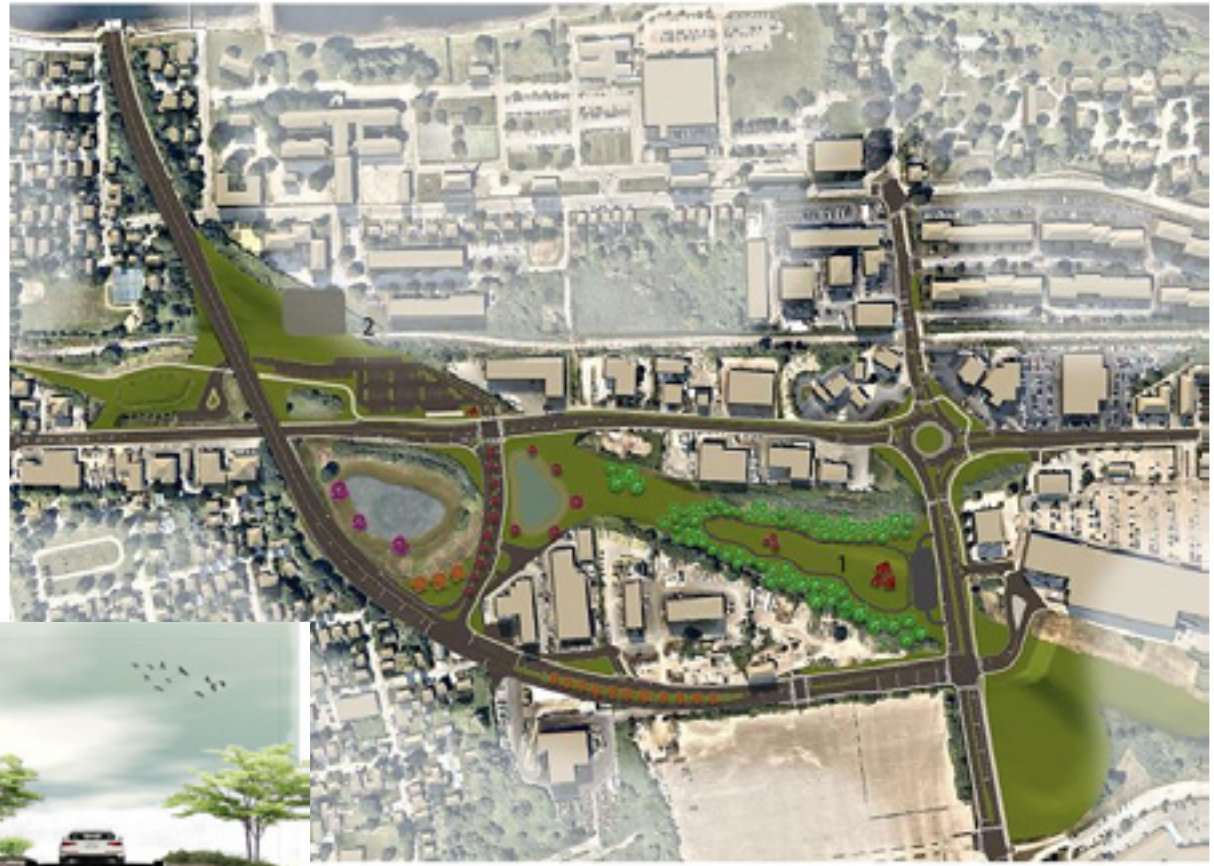
ALEKSUS JAGMINAS

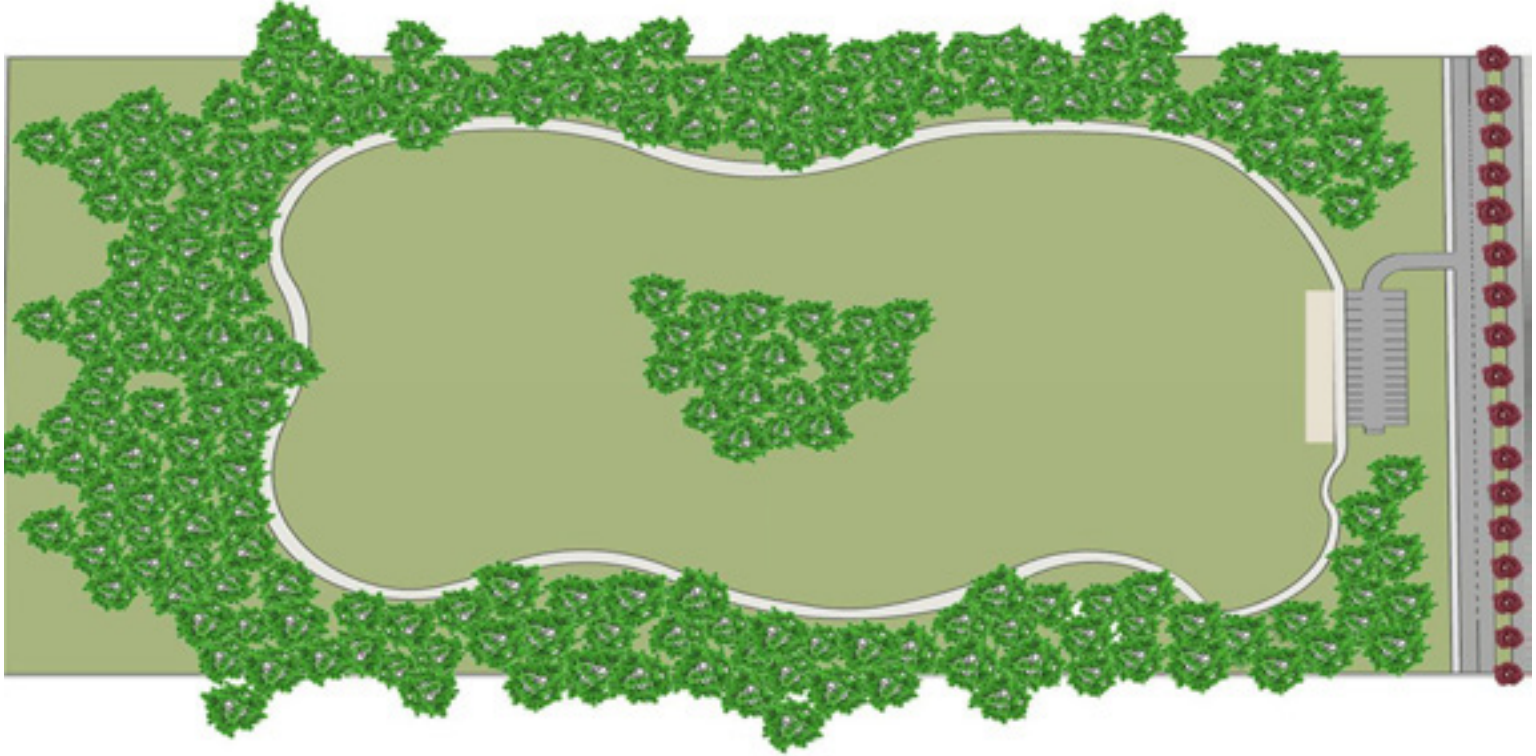
DESIGN PROMPT

I AM INTERESTED IN CREATING A MORE WELCOMING AND SUSTAINABLE NEWPORT. IN ORDER TO ACHIEVE THIS I HOPE TO IMPROVE **STORMWATER MANAGEMENT**, **COMMUNITY OPEN SPACE** AND IMPROVEMENTS TO THE **OVERALL AESTHETIC**.

MAIN ELEMENTS:

- IMPROVE CIRCULATION TO REDUCE CONGESTION
- IMPROVE SITE LINES TO LIMIT TRAFFIC COLLISIONS
- UPGRADE STORM WATER MANAGEMENT
- PROVIDE GREEN SPACE FOR SURROUNDING COMMUNITIES AND SMALL BUSINESSES



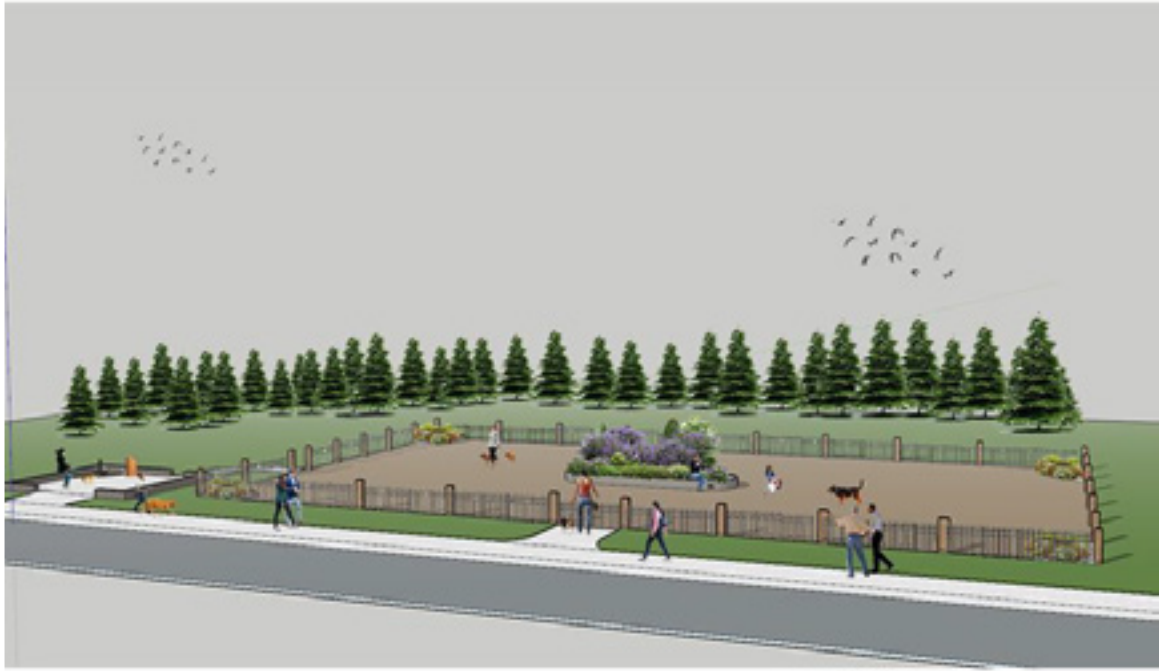


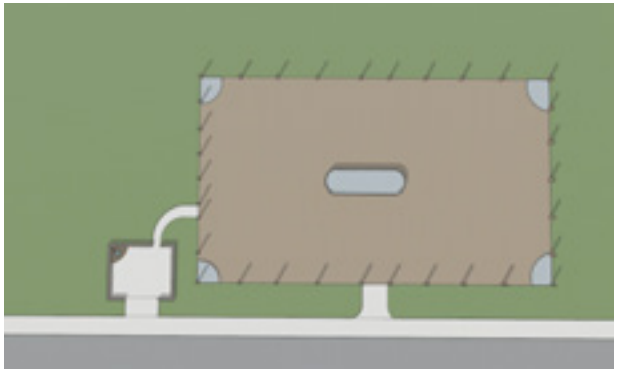
KEY ELEMENTS:

- CURVED WALKING PATH
- 30 CAR PARKING
- RAMP FROM PARKING LOT TO CONCRETE PAD
- WOUID LIKE TO OPEN IT FOR SMALL BUSINESSES, I.E FOOD TRUCK FRIDAY ETC.

PROPOSED DOG PARK:

- INCREASE DOG EXISTING DOG PARK
- PROVIDE A SAFE AND WELCOMING AREA
- IMPROVE TRASH AND WASTE CLEAN UP
- PROVIDE COMMUNAL SPACE AND WATER FOUNTAIN FOR DOGS





ROUNDABOUT REDESIGN

SAMANTHA LOPES

DESIGN PROMPT:

I am interested in finding a solution to improving the **safety of pedestrians**, and shifting the **transportation to multimodal**, in a city that is automobile **centralized**; in addition, in order to address the issues of **pollution**, and **stormwater runoff**; I will look into the possibilities of redesigning the rotary to implement **bioswales** and **native plantings**.

CONCERNS WITHIN SITE AREA:

Sea Level Rise

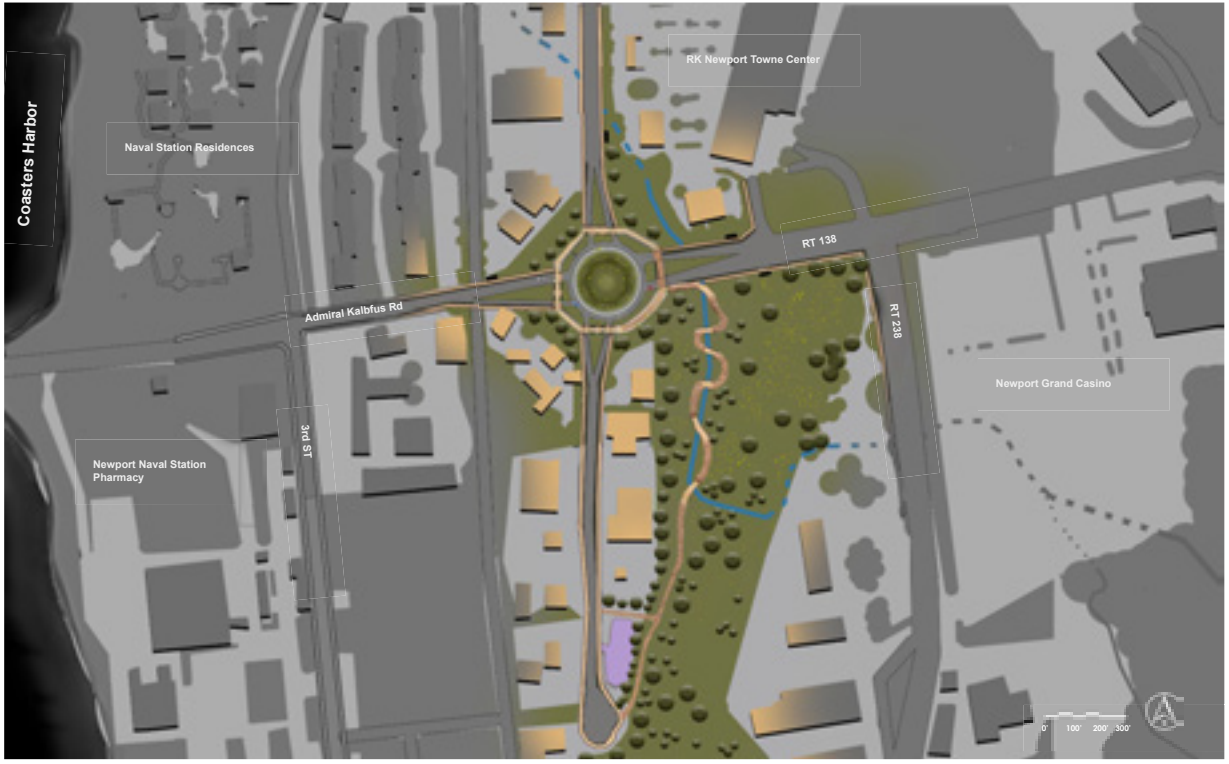
Flexible design to help **Mitigate** storm surge
Retreating from Sea Level Rise

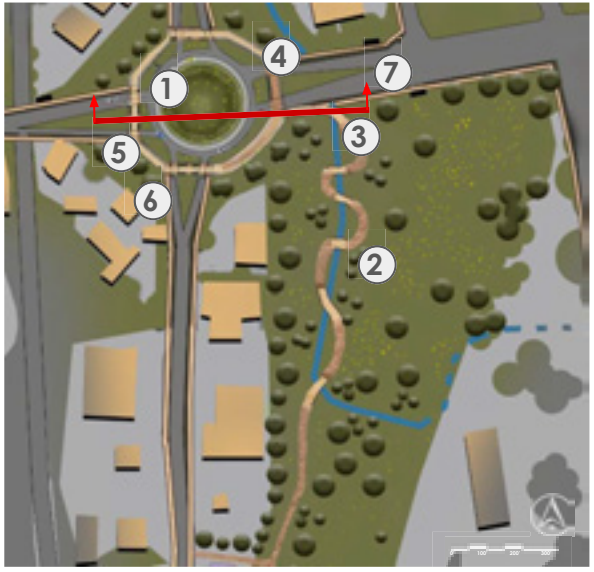
Heat Island Effect

Lack of **Vegetation**
Excess **impermeable** surfaces

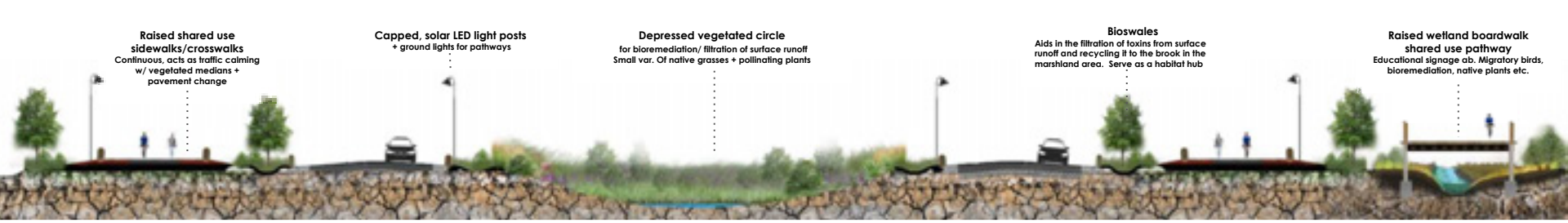
Poor Circulation

Unsafe for **Pedestrian** Traffic
Automobile centralized
Lack of **Connectivity**





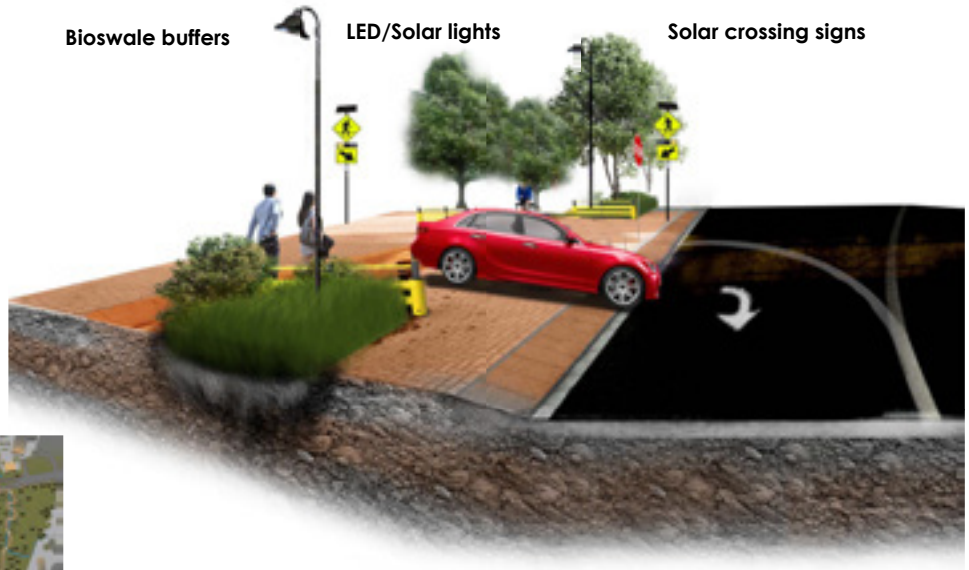
1. Raised Sidewalks
2. Raised pathway in wetland area
3. Vegetative Buffers
4. Shielded light posts
5. Low guardrail fences
6. Bioswales
7. Bus Shelters w/ Green roof

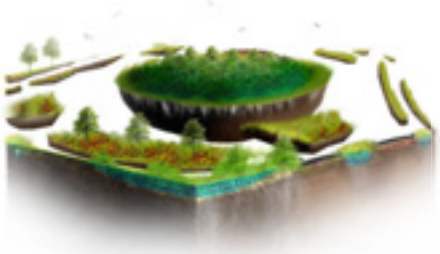


PEDESTRIAN SAFETY

The continuous sidewalks that will be implemented within the site are to foster a safe, shared space, for cyclists and pedestrians.

The sidewalks will be raised by 6" and will have stone brick edging +ramps. The pathway will be red colored concrete to delineate from the road. Solar yield signs will be situated before and after the crossing to alert automobiles of pedestrian traffic. Vegetated bioswales placed at the ends of the sidewalk will help provide traffic calming.

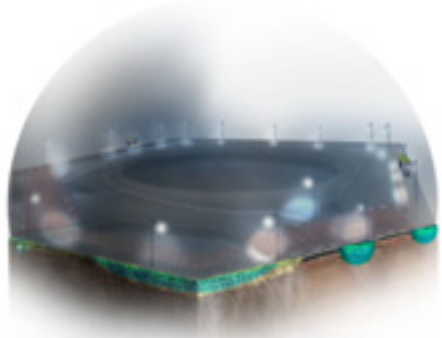




VEGETATION LAYER

INCREASED BY 80%

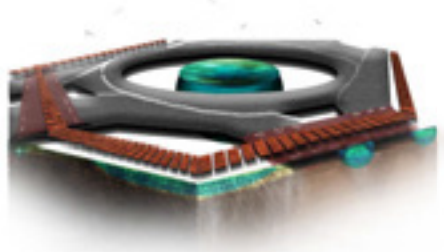
+BIOSWALES
+BUFFERS
+TREE CANOPY



LIGHTING LAYER

INCREASED BY 20%

+OMEGA SERIES LIGHTS
+LED / SOLAR
+SHIELDS



CIRCULATION LAYER

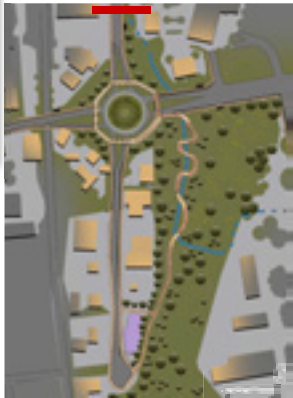
REDUCED BY 20%

+PERMEABLE PAVEMENT
+BRICK WALKWAYS
+RAISED CROSSWAYS

REDESIGNED BUS SHELTERS

Vegetated buffers + bioswales aid in traffic calming + fostering habitat for native species of insects, small animals + birds.

Increased safety + walkability at night w/ lighting, shelters are larger and feature seating w/ information board inside (facts about the ecology of Newport, FAQs etc..)



NEWPORTS SUSTAINABLE NORTH END

PHIL PURCELL

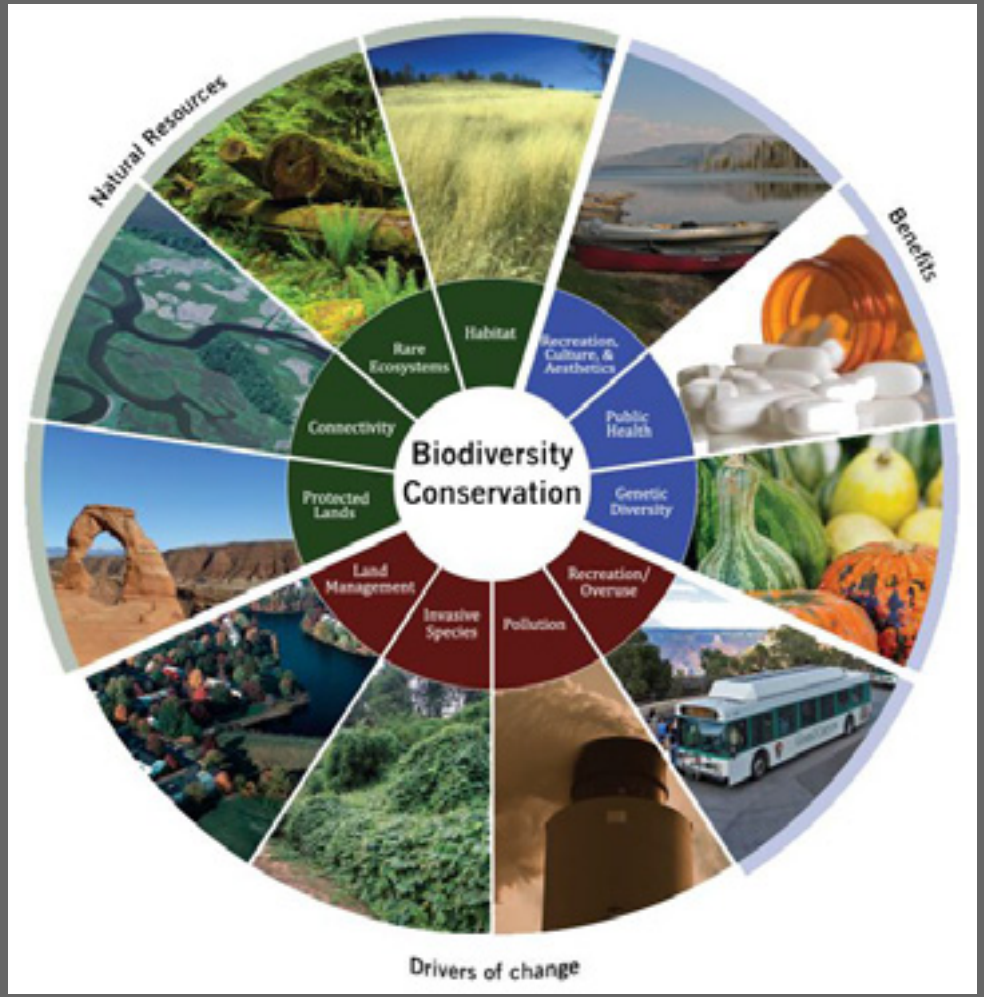
I am interested in finding a solution to redesign the **circulation of pedestrians**, as well as incorporate **bioswales** with **coastal plantings**; In addition to this, I will address the issues of **stormwater runoff**, and **filtration**; I will also label the RIDOT'S **Pell Bridge Plan** in making it more **sustainable** by adding **tree plantings** to improve the **biodiversity** in the **North End** and create a stronger connection within the North End.

WHY BIODIVERSITY?

Biodiversity: Is the biological variety and variability of life on Earth. It is a measure of variation at the genetic, species, and ecosystem level.

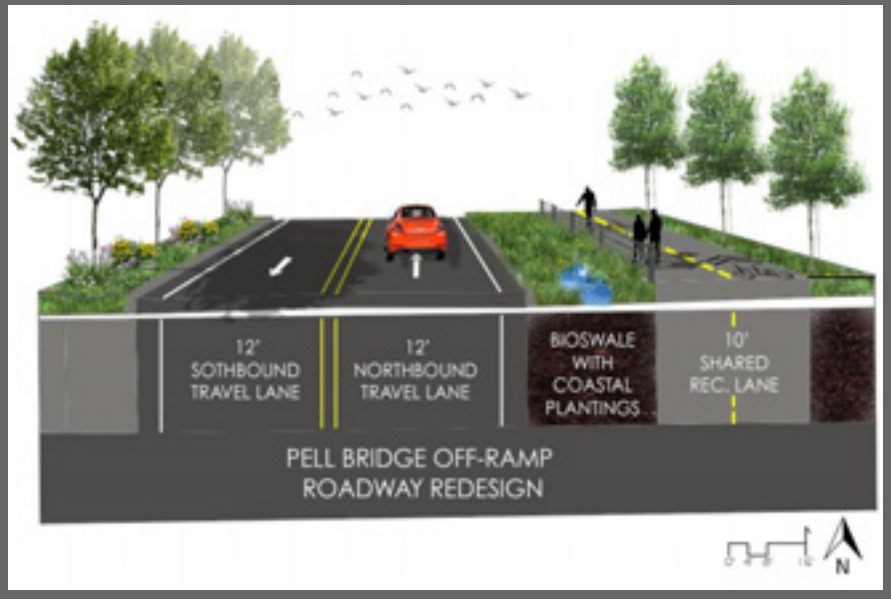
What are the positive effects of an increase in biodiversity?

- Greater stability in the ecosystem
- Public health
- Healthier crops
- Ecological support
- 80% of our food supply comes from 20 different types of plants
- Natural products are used daily (medicine)
- Provides habitat for 80% of the world's terrestrial biodiversity



MAIN FOCUS

REDESIGNED ROADWAY



Scope of work is redesigning the Pell Bridge off ramp roadways

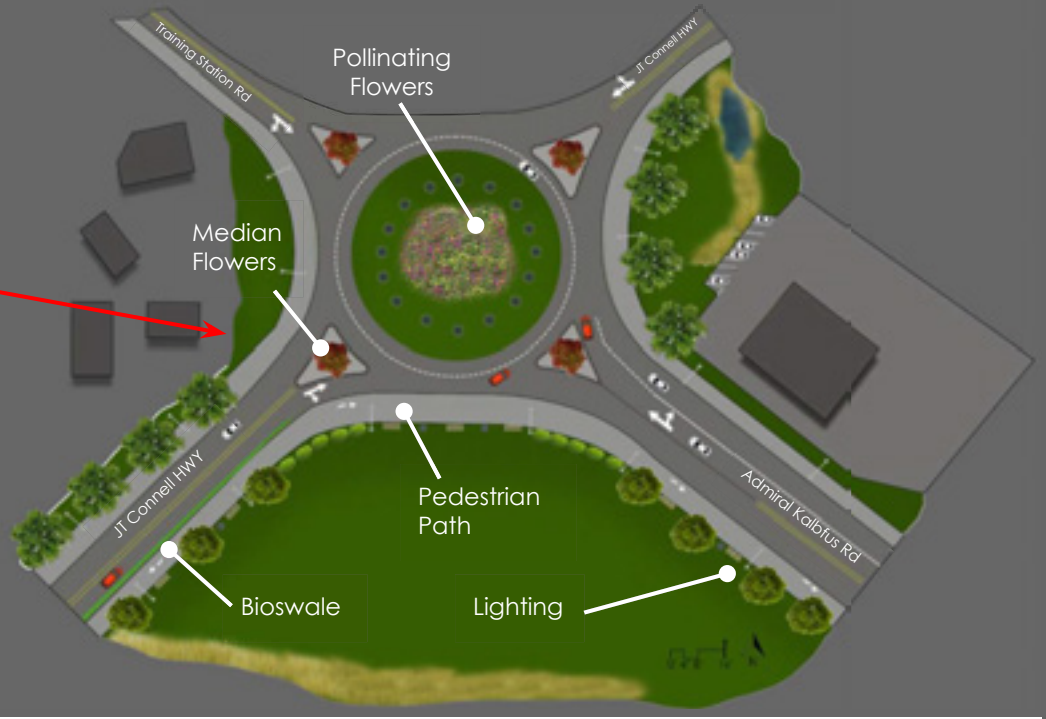
- Reduce the number of accidents
- Safer circulation while driving, biking or walking
- Connectivity
- Increased Biodiversity

Accomplishments through Redesign:

- Increased tree plantings
- Added bioswales with native plantings
  - Vegetation buffer
- Fencing added for safety for shared path

RIDOT ROADWAY DESIGN

ROUNDABOUT REDESIGN



The main goal is for a stronger connection with Farewell St. & Van Zandt Ave. The newly designed roundabout accomplishes biodiversity goals with pollinating plants as well as tree plantings like Red Maples, White Ash, and Oak trees. The new roundabout also has a reduced speed to reduce the limit of accidents by a 65% reduction. When thinking about sea level rise and rising water projections, the bioswales collect this water as well stormwater runoff collection through filtration. I want this area to also be educational for all users by adding plant and tree labels for pedestrians to learn about.

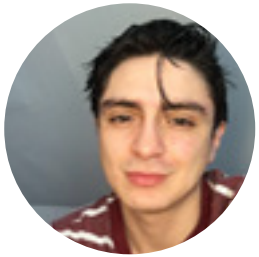
JT CONNELL HIGHWAY REDESIGN

Description

JT CONNELL HIGHWAY

SITE EXTENTS

JT CONNELL HIGHWAY



David Gomez

I'm Interested in creating examples and proposals at a variety of levels for landowners (private, commercial and local government) to implement to help mitigate the effects of sea level rise and stormwater runoff.

Sophie Haddock

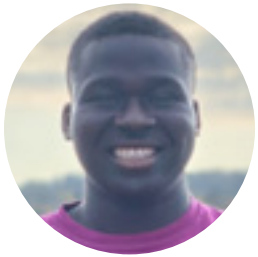
I'm interested in tackling the heat island effects and flooding issues of the parking lots along the JT Connell Highway, while increasing pedestrian circulation, fostering space for the community, and cleaning up the brook.

Nahirovys Matos

I'm interested in improving the strip development of JT Connell Highway by creating a better stormwater management and better circulation.

Brian Mcmahon

I'm interested in creating a village that will serve as an extension to well known downtown areas of Newport. Numerous attractions will draw tourists from around the country, and vital connections will ultimately unify the community

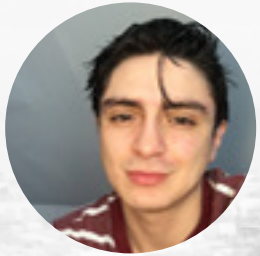


Kojo Nsiah

I'm interested in creating a space then encompasses a beautiful a greenway that will help combat the issue of sea level rise. This greenway will bring new life to the area for alll to enjoy

Jonathan Reyes

I'm interested in creating a new connection for the north end community with maximizing the open space through green infrastructure with equity and resiliency in mind



DAVID GOMEZ

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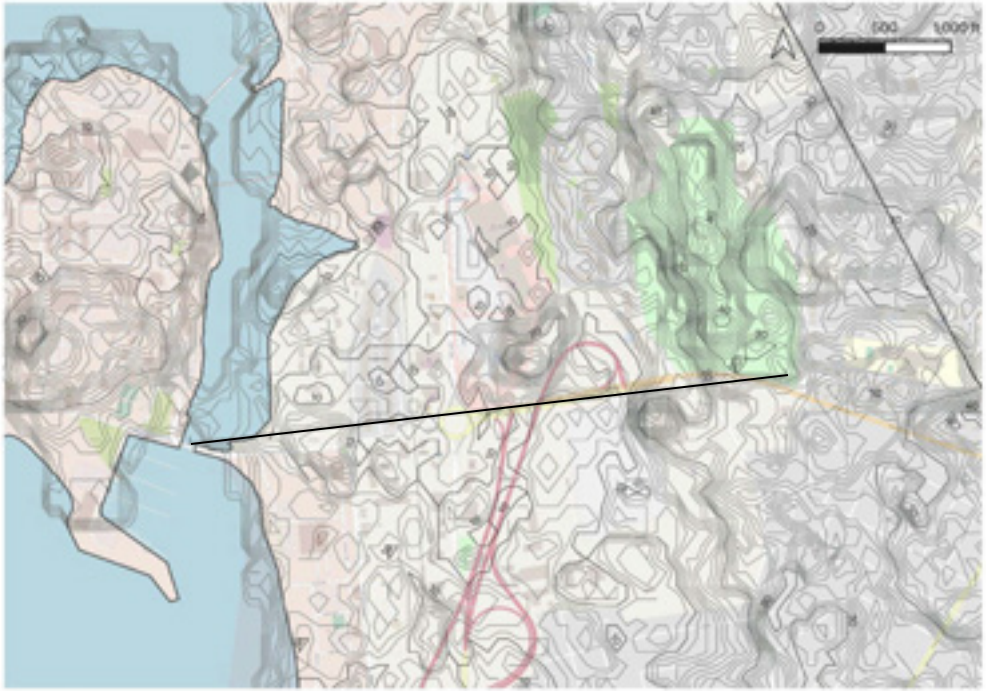
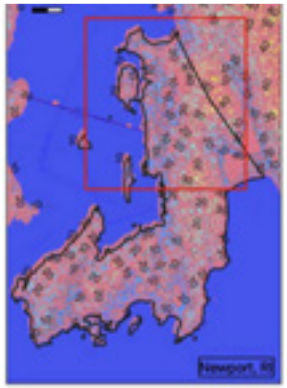
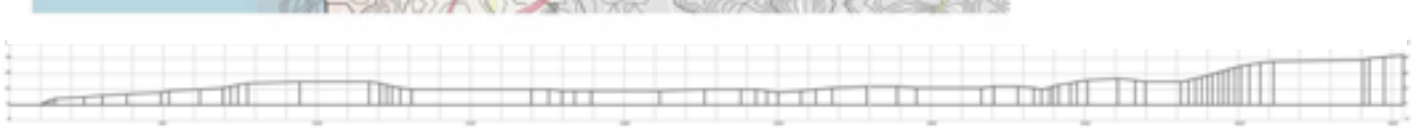


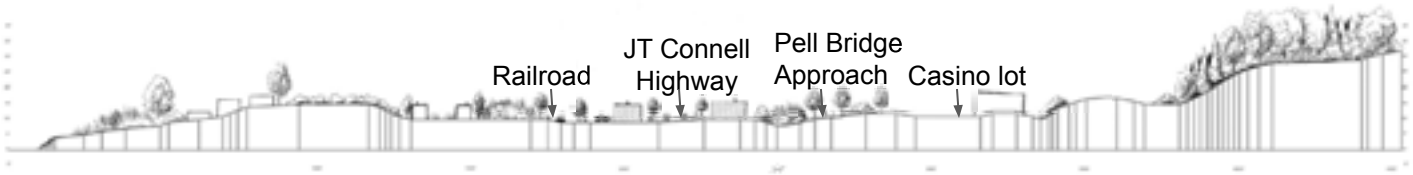


The vertical exaggeration used in the cut section below is used to help visualize the elevation changes in the north end of Newport.



5x vertical exaggeration

Horizontal Scale; 1"=500'
Vertical scale: .1"=10'(5x)



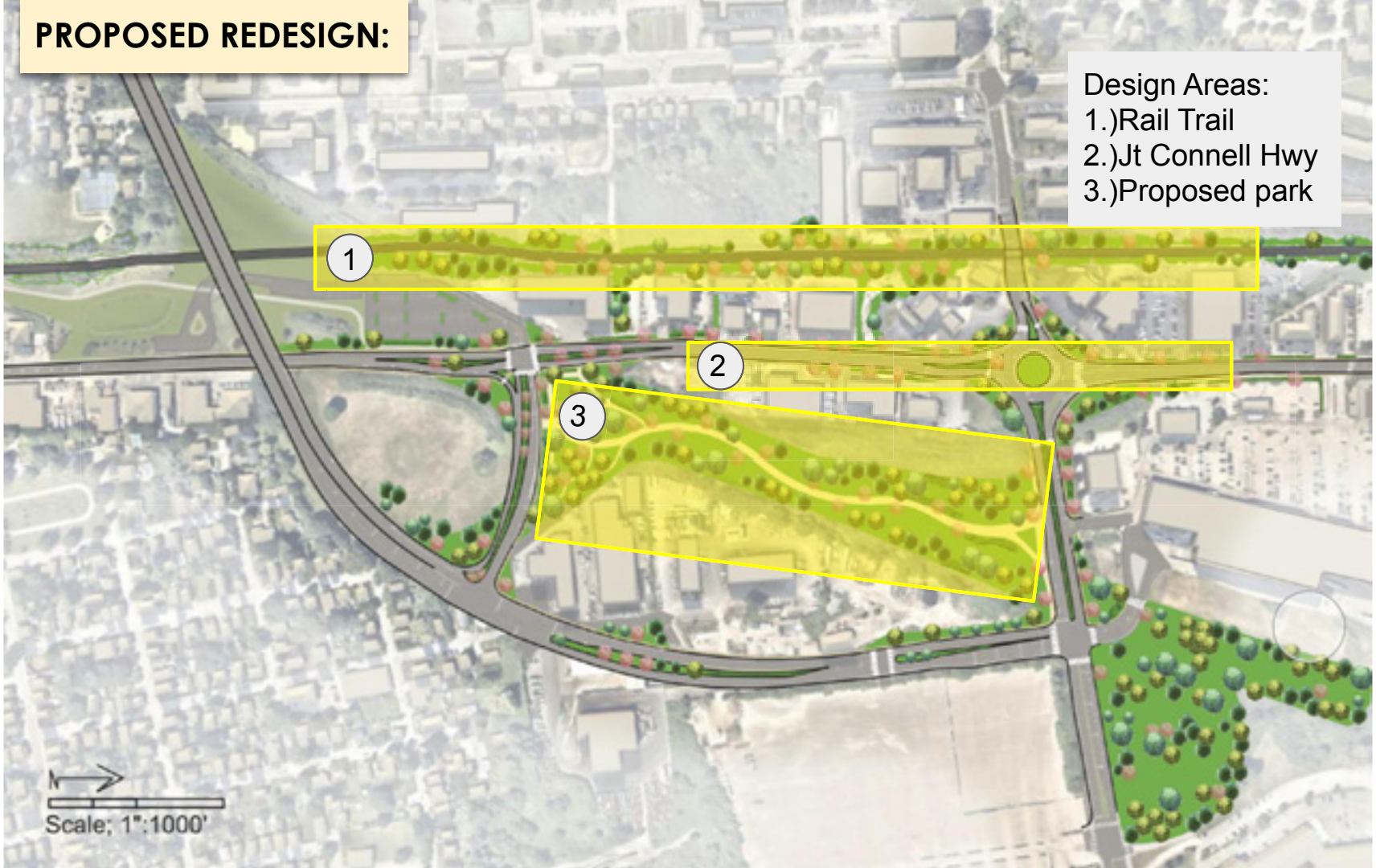
10x vertical exaggeration

Horizontal Scale; 1"=500'
Vertical scale: .2"=10'(10x)

Problems to Address:

1. Heat island effect
   - -Excess pavement
   - -Lack of canopy cover
2. Mitigation of Stormwater runoff
   - -Lack of permeable surfaces
3. Connectivity
   - - Poor walkability
   - -Very little public open space
   - -Lack of a continuous bike route

PROPOSED REDESIGN:



EXISTING CONDITIONS:

PROPOSED REDESIGN:

Rail Trail

Rail Trail

JT Connell Highway

Aerial of JT Connell Hwy

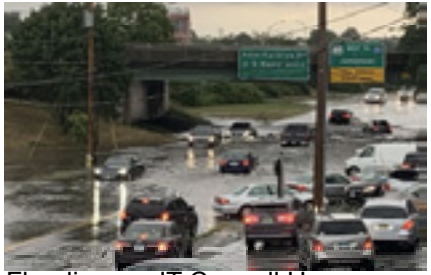
Existing Road Conditions

ISSUES:

-The JT Connell highway is a commercial strip mainly covered with pavement.

-Area lacks street trees, and the existing vegetation does a poor job of capturing runoff which leads to flooding, especially around the rotary

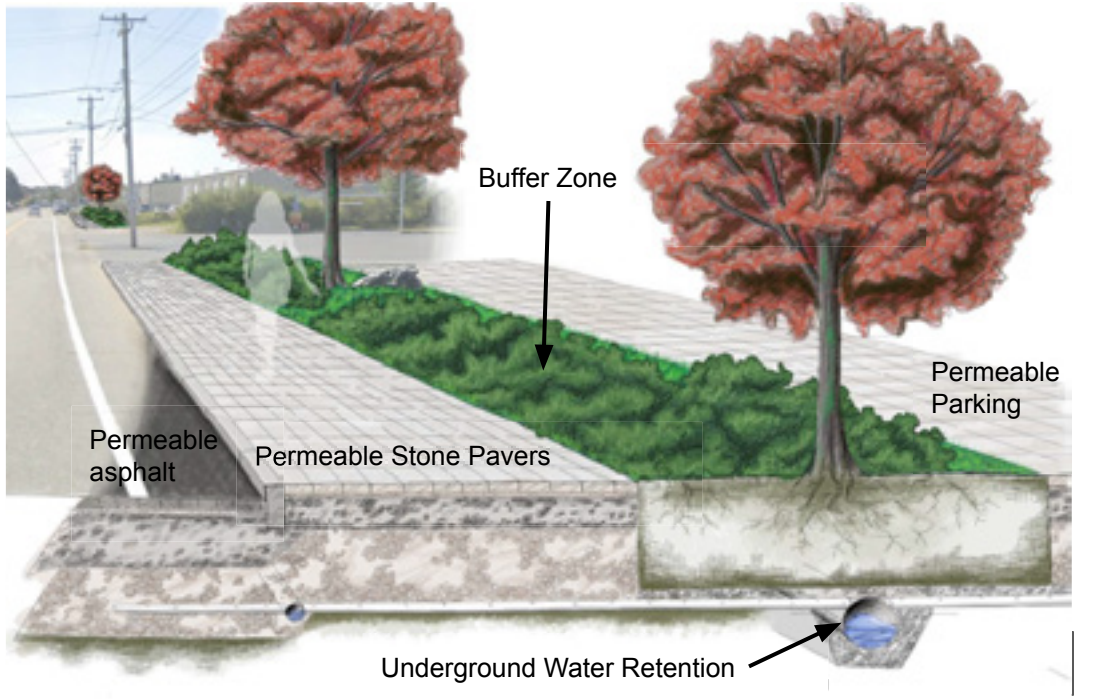
-The strip is unsafe for pedestrian and bicycle traffic and lacks crosswalks



Flooding on JT Connell Hwy

JT Connell Highway

Proposed Redesign



-The addition of **raised crosswalks** and **street trees** help slow vehicle traffic (top)

-**Permeable paving** and densely planted **bioswales in** buffer zones between parking lots allow water to be absorbed rather than pool up in low lying areas (bottom right)

Linear Park

Existing Highway Structure

ISSUES

-The current layout of the Pell Bridge approach creates a **physical barrier** separating the north end, preventing non vehicular traffic from venturing to areas south of the highway.

-The **lack of a connection t**o the rest of newport makes people in the north end reluctant to travel past the bridge.

-Although there are large areas of green space around the highway, most are lawn areas, with **low permeability**

Highway structure barrier

Linear Park

Proposed Redesign

Park Section

The realignment of the Pell bridge opens up **opportunities for new green space** in the north end of Newport. This proposed linear park, within view of all visitors taking the Pell bridge into Newport, takes advantage of the newly available land, providing **safer connection** between Kalbfus Road and Jt Connell Highway, leading towards downtown Newport.

Proposed Park Redesign

Linear Park

Proposed Redesign Mosaic

The realignment of the Pell bridge opens up **opportunities for new green space** in the north end of Newport. This proposed linear park, within view of all visitors taking the Pell bridge into Newport, takes advantage of the newly available land, providing **safer connection** between Kalbfus Road and Jt Connell Highway, leading towards downtown Newport.

Park Section

Proposed Park Redesign

SOPHIE HADDOCK

I am interested in **tackling the heat island effects and flooding issues of the parking lots along the JT Connell Highway, while increasing pedestrian circulation, fostering space for the community, and cleaning up the brook.**

PLAN

1. Water retaining green spaces scattered throughout parking lot

2. Green protective barrier between sidewalk and street

3. Open space with trail for public use

4. Buildings and parking rearranged for cohesive use

5. Outdoor seating for dining while enjoying the natural environment

6. The brook will be rejuvenated as habitat and ecosystem

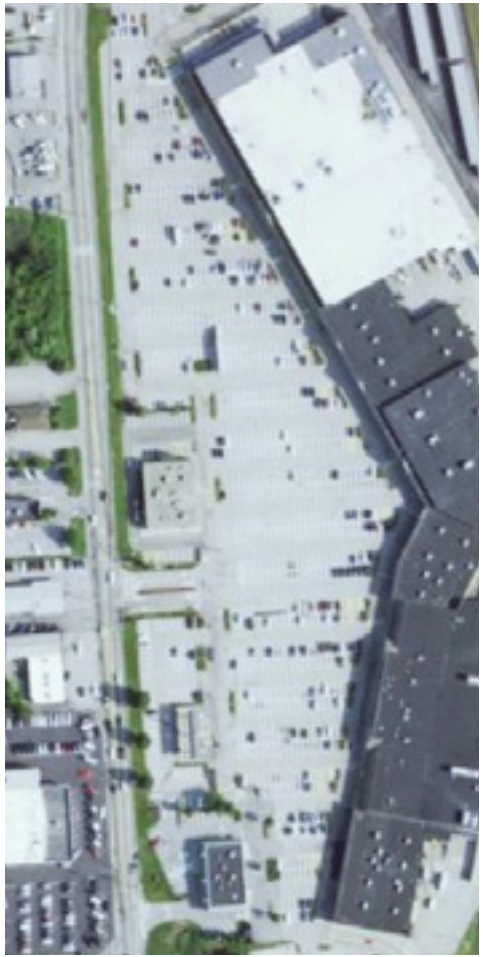
TARGET ISSUES

Heat Islands | Flooding | Pedestrian Circulation | Community Space | Brook

HEAT ISLANDS

Large parking lots need vegetation to break up the heat-absorbent lot.

Expanding the green space increases shade and breaks up the heat island effect.



SOPHIE HADDOCK

FLOODING

The new green spaces in the parking lot transform 109 spaces to water retention areas. The stormwater that hits the parking lot will drain to these areas to be contained, slowing down the flood risk in the area.

Using permeable pavers will also support continual use of the site.

THESE RETENTION SPACES CAN HOLD

66,046

GALLONS

WHILE ONLY REPLACING

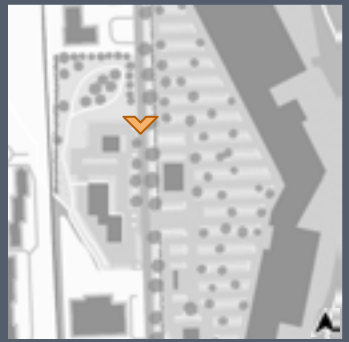
14%

OF THE PARKING SPACES

SOPHIE HADDOCK

FLOODING

Existing conditions

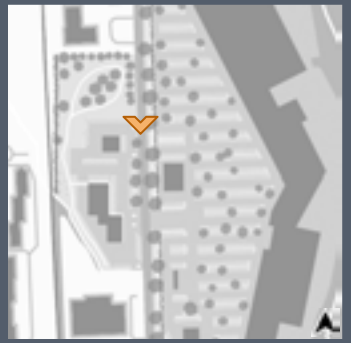


SOPHIE HADDOCK

FLOODING

SOPHIE HADDOCK

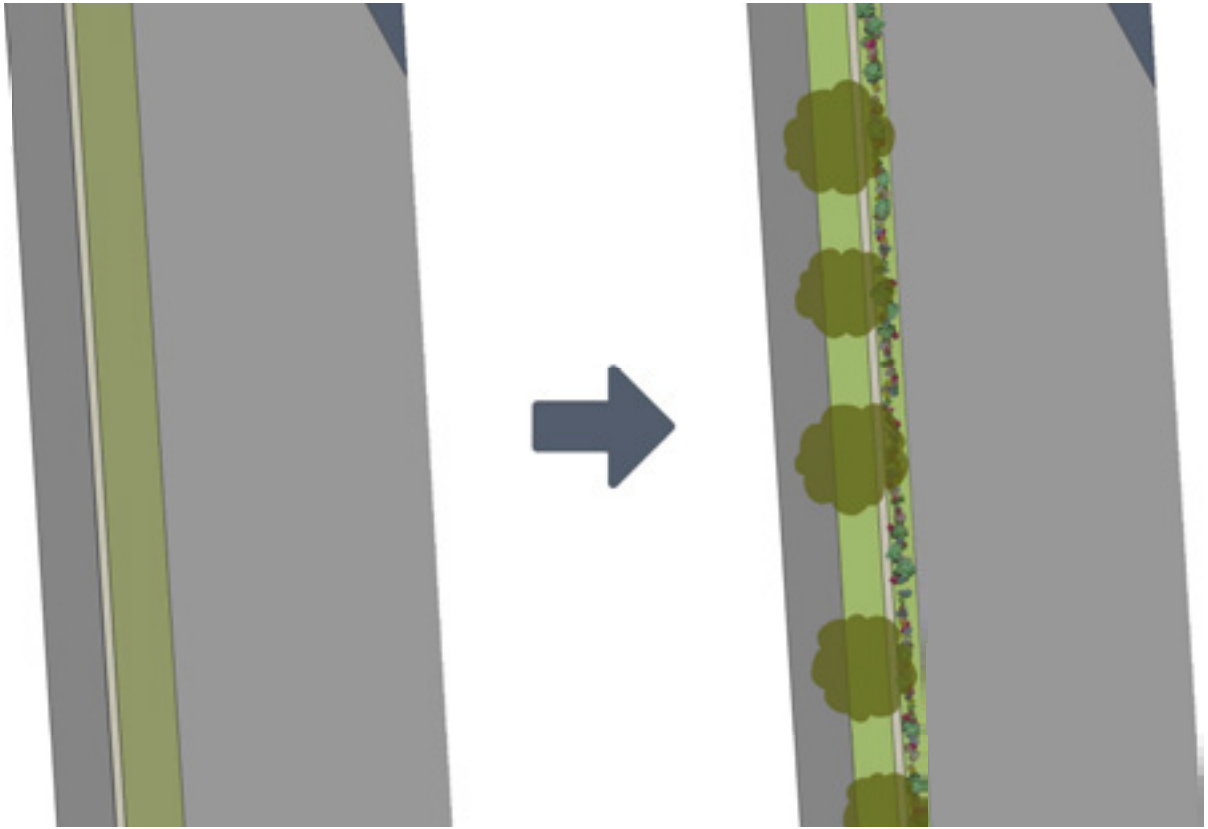
Bioswales along the west side of the road



SOPHIE HADDOCK

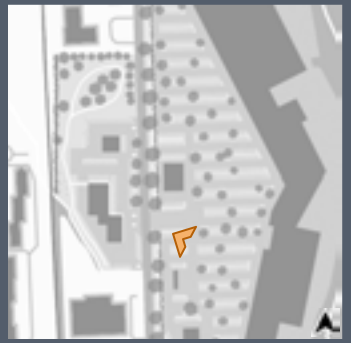
PEDESTRIAN CIRCULATION

The sidewalk was originally flush against the busy street, making pedestrian accessibility dangerous and unappealing. By positioning green space between the sidewalk and the road, pedestrians are safer. Trees, flowers, and bushes serve as a protective barrier, and create an appealing circulation route.



PEDESTRIAN CIRCULATION

The traffic and pedestrian systems have both been upgraded.



SOPHIE HADDOCK

COMMUNITY SPACE

On the West side of JT Connell Highway, there is a lot of potential to utilize the outdoor space and provide a place for community members to enjoy.

SOPHIE HADDOCK

COMMUNITY SPACE

Outdoor dining by the brook, a space for community members to socialize and enjoy time together

SOPHIE HADDOCK

BROOK

Thick brush around the brook protects the ecosystem from interference yet is still available to be enjoyed visually.

SOPHIE HADDOCK

BROOK

The brook gets cleaned up, and wildlife return to the thriving ecosystem

THANK YOU

SOPHIE HADDOCK

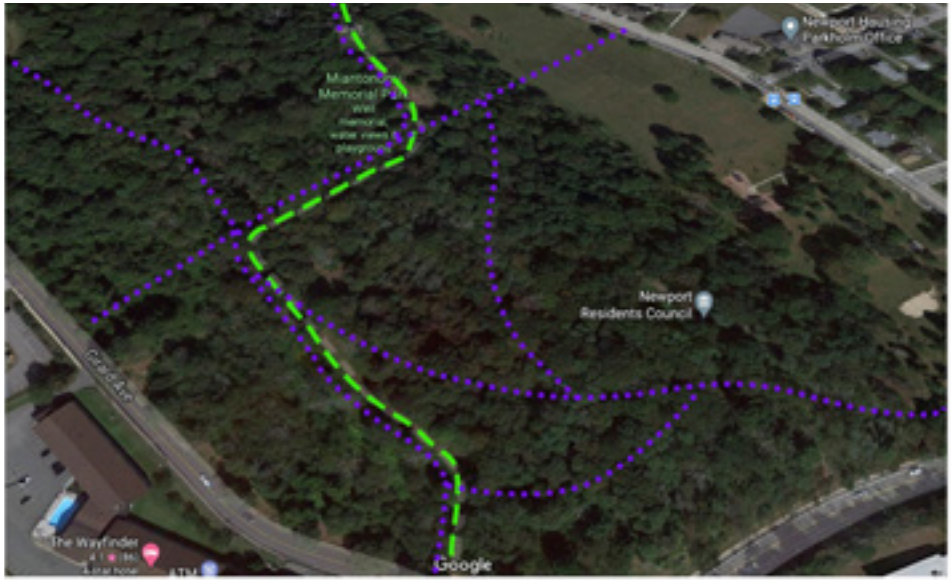
Nahirovys Matos

I'm interested in **improving** the strip development of JT Connell Highway by creating a better **stormwater management** and better **circulation**.

Bike Path


Navy Exchange Gas Station
Public Transportation Authority
Newport Propane
Head Start Early Learning Center
Newport Child Development & Learning
Florence Gray Center
Arnaud Insurance

Solar Bike Path Lighting System Within Miantonomi Memorial Park



Exisiting Trail

New Exisiting Trail

Rotary

BEFORE

AFTER

PLANTING LIST:

-American hornbeam

-Common buttonbush

-Maritime marsh-elder

-Cardinal flower

-Coastal sweet pepperbush

-Seaside goldenrod

BRIAN MCMAHON

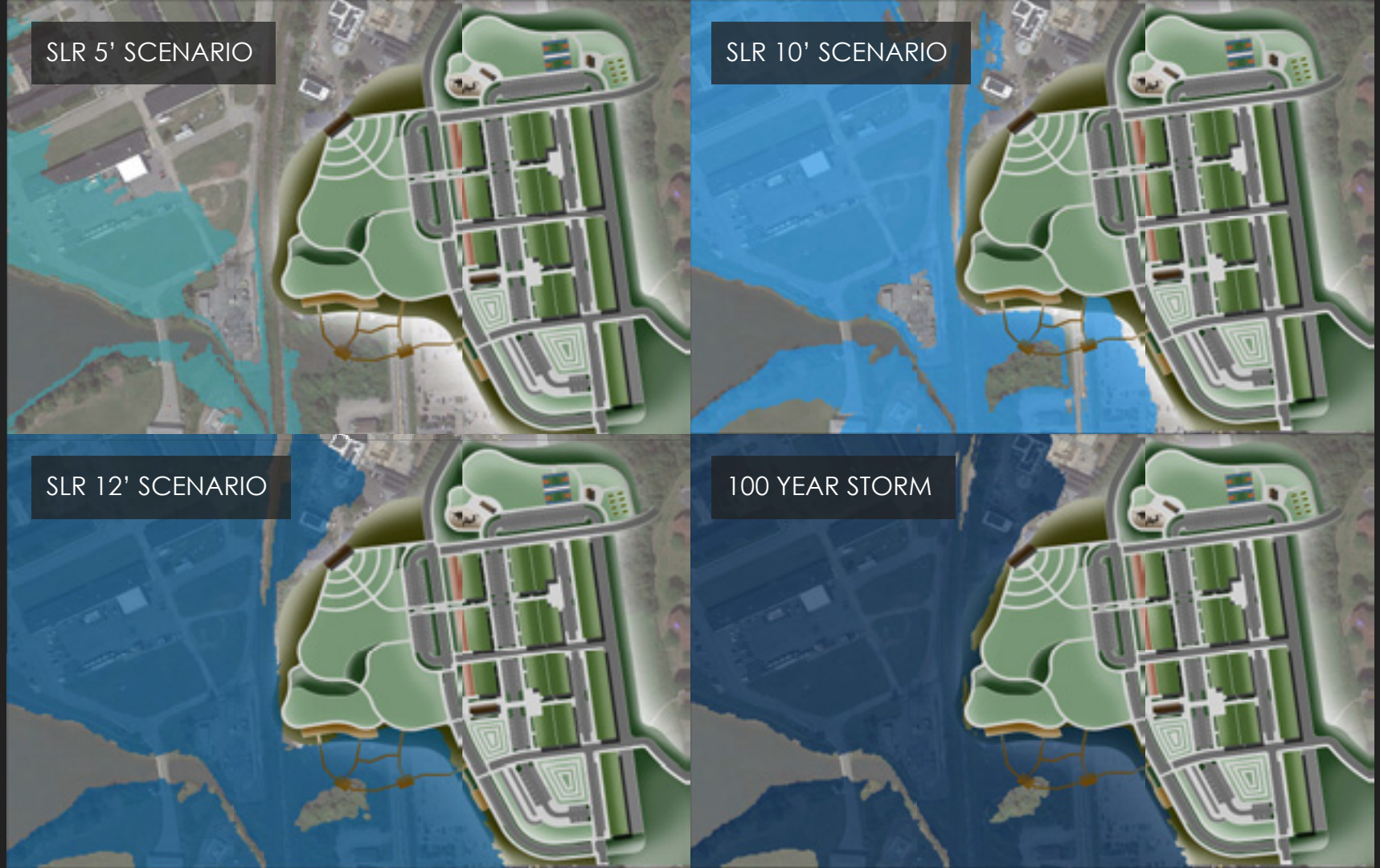
JT CONNELL HIGHWAY

I'm interested in creating an **extension** to the well-known downtown areas of Newport, while addressing the issues of **sea level rise**, **impervious surfaces,** and lack of community **connections**.

MASTER PLAN

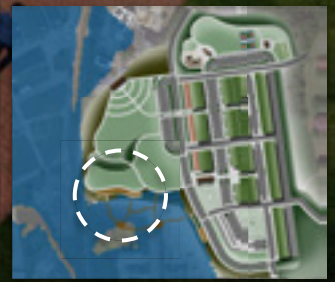

EXISTING


PROPOSED
COMMUNITY PARK
COASTAL PARK
VILLAGE
RAISED BOARDWALK
BIOSWALES
ADAPTIVE SHORELINE


SLR 5’ SCENARIO
SLR 10’ SCENARIO
SLR 12’ SCENARIO
100 YEAR STORM

ADAPTIVE SHORELINE

MARSH BOARDWALK

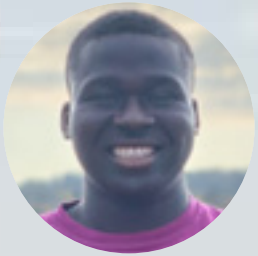


UPPER COASTAL PARK

ENTERTAINMENT STAGE

COMMUNITY GARDEN & MULTI-USE COURTS

VILLAGE PLAZA



KOJO NSIAH

I'm interested in creating a space that encompasses a beautiful a greenway that will help combat the issue of sea level rise. This greenway will bring new life to the area to revitalize the North End

PROBLEM

5 FEET

5 YEARS CAUSES INUNDATION IN THE OUTSKIRTS BUILDINGS AND AREAS

10 FEET

AFTER 10 FEET OF SEA LEVEL RISE THE AREA BECAUSE VIRTUALLY UNLIVABLE

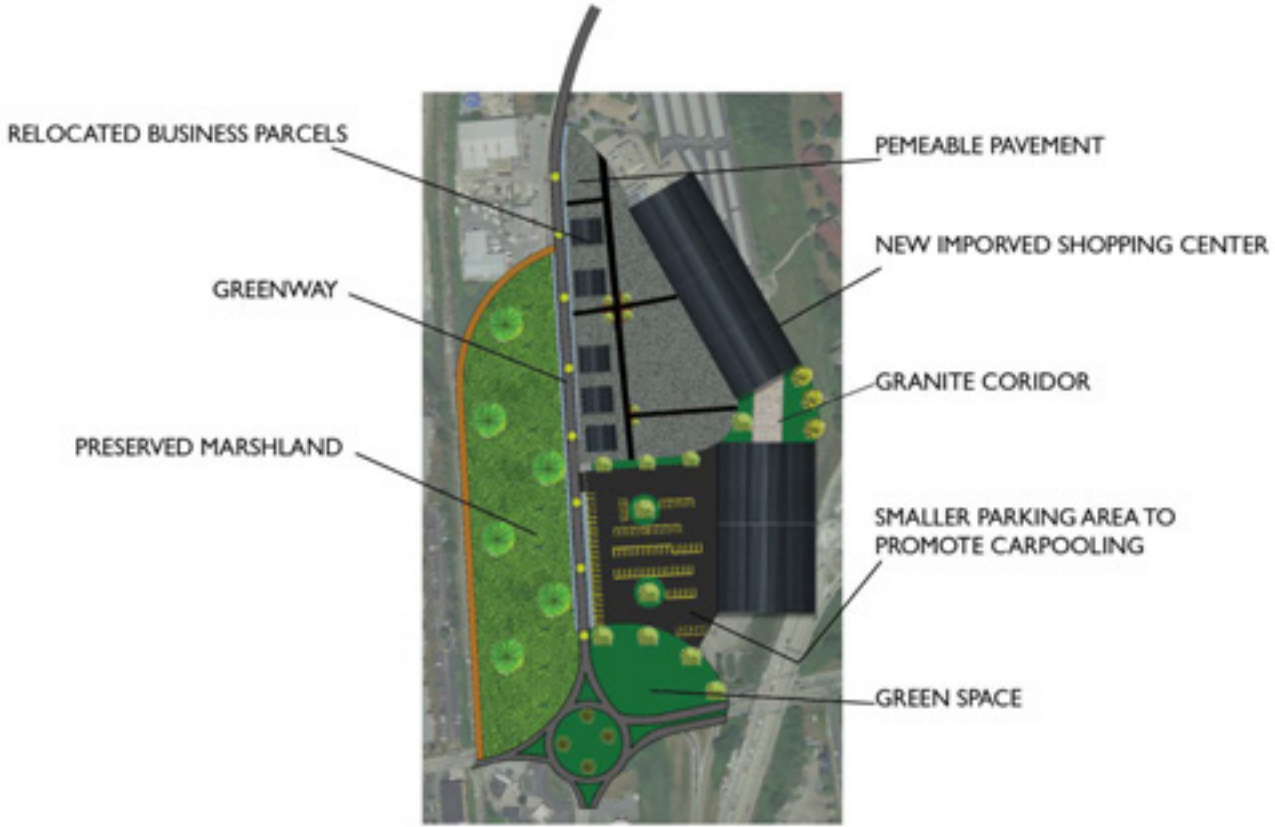
100 YEAR

100 YEAR EVENT WILL WIPE OUT THE WHOLE AREA AND MAKE IMPOSSIBLE TO REBUILD

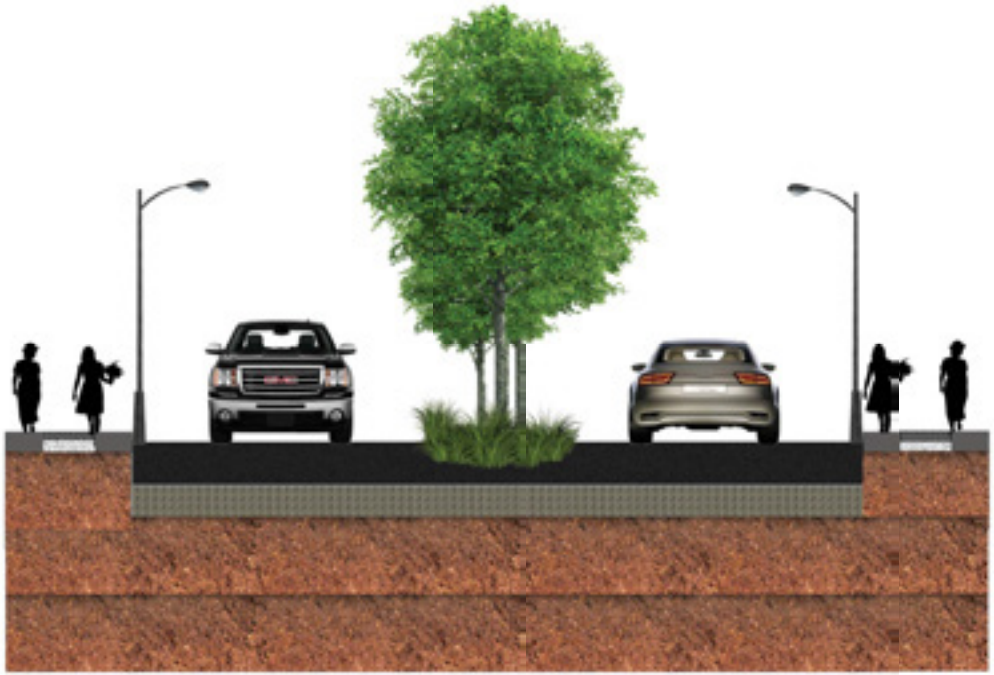
REVITALIZATION

Accomplishments

- Site as a whole has been raised up
  75 ft to combat sea level rise
- Buildings located to the west will be relocated to the multi use shopping center
- Semi Permeable Pavement, placed in all the parking lots
- Increase drainage system to combat runoff
- Greenway in the center of the road to beautify the roadway

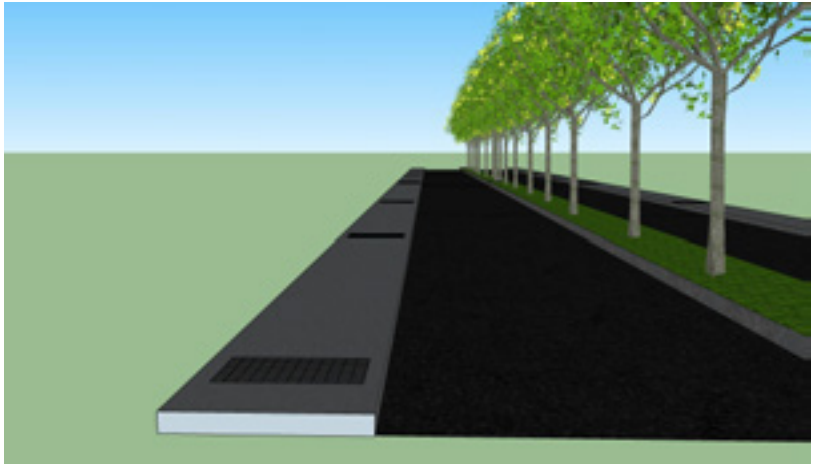


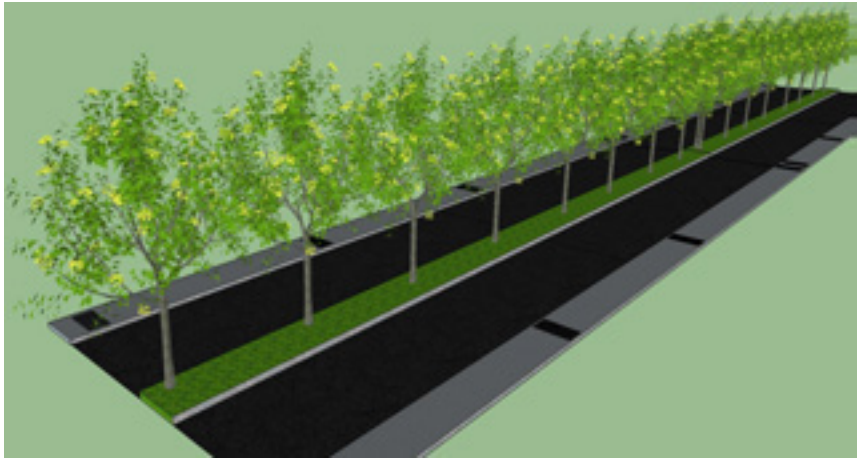
CROSS SECTION OF GREENWAY



- SHOWS FREE MOVEMENT
- PROMOTES WALKING
- PERMEABLE PAVEMENT TO ALLOW WATER TO LEACH INTO THE GROUND
- GREENWAY , BRINGS TREES TO AREAS THAT HAVE NEVER BEEN.

GREENWAY





Inclusive + Resilient Design

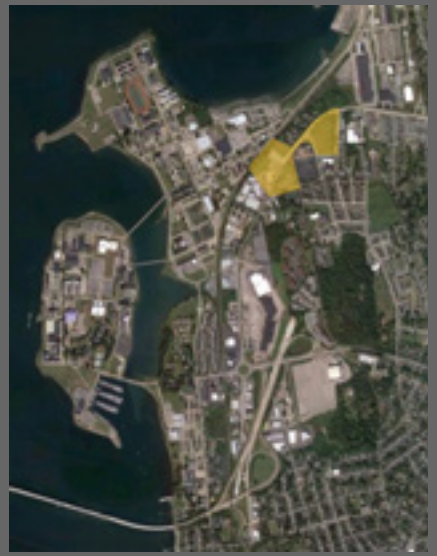
I'm interested in creating a new **connection** for the north end community with maximizing the open space through green infrastructure with **equity** and **resiliency** in mind

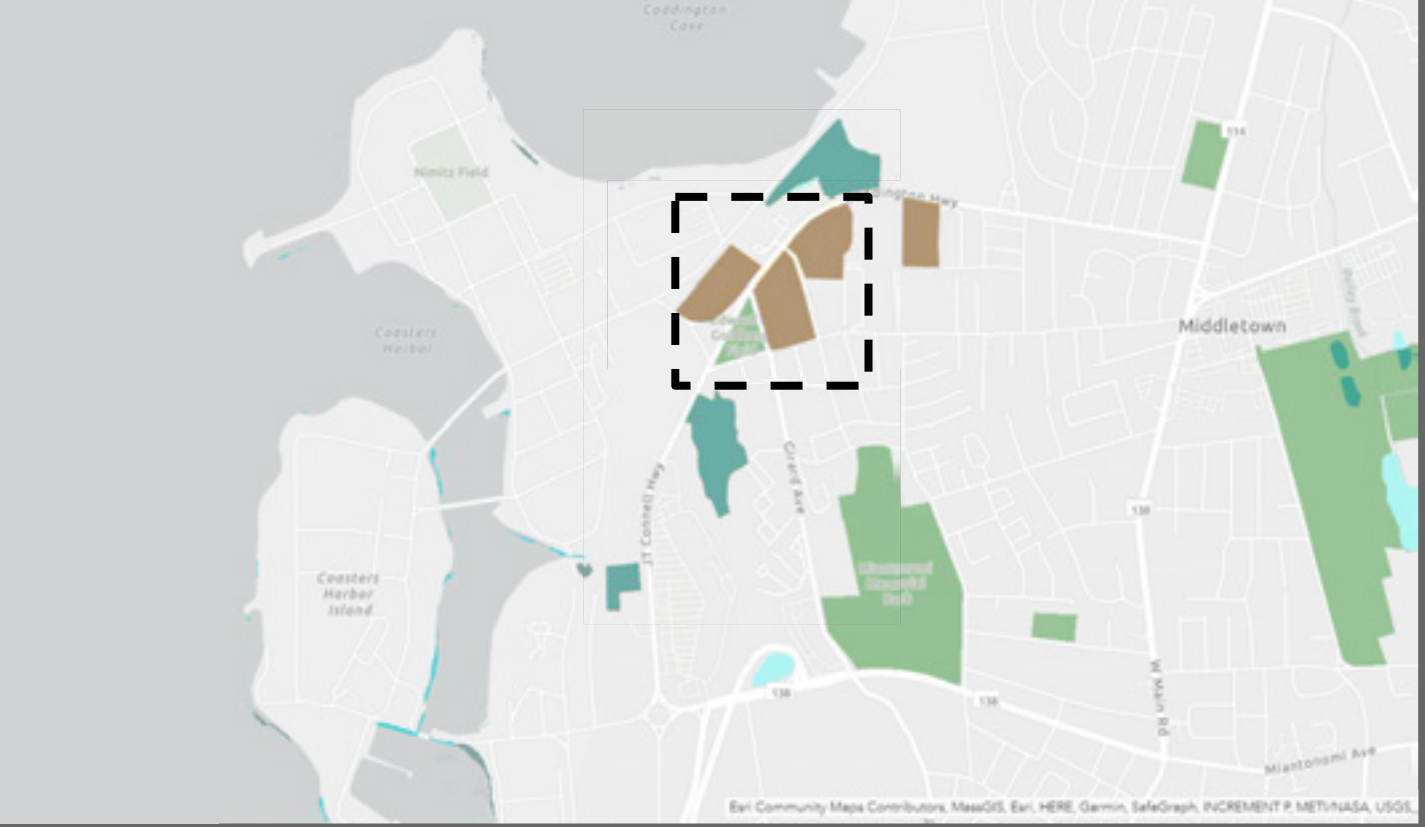
Jonathan Reyes | Spring 2021 | Professor Richard Sheridan, ASLA

Focus Area

Location: JT Connell and Coddington Highway Merge

Scope: Green Infrastructure, Equity, Stormwater Management, Circulation





ArcGIS

Vacant Land

Wetlands

Protected Open Space

Protected Open Spaces + Wetland Zones

Protected Open Space from the city

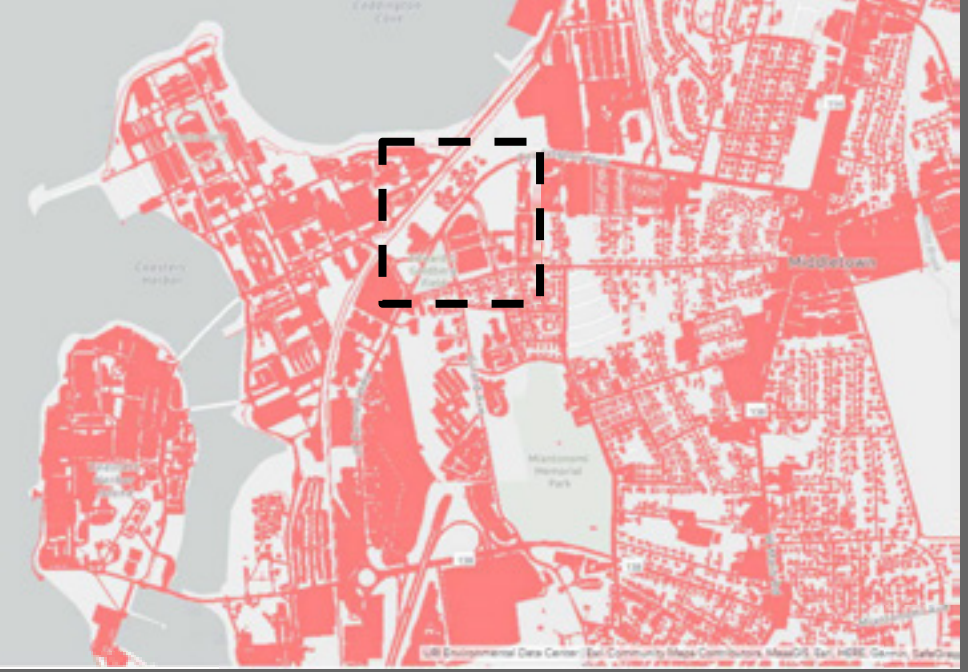
Wetland areas in the city

Baseball Fields

22.3 acres of vacant land

14.4 acres of forested wetlands

Analysis

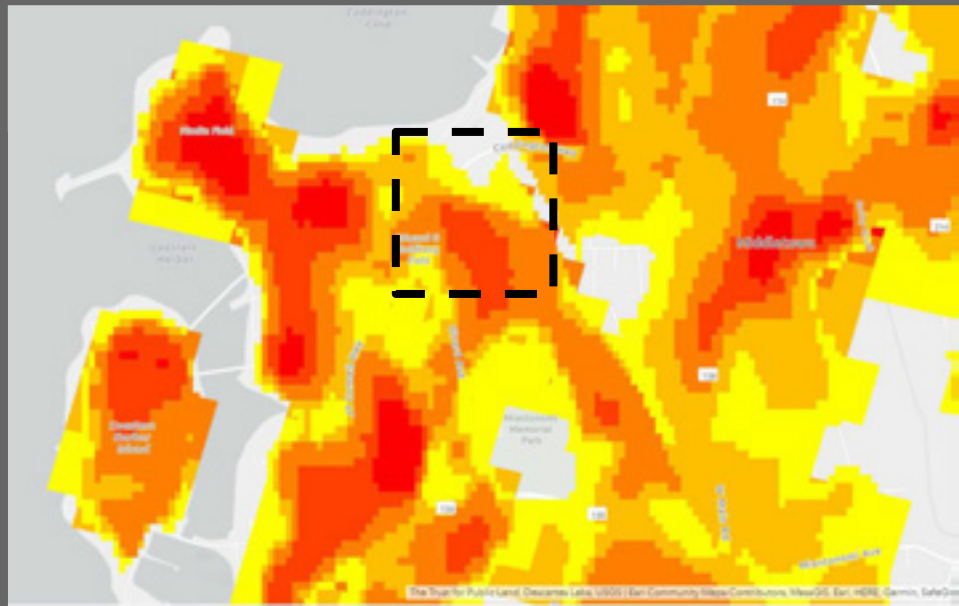


ArcGIS

Impervious Surfaces

- Increase flooding and infrastructure damage
- Impact public health and welfare
- Impact our natural resources

Impervious Surfaces



Urban Heat Island

Base Map

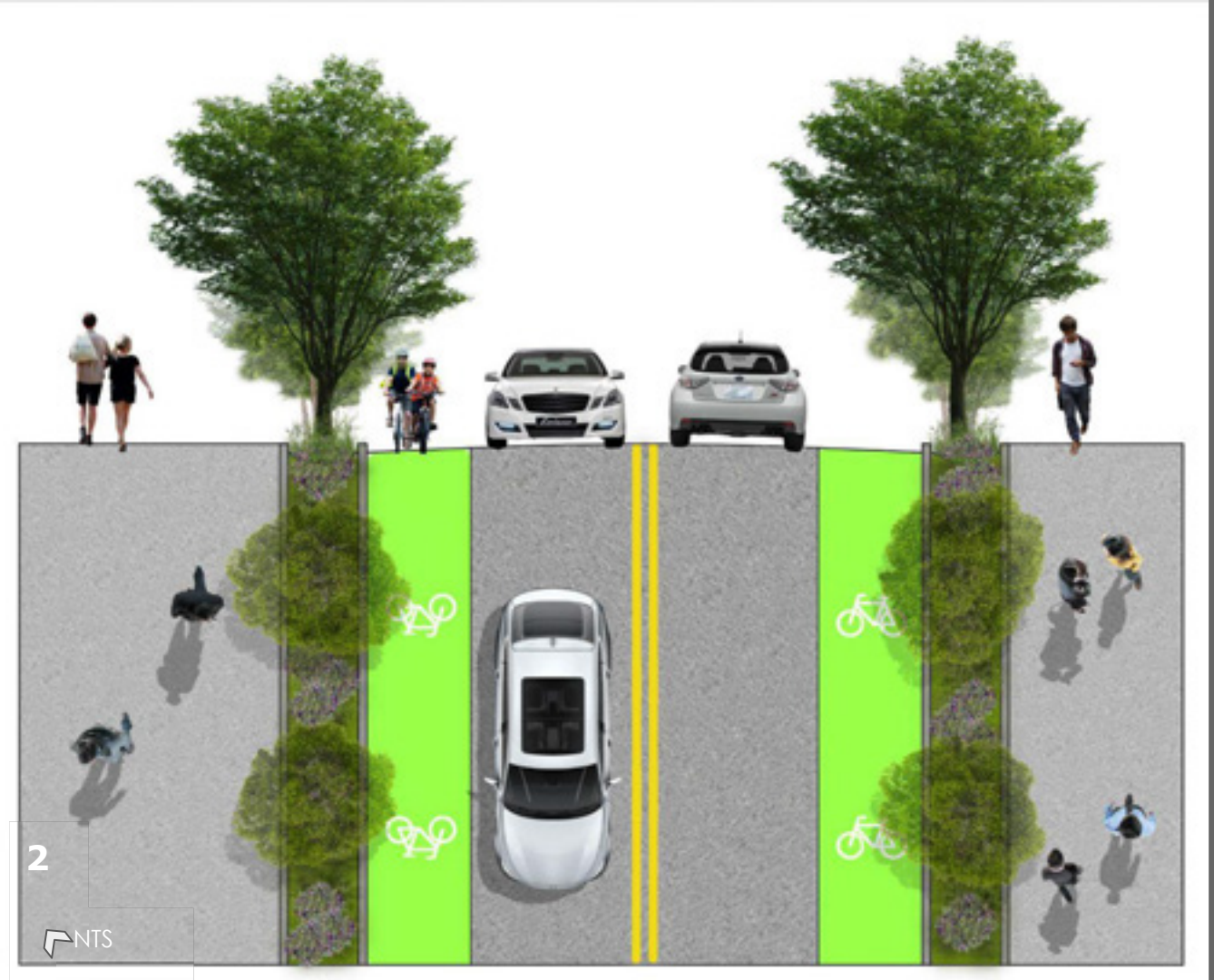

Stormwater Management
Reduced urban heat island
Inclusive space
Improved community connection with the natural environment
Increased pervious surfaces
1
2
3
Improved Circulation
Current impervious surface area
1,520 square feet
Proposed impervious surface area
774 square feet
51%
NTS

Increased infiltration

Community gathering space

Removed all impervious surfaces

1



Context-sensitive design

Individual bike lanes

Traffic calming alternatives

Stormwater management

Rain Gardens to include a mixture of vegetation consisting of:

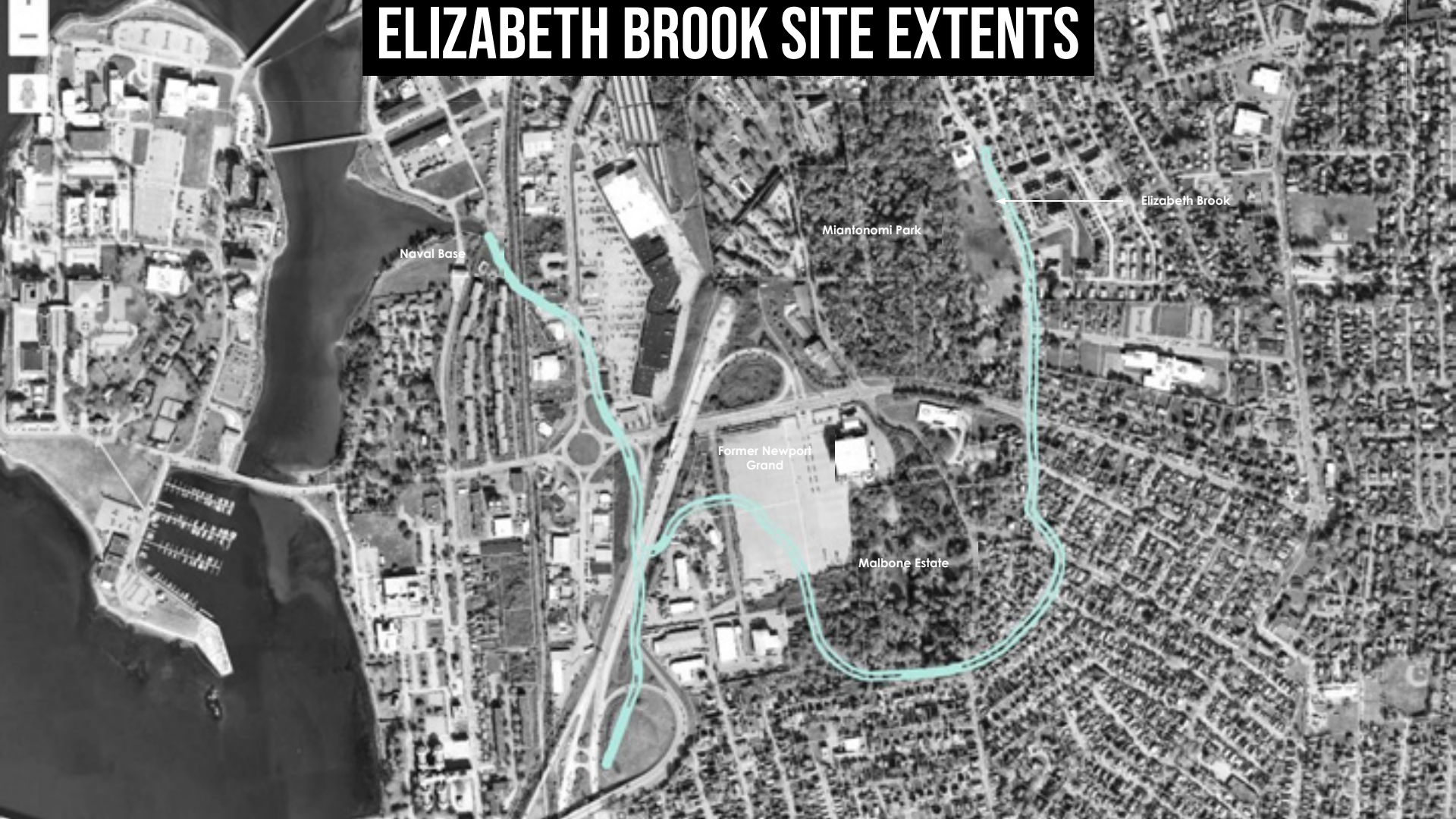
River Birch
Pagoda Dogwood
American Hophornbeam
Chokecherry
Blue Flag Iris
Butterfly Milkweed
Goldenrod
New England Aster
Switchgrass

Deepen connection with nature

Stormwater retention management


ELIZABETH BROOK
DAYLIGHTING

ELIZABETH BROOK SITE EXTENTS



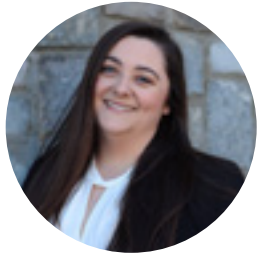
ELIZABETH BROOK

Lindsey Corse

I'm interested in how daylighting the stream, improving its health, and allowing for physical public access can be achieved without encroaching on private property and accelerating gentrification.

James Hinson

I'm interested in transforming the Elizabeth Brook to create an effective water management system and a water-centric system of parks throughout the North End.



Miranda Hulme

I'm interested in daylighting the Elizabeth brook adding in vegetation barriers to clear the pollutants from the water runoff while also reducing the impacts of flooding and sea level rise in the public spaces creating a linear park allowing for safe use by pedestrians and cyclists.

Kevin Kloos

I'm interested in the collection and treatment of excess runoff for future uses, such as irrigation. The use of embankments and bioswales will also mitigate inundation in the North End.

Sarah McGraw

I'm interested in revitalizing Elizabeth Brook to protect the environment against inundation while creating green open spaces for the residents of North End Newport. This will be accomplished by implementing green infrastructure, sustainable practices, and community connection.

Maggie Spano

I'm interested in daylighting the Elizabeth Brook while also implementing stormwater infrastructure, reconnecting, and educating the North End residents with the coast.

Lindsey Corse I Elizabeth Brook

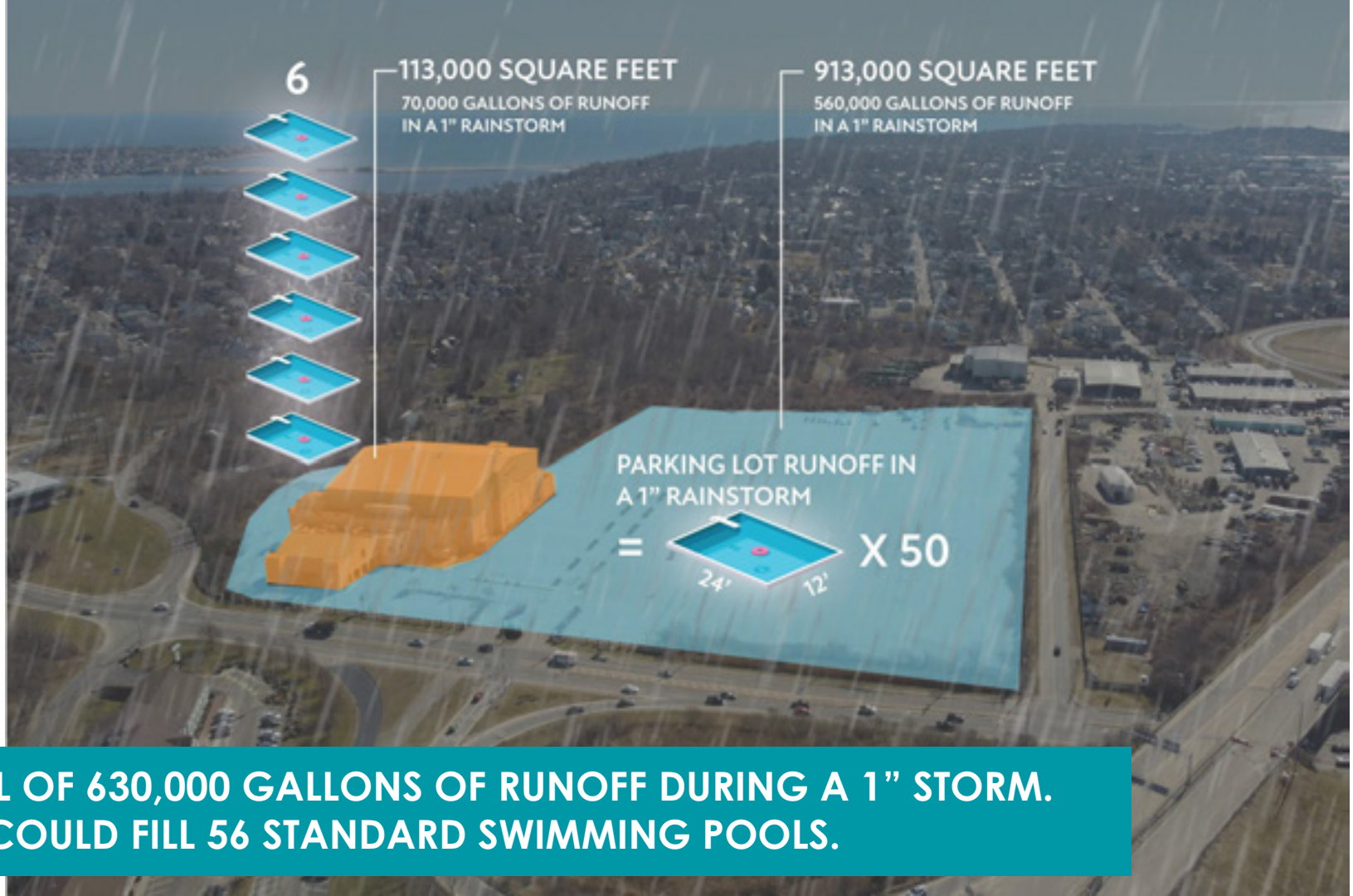
I’m interested in how **daylighting** the brook, improving its **health**, and allowing for physical public **access** can be achieved without encroaching on private property and accelerating **gentrification**.

PUBLIC ACCESS/CONNECTIONS TO GREENWAYS AND ELIZABETH BROOK

- ELIZABETH BROOK
- TO BE DAYLIGHTED
- SHARED ROAD/BIKE LANE
- SUITABLE ROAD FOR A BIKE PATH
- PROPOSED RAIL TRAIL
- COMMUNITY CENTER & GARDEN
- SCHOOLS

A BLENDED SOLUTION OF NATURAL RESTORATION DAYLIGHTING AND CULTURAL DAYLIGHTING

DAYLIGHTING THE PARKING LOT WILL INCREASE STREAM CAPACITY BY 60,000 GALLONS OF WATER.

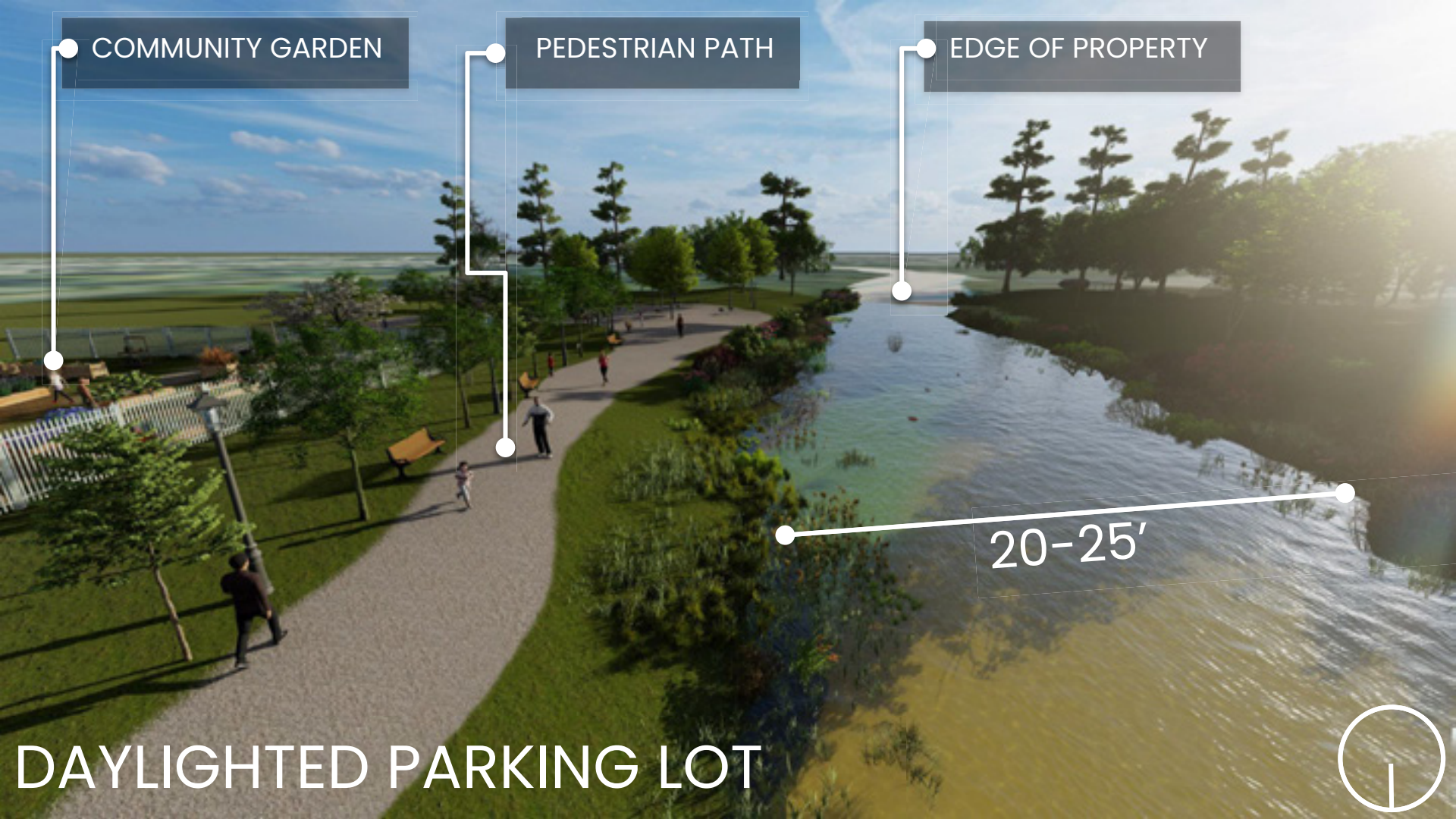


TOTAL OF 630,000 GALLONS OF RUNOFF DURING A 1" STORM.
THIS COULD FILL 56 STANDARD SWIMMING POOLS.

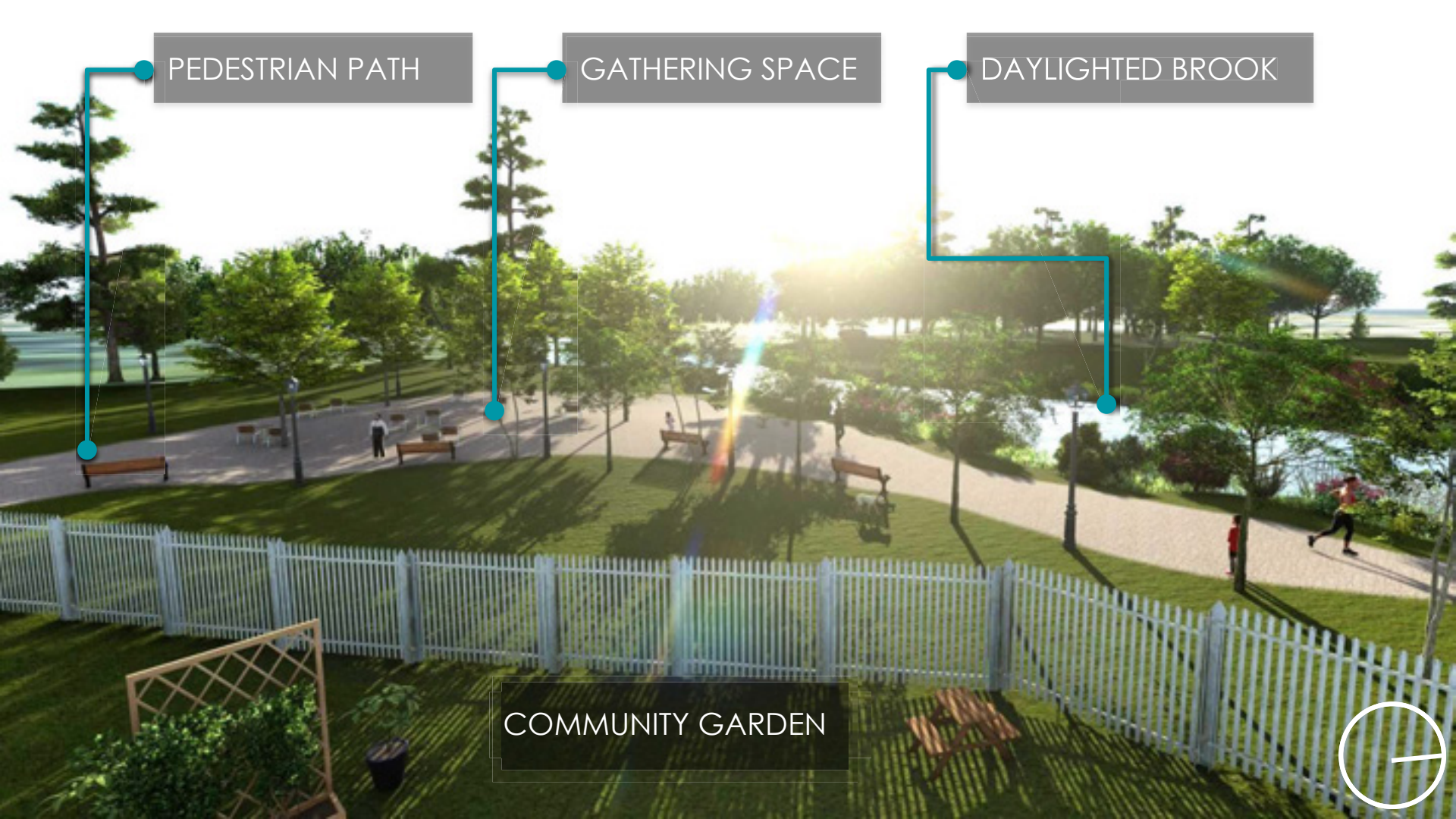
EXISTING VACANT CASINO

PROPOSED


REPURPOSED COMMUNITY CENTER
COMMUNITY GARDEN
BIOSWALES
PLAYGROUND
REMAINNG PARKING LOT
PEDESTRIAN CIRCULATION

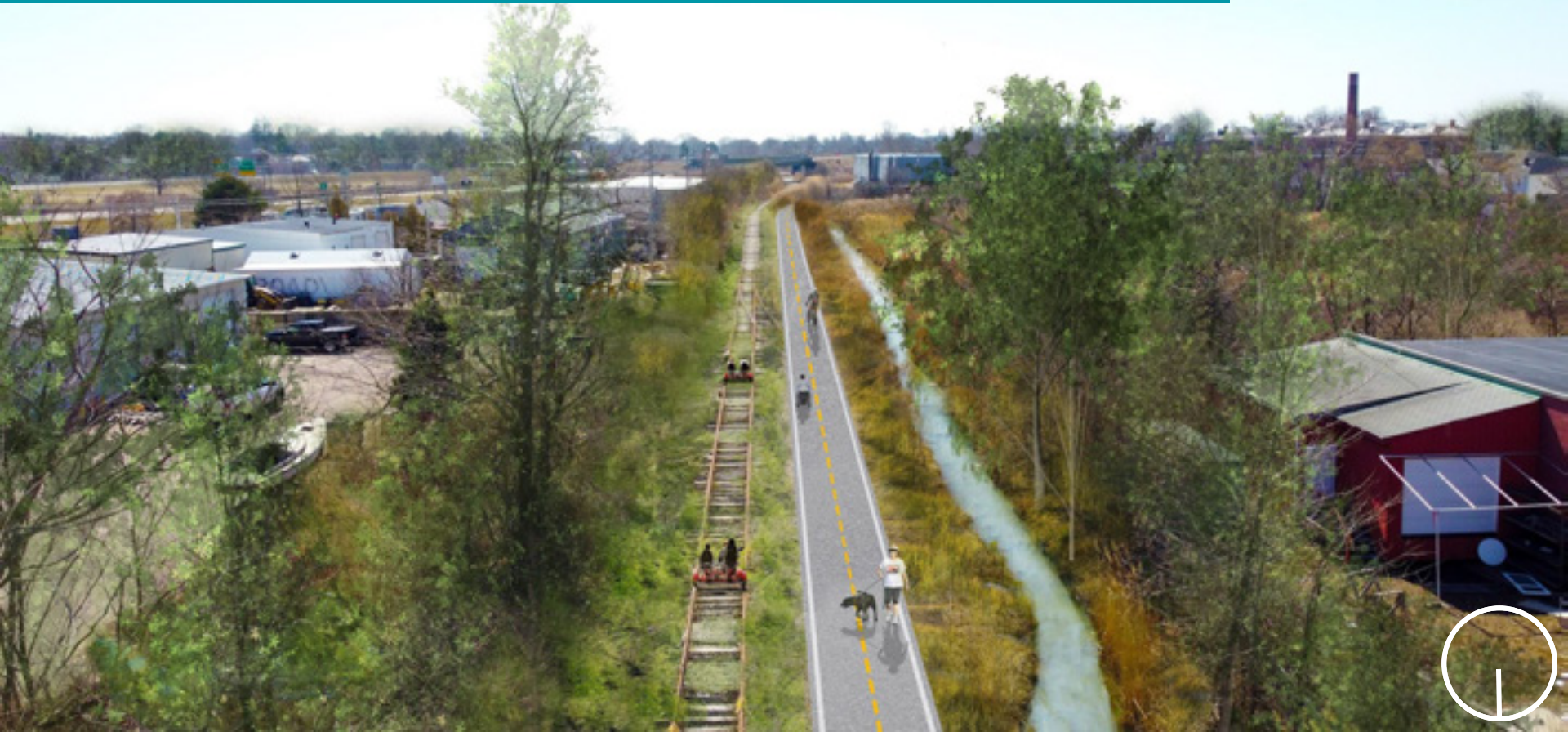


DAYLIGHTED PARKING LOT


PEDESTRIAN PATH
GATHERING SPACE
DAYLIGHTED BROOK
COMMUNITY GARDEN

WHERE THERE IS NOT ENOUGH WIDTH FOR BOTH THE EXISTING RAILROAD AND A TRAIL, A SOLE "RAIL TRAIL" WILL BE IMPLEMENTED.

WHERE FEASIBLE, A SEGMENT OF TRAIL SEPARATED FROM THE EXISTING RAILROAD, "RAIL *WITH* TRAIL" WILL BE IMPLEMENTED.



James Hinson

I'm interested in transforming the Elizabeth Brook to create an effective water management system and a water-centric system of parks throughout the North End.

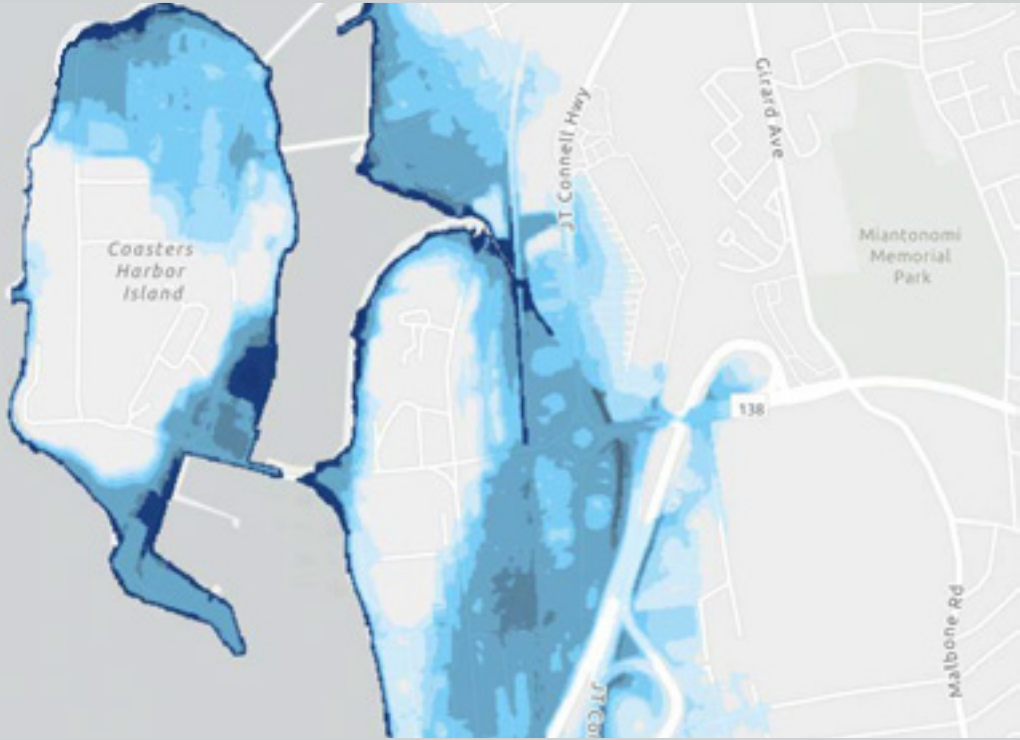
ELIZABETH BROOK TODAY

UNDERSTANDING SEA LEVEL RISE

PICTURED RIGHT: 3’ SEA LEVEL RISE

REALISTIC NEW ENGLAND TIMELINE: 6” / 20 YEARS

HURRICANE SANDY STORM SURGE: 8’ - 14’



BROOK MASTER PLAN

PROGRAM:

REJUVENATE THE EXISTING ELIZABETH BROOK TO CREATE AN EFFECTIVE WATER MANAGEMENT SYSTEM IN PREPARATION FOR SEA LEVEL RISE AND A BEAUTIFUL NEW WATER-CENTRIC PARK SYSTEM

NOTE:

SOME BROOK AREAS REMAIN UNDERGROUND AS IS CURRENTLY EXISTING

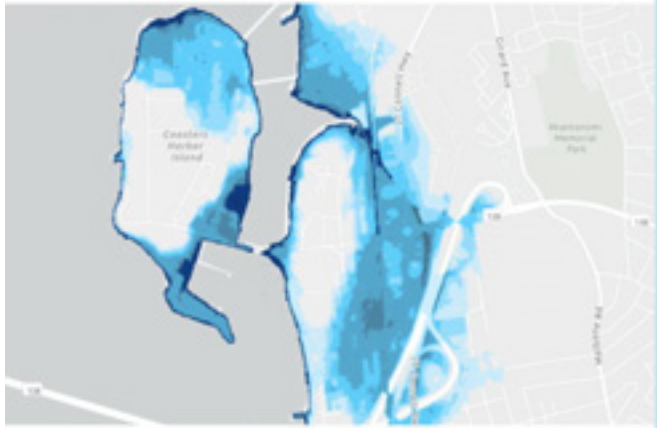
TOTAL BROOK CAPACITY: 2.2M GALLONS (6.57 ACRE FEET)

STORM FLOW CAPACITY: 37,000 GPH (.18 ACRE FEET)

TWO AREAS FOR DESIGN

1. Elizabeth Brook Mouth
2. Connell Highway Park - Newport Dog Park Extension

THREE FOOT SLR



ELIZABETH BROOK MOUTH

PROGRAM:

PROVIDE AN ELEVATED WALKWAY TO DISPLAY THE NATURAL BEAUTY OF COASTAL ECOSYSTEMS AND TO GAIN NEW VIEWSHEDS OF NARRAGANSETT BAY

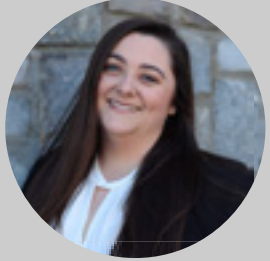
AS SEA LEVELS RISE OVER TIME AND WITH STORM SURGES, THIS WALKWAY WILL REMAIN

NEWPORT DOG PARK

PROGRAM:

EXPAND NEWPORT DOG PARK AND CREATE A BRACKISH/STORMWATER NATURAL RESERVOIR POND CAPABLE OF WITHHOLDING 1M GALLONS

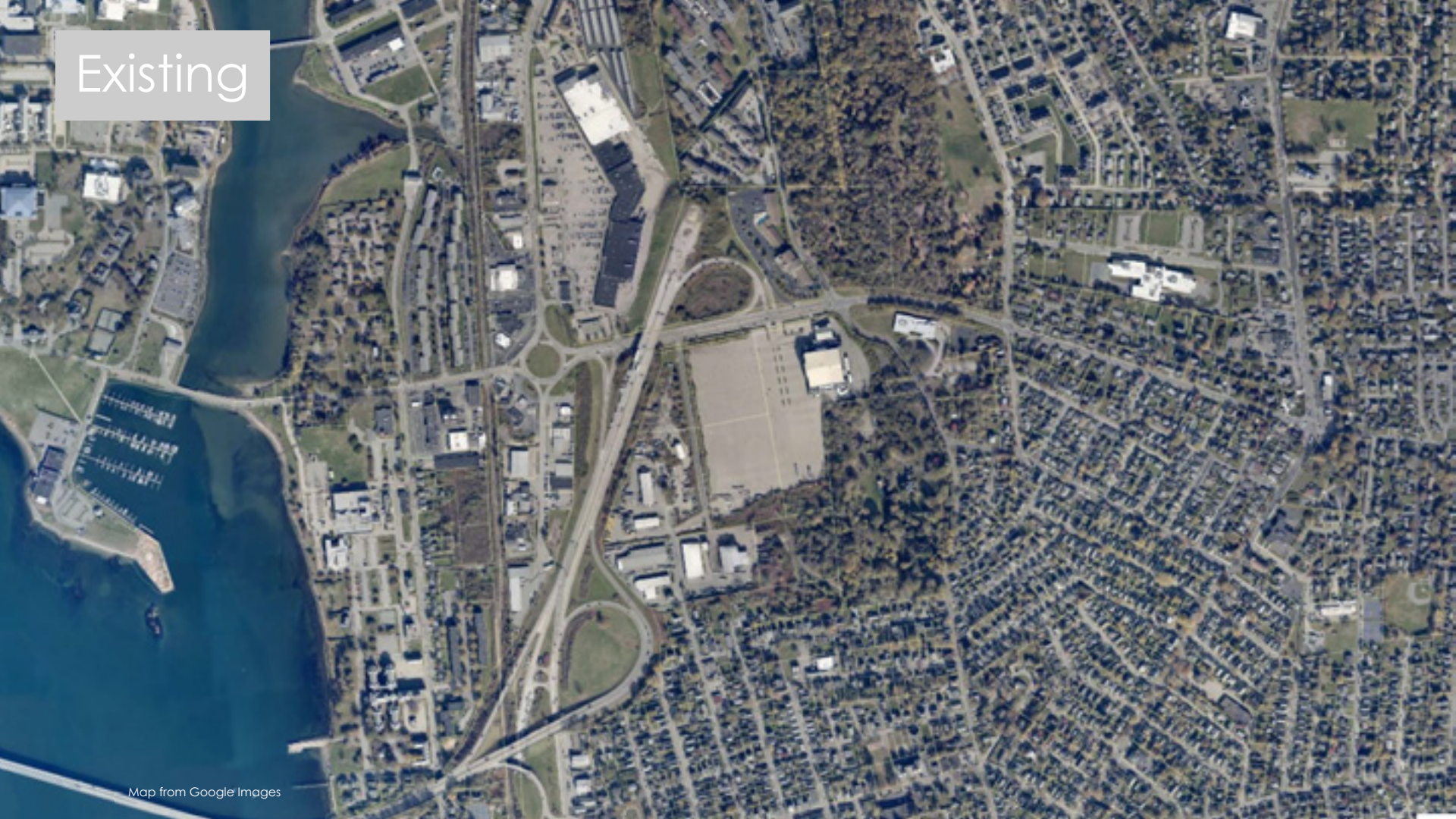
CREATES MULTI-USE RECREATIONAL AND INFRASTRUCTURALLY BENEFICIAL GREEN AREA THAT WILL EXPAND WITH RI DOT'S NEWPORT PLAN



Miranda Hulme
Elizabeth Brook
Professor Sheridan

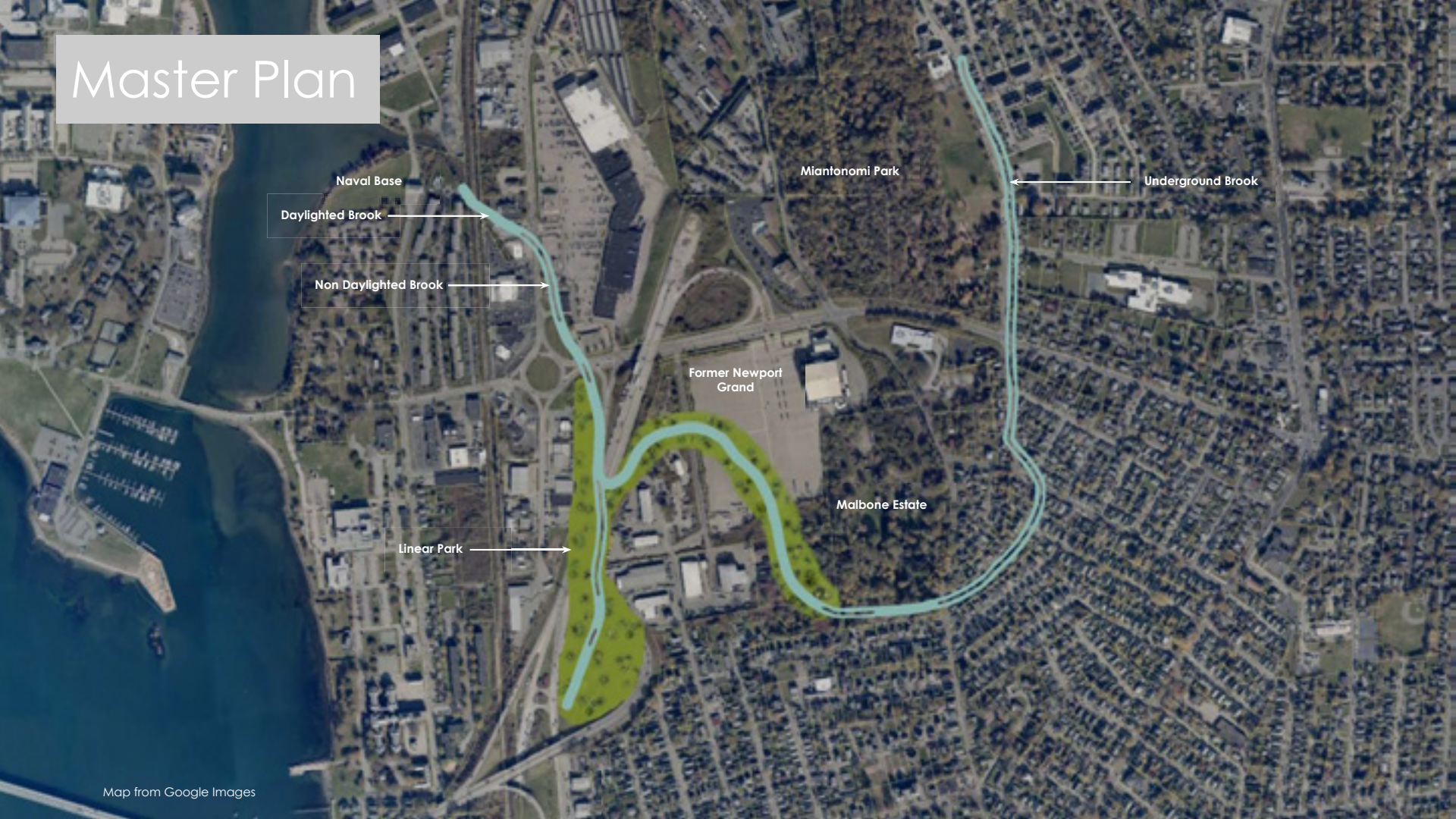
I'm interested in **daylighting** the Elizabeth Brook adding in **vegetation barriers** to clear the pollutants from the water runoff and **habitat** while also reducing the impacts of flooding and sea level rise while creating a **linear park** allowing for safe use by pedestrians and cyclists.

Existing



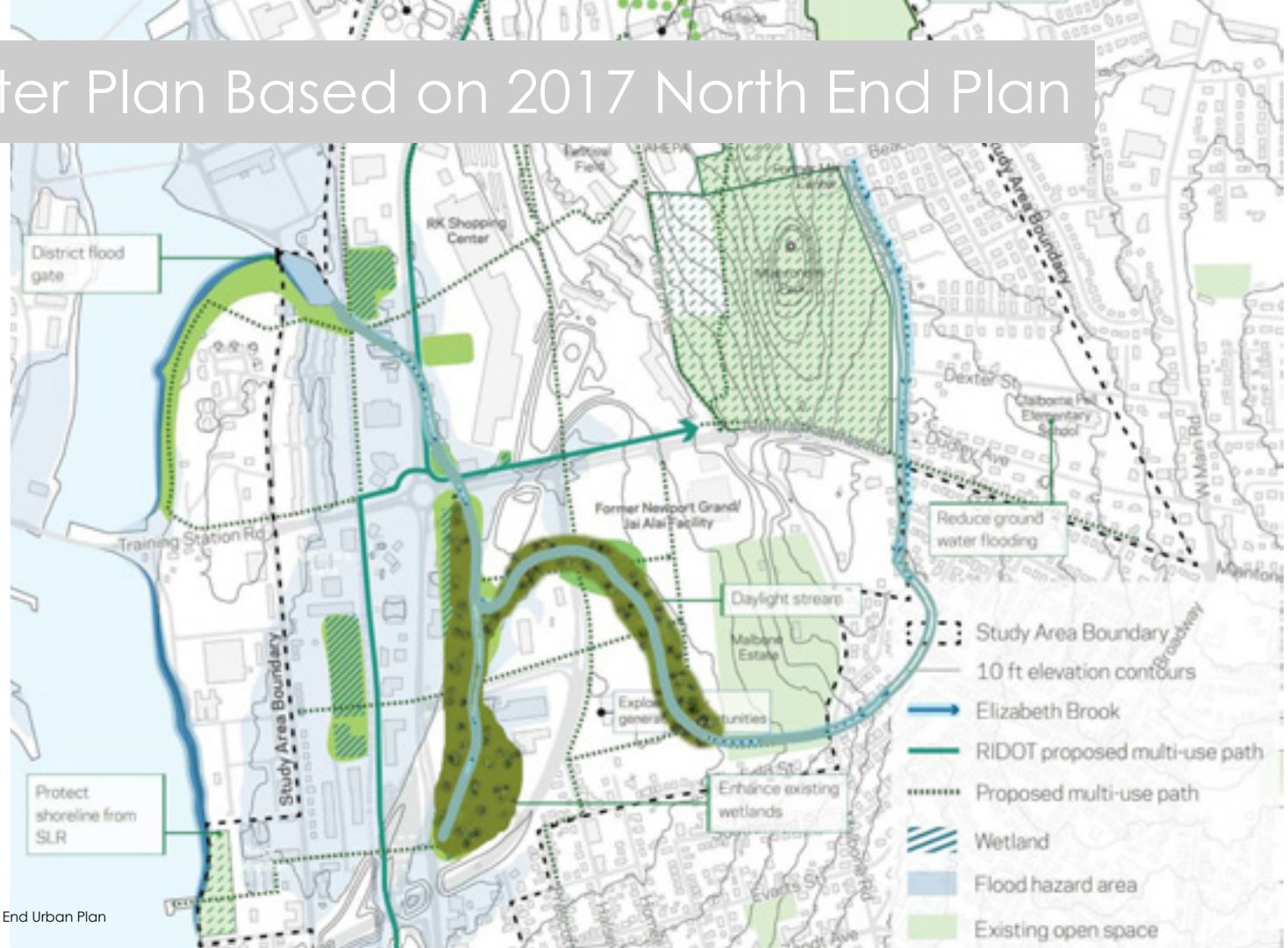
Map from Google Images

Master Plan



Map from Google Images

Master Plan Based on 2017 North End Plan

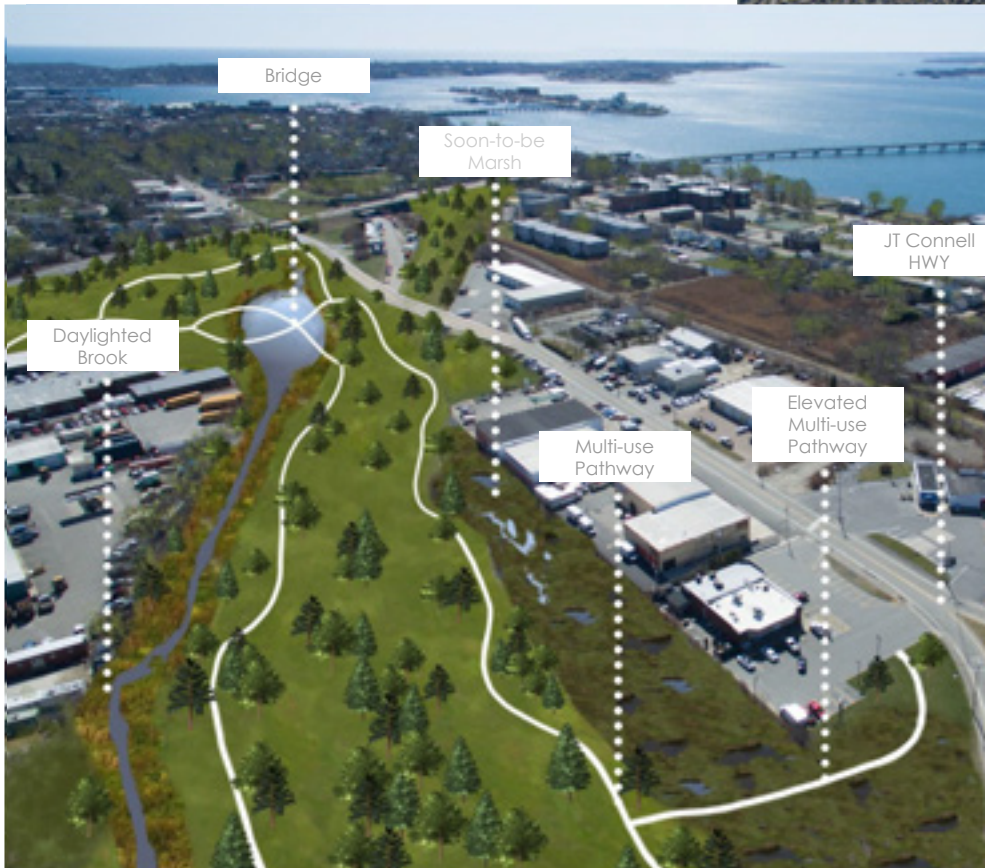


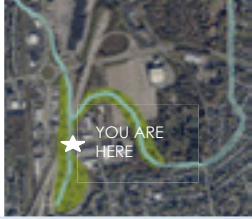
Map from Newport North End Urban Plan

Linear Park

Before

After

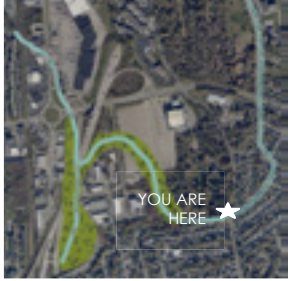




Linear Park Perspective

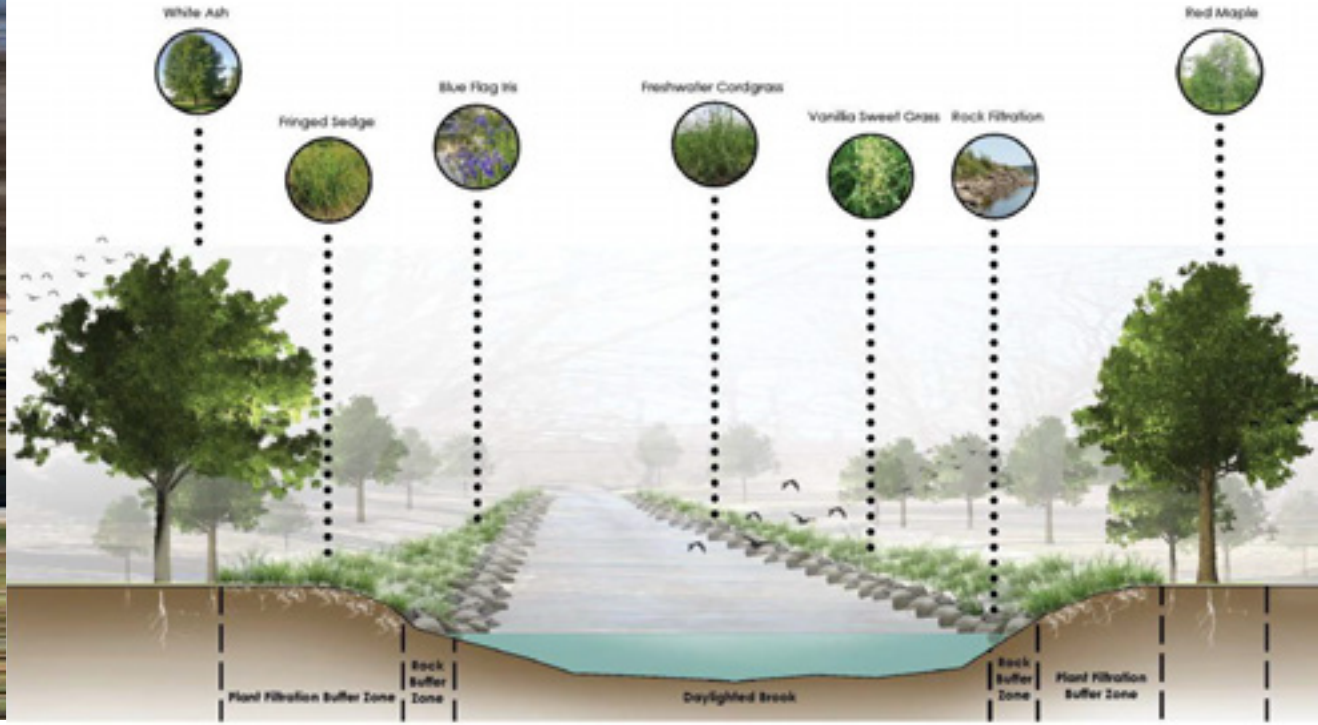
Daylighting The Brook

Vegetation buffer will filtering, pathogens, nitrogen. It will reduce flash flooding and erosion along the Brook



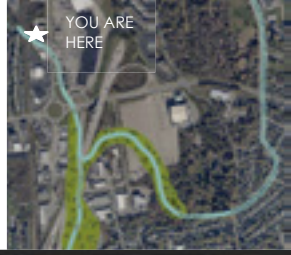
Before

After



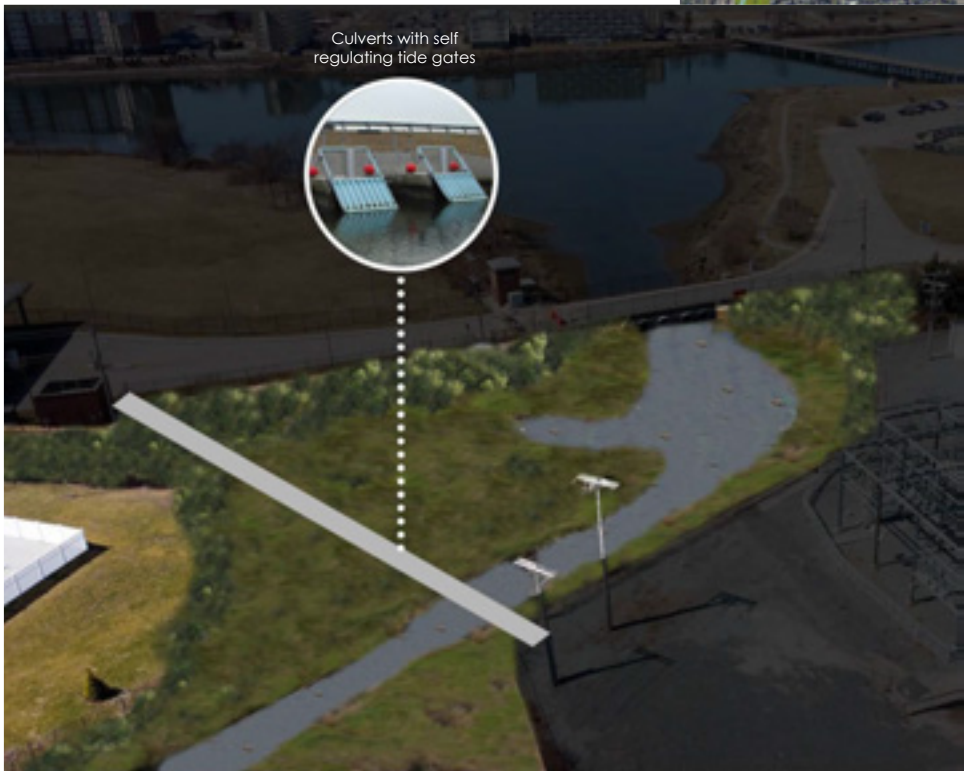
Tide Gate

Stops saltwater infiltrating the North End. Deepend downstream channels improving navigation.



Before

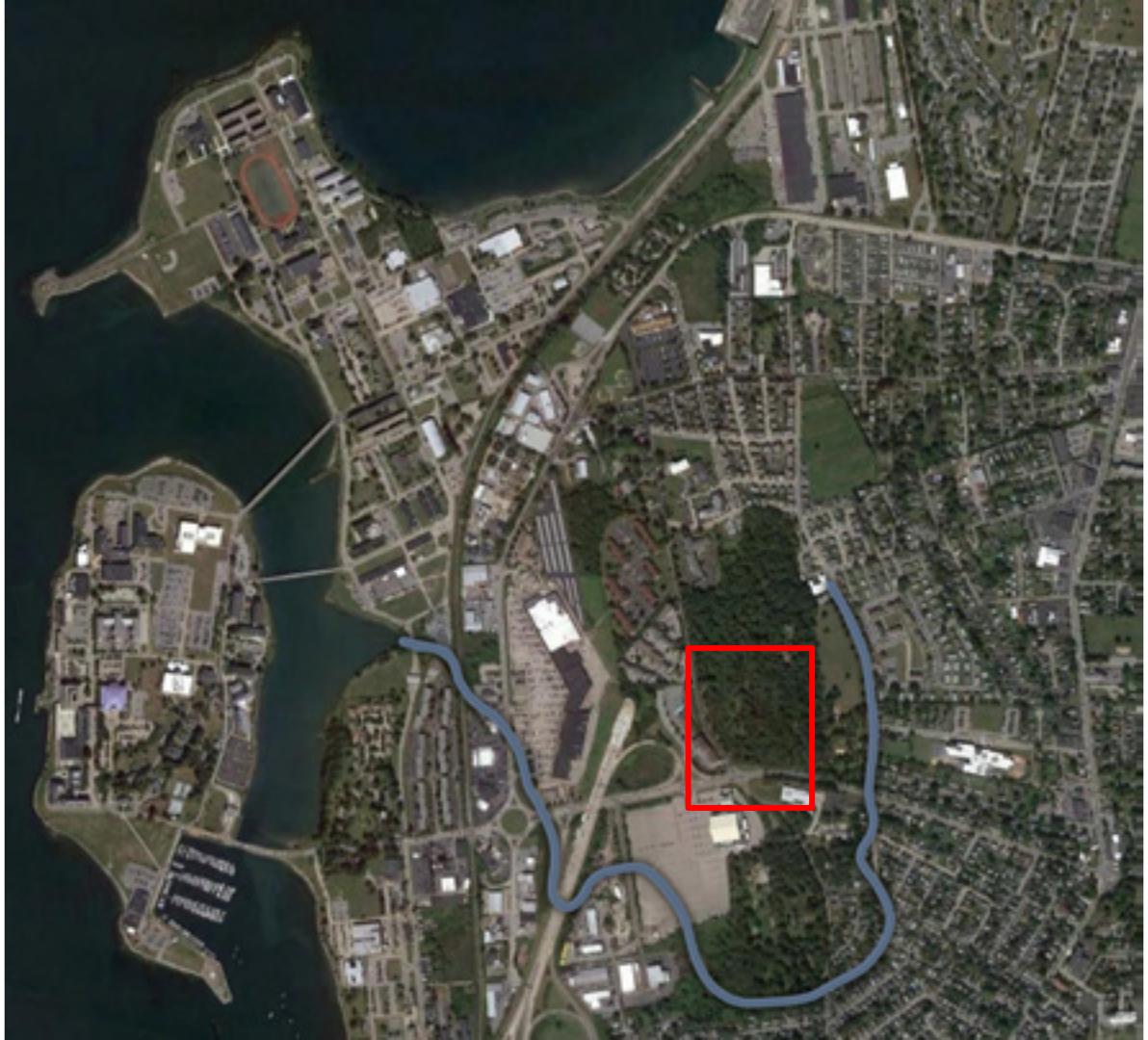
After



TIde gate image from Galilee Salt Marsh Restoration Site

Kevin Kloos
Elizabeth Brook
Professor Sheridan

I'm interested in the collection and treatment of excess runoff for future uses, such as irrigation. The use of embankments and bioswales will also mitigate inundation in the North End.

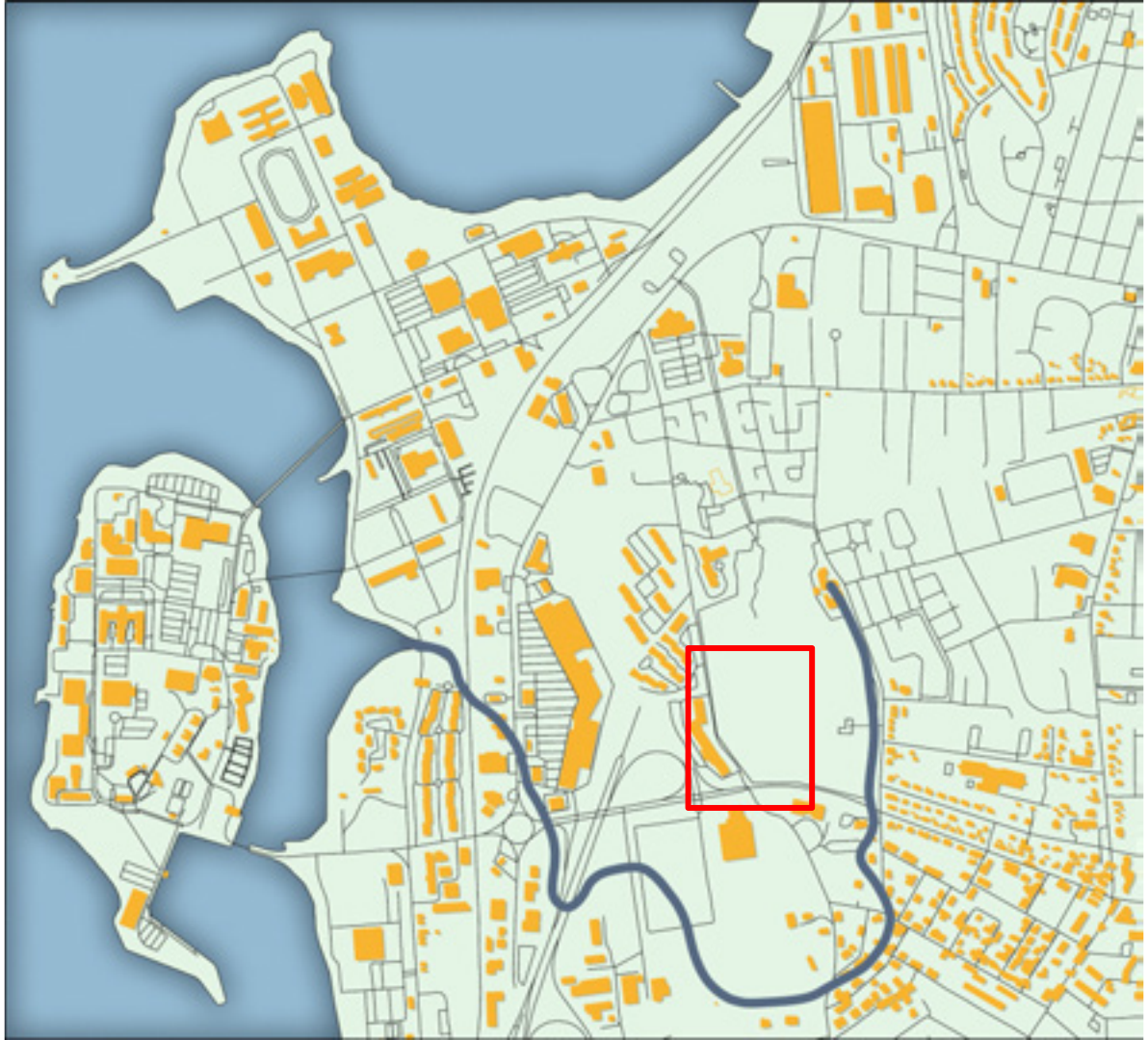


Focus Area:
Corner of Girard Ave and Admiral Kalbfus Rd

Newport's Hazard Mitigation Primary and Continuity Action Plan:

Protect and reduce the vulnerability of the potable water supply

Protect and reduce the vulnerability of the waste water system infrastructure



GOALS

Mitigate inundation through the use of embankments and bioswales along newports north end

Treat excess runoff and utilize underground cisterns for future use/irrigation

Redirect rainwater along pathways and promenades for later irrigation

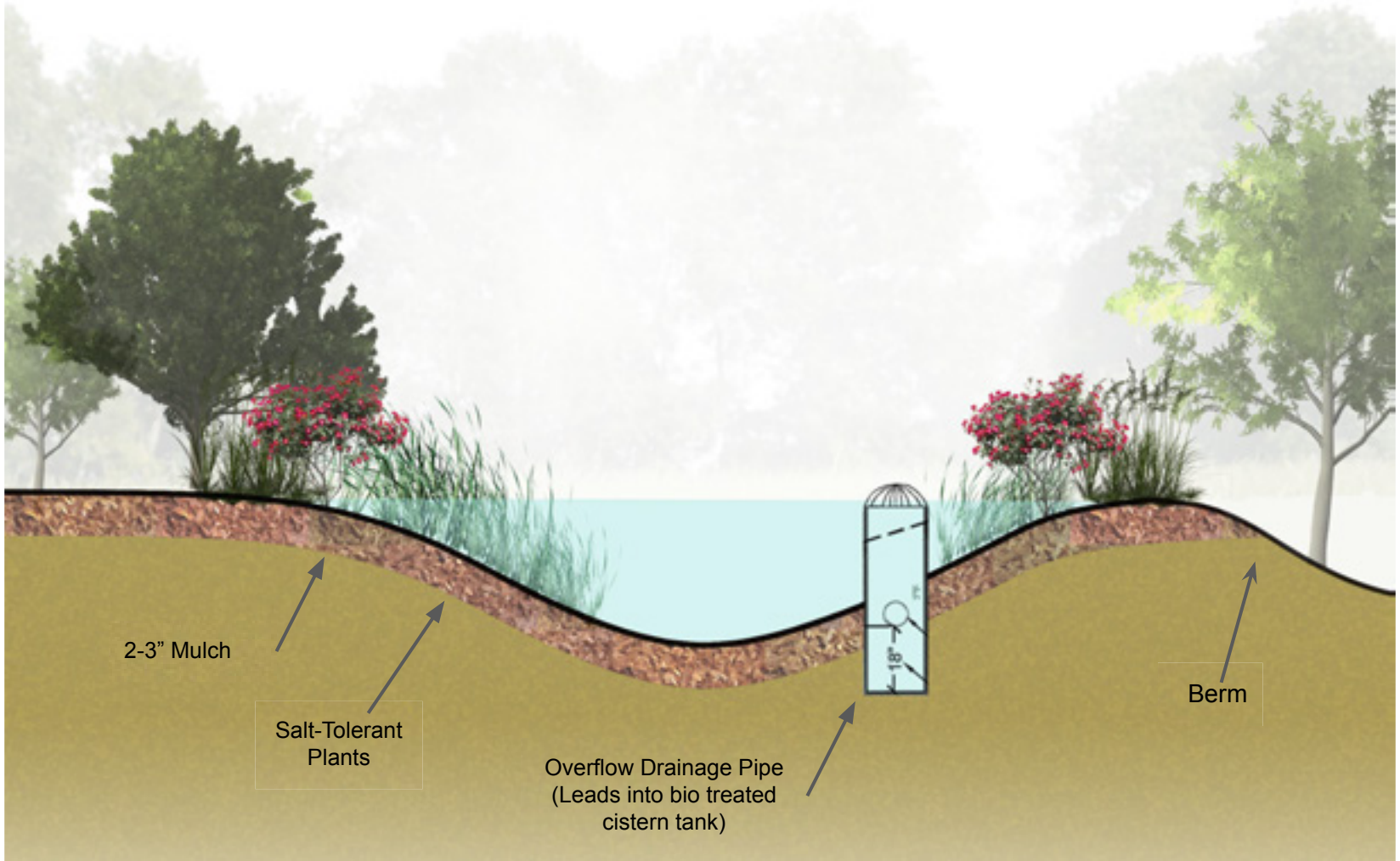

Girard Ave
Admiral Kalbfus Rd

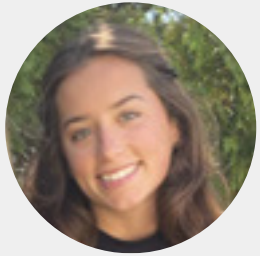

500 Year (.2%) Flood Event
Can also collect rainwater and excess runoff


Cistern

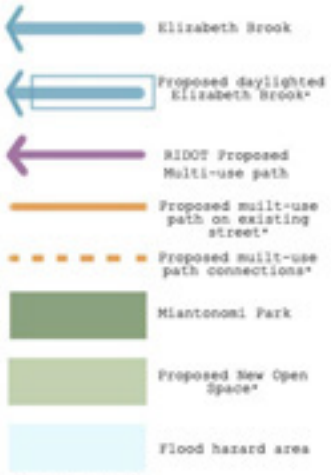
A 1,500 Gallon Bruiser (Biotreated & Potable) Cistern


Estimated 97% less land than conventional farms
Estimated 95% less water than conventional farms


2-3” Mulch
Salt-Tolerant Plants
Overflow Drainage Pipe (Leads into bio treated cistern tank)
18”
Berm

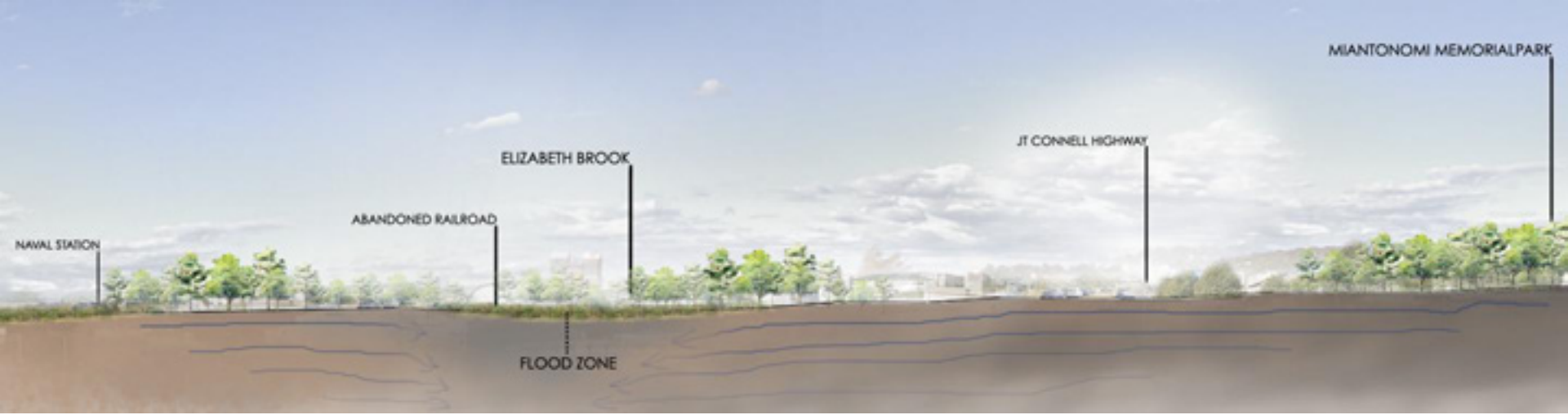


I'm interested in revitalizing Elizabeth Brook to protect the environment against inundation while creating green open spaces for the residents of North End Newport. This will be accomplished by implementing green infrastructure, sustainable practices, and community connection.



Environmental Restoration

Community Connection



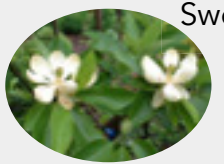
ANALYSIS: Flood zone is seated between the coast and the urban north end of Newport. Creating areas that are prone to short and long term flooding.

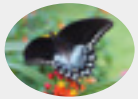
PROPOSED: New green open spaces will contribute to mitigate the effects caused from inundation.
Short Term: Runoff Pollution, Road Closings, Opportunity for Invasives to Infiltrate.
Long Term: Coastal Erosion, Loss of Land and Buildings in Flood Zones.

SOLUTIONS: Biomimicry, create a flood zones that mimics the natural efforts of a healthy wetland. Achievable through the use of plants that can survive in brackish waters and filtrate pollutants.

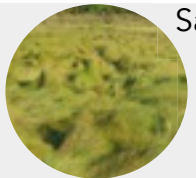
Spike Grass

Helps to stabilize soil



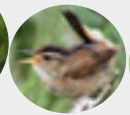


Sweetbay Magnolia



Salt-Hay Grass

Pollutant filter & flood buffer



Marsh Elder


2
1
N

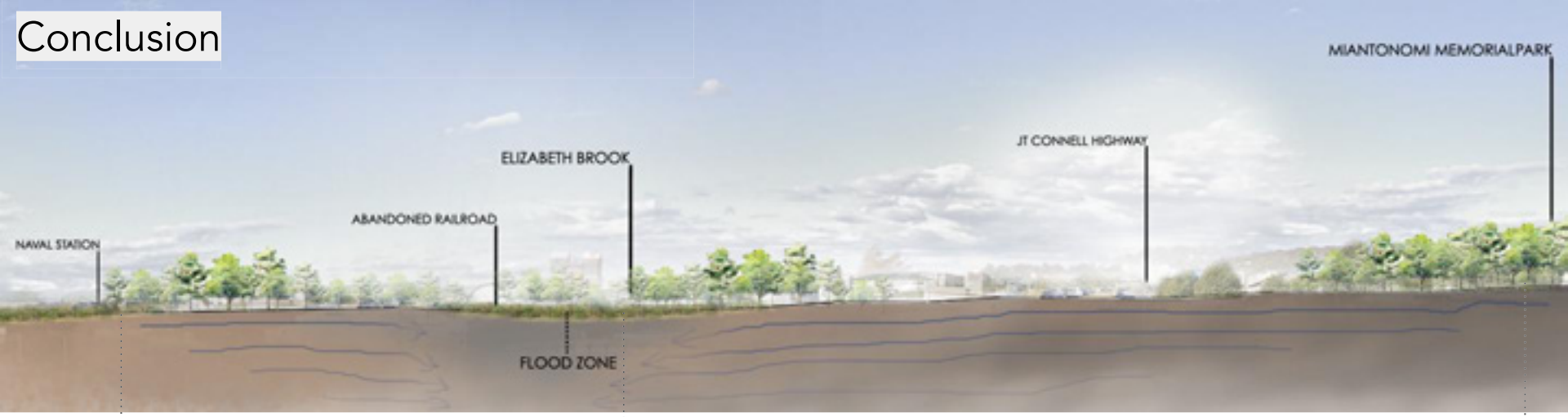
1. RIDOT Trail

- Abandoned railroad turned into multi-use pedestrian path.
- Around 1.5 miles of permeable paved paths.
- Working with the MESM program at URI to research bike newport.
- Allows connection between West (Miantonomi Park) & the East (coastal north end)

2. Boardwalk with view of tide gate

- Collaboration with OCE to implement self regulating tide gate.
- Restores estuarine plants, fish, shellfish, waterfowl, and other wildlife
- Reduces mosquito populations naturally
- Protects flood-prone areas
- Deepens downstream channels resulting in improved navigation

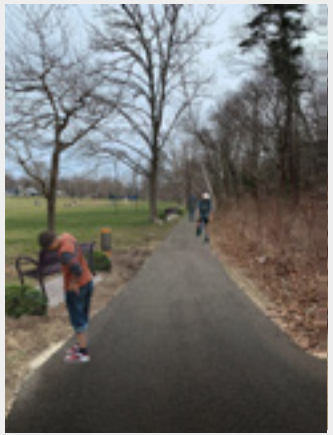
Conclusion



Tide Gate

Proposed Multi-use trail

Multi-use trail continued through park



TAKEAWAYS: Restoring what was previously there by repurposing and enhancing. Restoration of the Elizabeth Brook and the process of daylighting will greatly improve the health of the brook and its surrounding environment. Repurposing the railroad will enhance non-vehicular community connection.

BENEFITS: Restoring and repurposing will increase the economic revenue of the North End. Residents will have the opportunity to interact with the new green spaces through public programs and educational opportunities.

Maggie Spano
Elizabeth Brook

I was interested in working with the Elizabeth Brook to *implement* stormwater infrastructure, *educate*, and *reconnect* the North End residents with the coast.

GOALS:

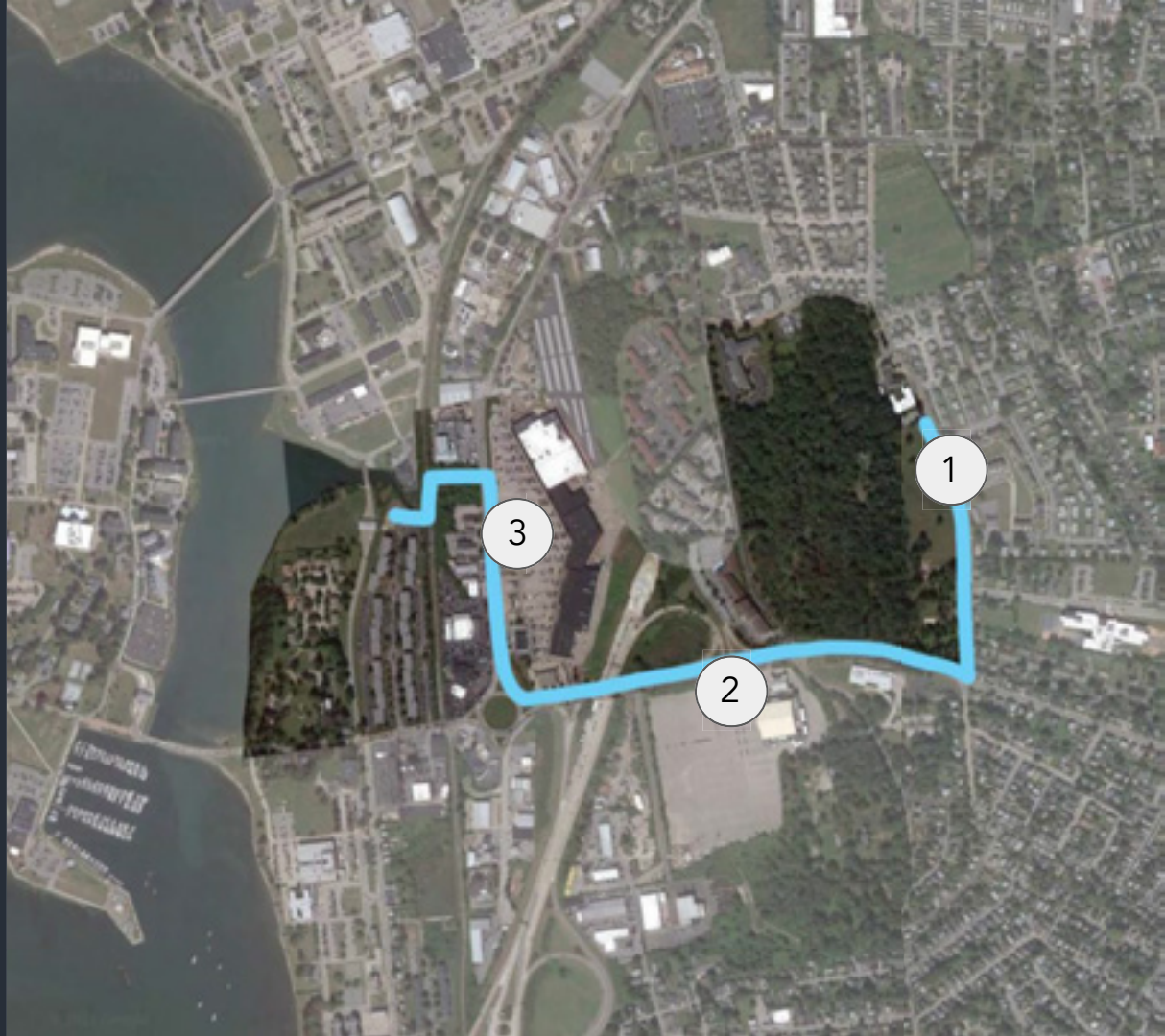
- Create an educational greenway that reconnects the north end residents with the coast via pedestrian access
- Implement stormwater infrastructure to reduce flooding by the time it reaches the outlet into the bay
- Establish interactive green areas that appeal to all residents and visitors of Newport

FOCUS AREAS:

1. Miantonomi Park
2. Route 238 Off Ramp
3. JT Connell Crossing

KEY CONCEPTS:

1. Stormwater Infrastructure
2. Education
3. Connectivity



1 Miantonomi Park Bioswales

Improved linear bioswales along Miantonomi Park capture stormwater runoff from the road and also create a green barrier between pedestrians and traffic. Plantings are native and encourage a variety of wildlife to explore and inhabit the area.

1 Stormwater Infrastructure

1 cubed foot of water = 7.48g

1" of rain = 22,650g/acre

500' x 8' x 6' = 24,000^3'

24,000 x 7.48 = 179,520g capacity

22,650 x 2.87 = 65,005.5 total rainfall in the area for 1" of rain

179,520/65,005.5 = 2.76" of rain capacity

Along Miantonomi Park, there is 500' of linear bioswale area, and they are 8' wide and 6' deep.

According to my calculations using Darcy's law, the bioswales along Miantonomi are able to hold up to 179,520 total gallons of stormwater runoff in just this section of my design. One inch of rainfall equals 22,650 gallons of rain per acre, and the runoff area is equal to 2.87 acres. This means that the area would be able to retain stormwater for up to 2.7" of rain in a single storm event.

2 Route 238 Off-Ramp Pocket Park

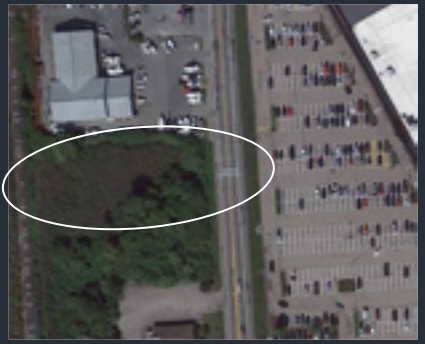
Safer sidewalk access and green space allow pedestrians to feel welcome to walk along this stretch of sidewalk. Small pocket park with a central bioswale act as stormwater retention, and adds a sense of intrigue to the site, encouraging pedestrians to explore.

2 Educational Signage

Educational signs such as this will be in multiple locations around the site, with information on surrounding area, infrastructure, and green space. They match Newport signage in color and in symbols, and will nicely fit into the landscape without being too bright or distracting.

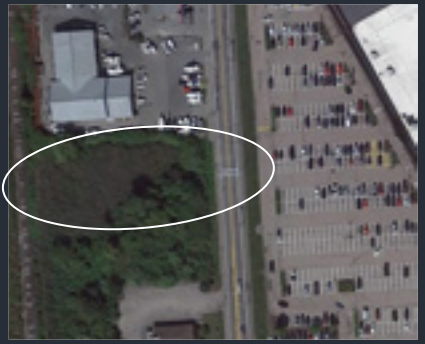
Information for this sign was found at these sites :
https://tclf.org/landscapes/miantonomi-memorial-park
https://www.grownyc.org/openspace/green-infrastructure-toolkit/bioswales

3 Safely Crossing JT Connell Hwy



This crosswalk is vital to connecting the north end with the coast. The raised walkway through this marsh area will allow pedestrians to safely cross to the other side of the JT Connell Highway and also explore many different types of plants and wildlife in this area.

3 Connectivity to the Coast



JT Connell Highway is one of the most significant barriers that makes accessing the coast difficult for residents. Implementing crossing signals gives pedestrians the confidence they need to cross the highway and access places that once were less accessible.


THANK YOU!
QUESTIONS OR COMMENTS?