Resilience

PLANNING AT THE MUNICIPAL AND REGIONAL SCALE
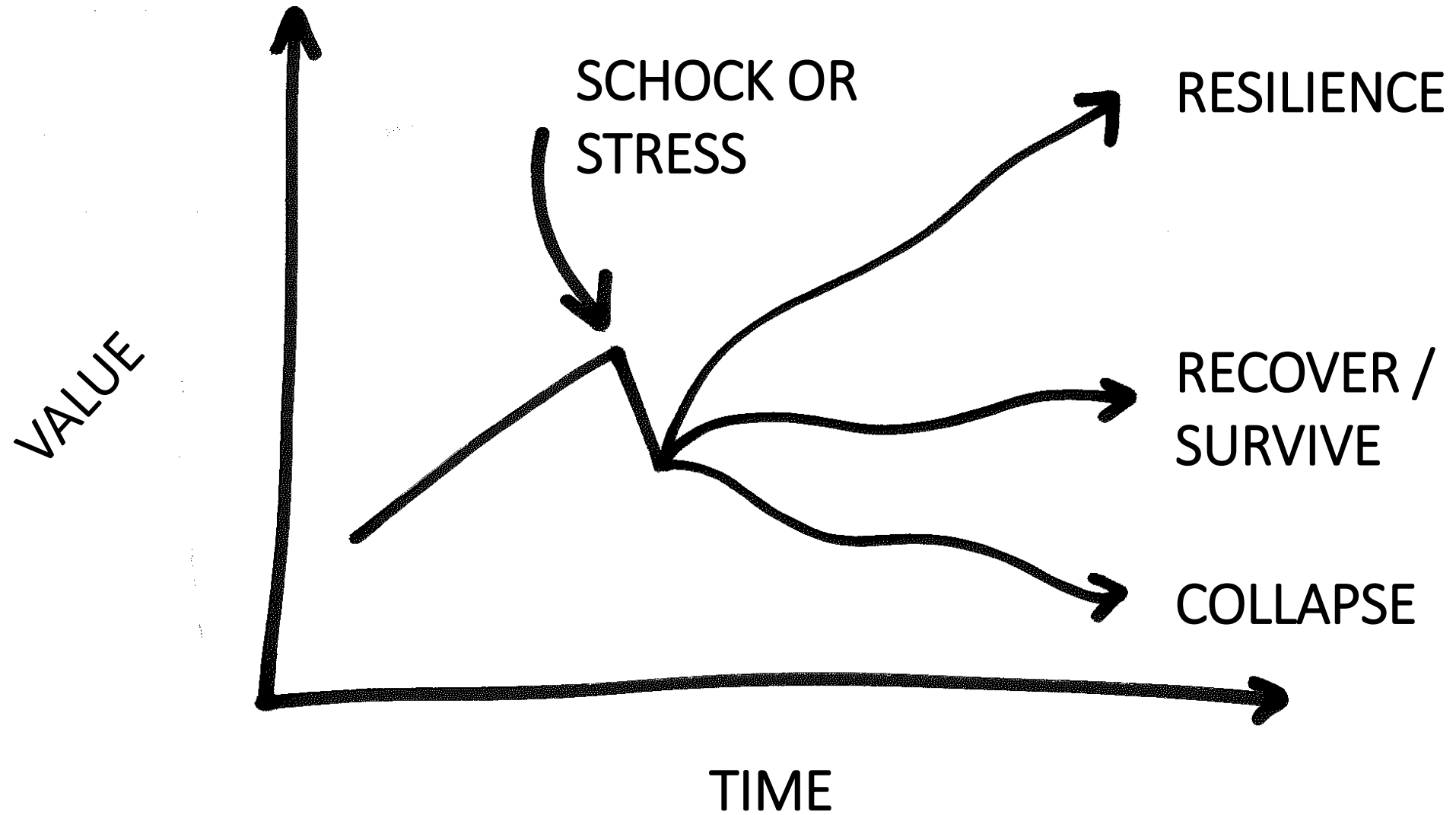
David Kooris, AICP
Director of Resilience
Department of Housing

Is "Resilience" Just the New Planning Buzzword; Isn't it the Same as "Sustainability" or "Adaptation"

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
- World Commission on Environment and Development (Brundtland)

"Urban resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience."
- 100 Resilient Cities, Rockefeller Foundation

Shocks and Stresses Vary by Community and Scale

Shocks / Acute

- Flooding
- Heat Wave
- Terrorist Attack
- Disease Outbreak

Stress / Chronic

- Housing Affordability
- Poor and Inequitable School Performance
- Economic Shifts (Unemployment, Commercial Vacancy)
- Outdated Infrastructure
- Fiscal Instability

MONTVILLE

Plan of Conservation and Development 2010

Prepared by:
The Montville Planning and Zoning Commission
Marcia A. Vlaun, AICP
Colleen Bezanson, GIS Specialist

Effective Date
May 15, 2010

Incorporate into Document(s) with "Teeth"

- Municipal Plan of Conservation and Development (POCD)

- Regional POCD

- Municipal Hazard Mitigation Plan (HMP)

- Regional HMP

- Municipal Development Plan (MDP)

- Comprehensive Economic Development Strategy (CEDS)

Plan at the Appropriate Scale

Connecticut Towns
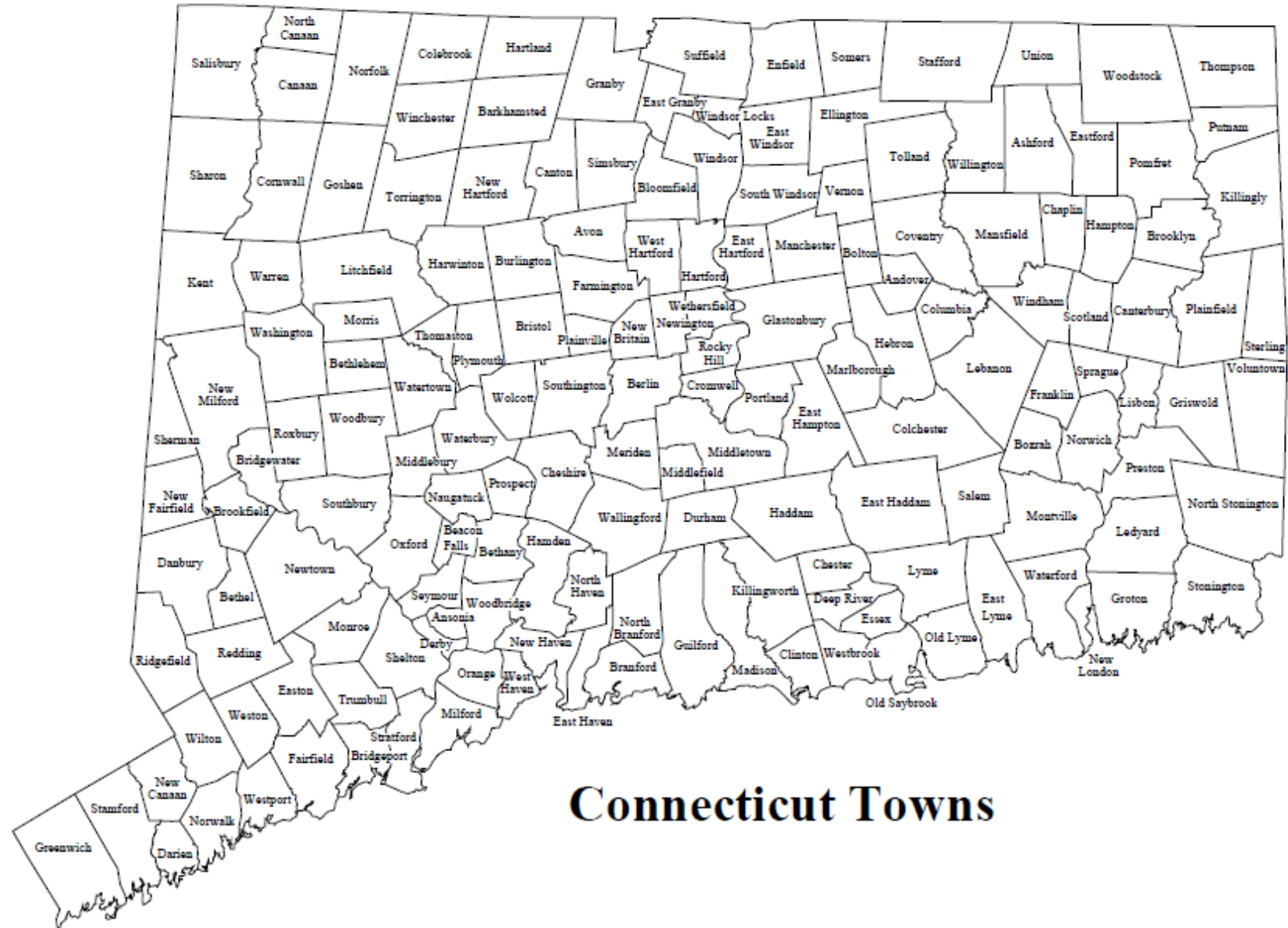
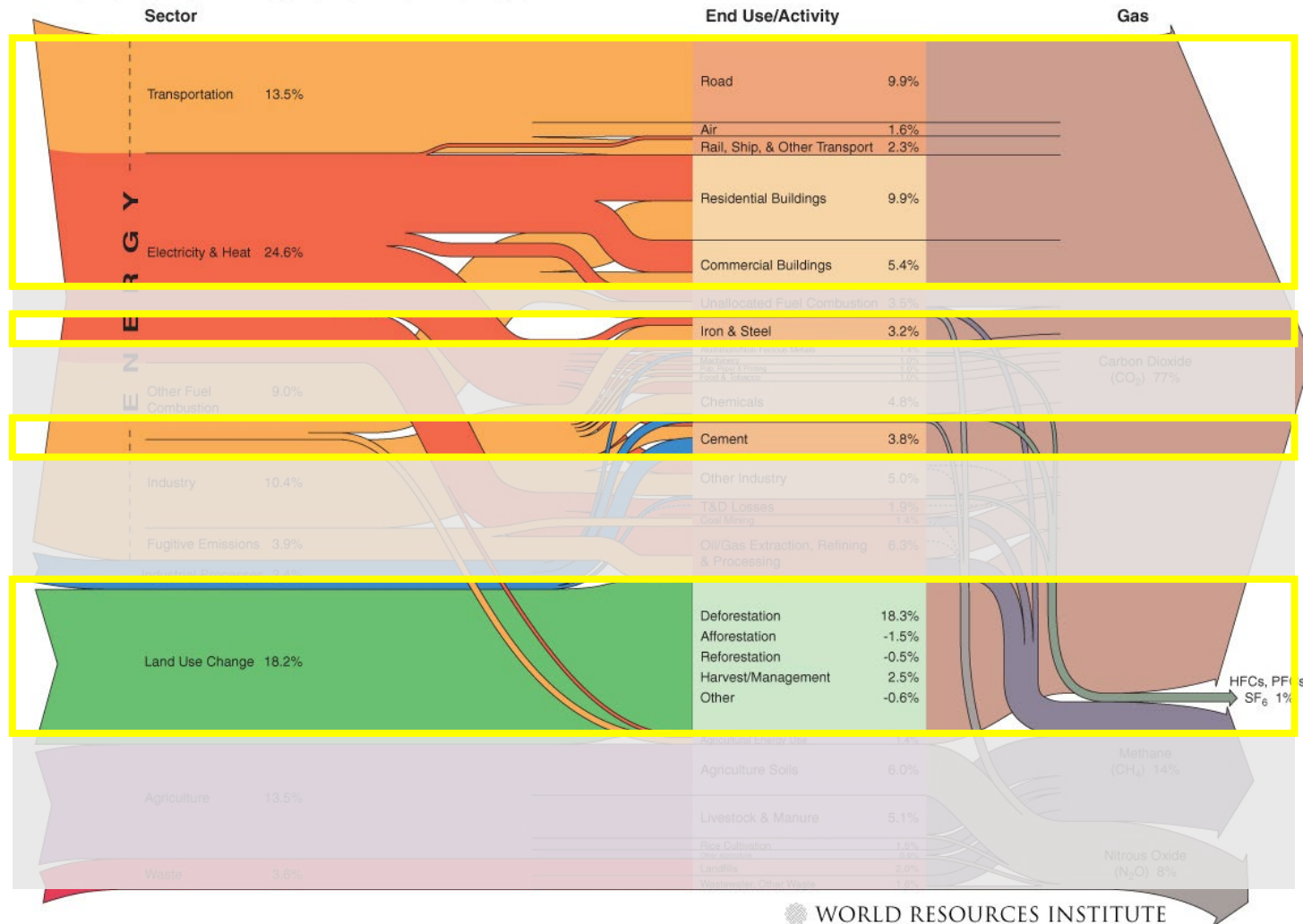# Link Adaptation Actions to Mitigation Strategy

World GHG Emissions Flow Chart

With **sustainability** as an additional goal, chosen **adaptation** actions (e.g. flood protection measures) to foster **resilience** must reinforce those locations/activities which further our **mitigation** (i.e. emissions reductions) goals rather than perpetuate locations/activities that are carbon intensive.

HARBORS OF

BLACK ROCK AND BRIDGEPORT

Founded upon a Trigonometrical Survey

under the direction of F.R.HASSLER Superintendent of the

SURVEY OF THE COAST OF THE UNITED STATES

Triangulation by J.FERGUSON Assistant

Topography by C.M.EAKIN Assistant

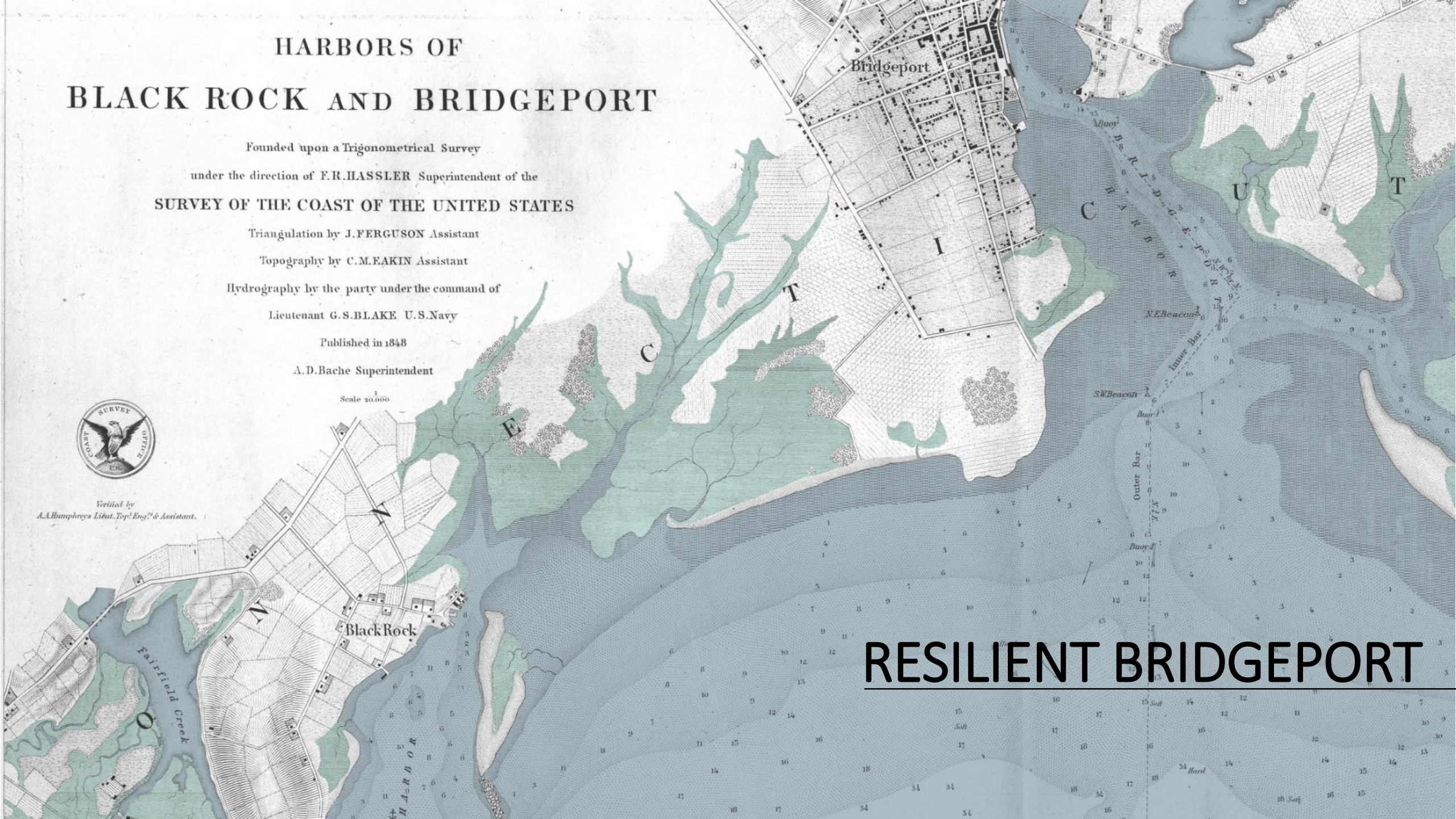Hydrography by the party under the command of

Lieutenant G.S.BLAKE U.S.Navy

Published in 1848

A.D.Bache Superintendent

Scale 1/20.000

Verified by
A.A.Humphreys Lieut. Top! Eng? & Assistant.

Bridgeport

Black Rock

RESILIENT BRIDGEPORT

WB unabridged w/ Yale ARCADIS

LANDSCAPE TYPES

CONSTRAINED LAND, FEW TAXES

Bridgeport has 12.6 mi² of Parcel Area
3 mi² are Property Tax Exempt
2.6 mi² are in a Flood Zone

PHASE ONE PROJECTS

Primary Coalition
City of Bridgeport
Bridgeport Housing Authority
Housatonic Community College
Bridgeport Neighborhood Trust
The Nature Conservancy
Bridgeport Regional Business Council

Regional Supporters
American Planning Association
City of Ansonia
City of Derby
City of Fairfield
City of Stratford
City of West Haven
Lower Naugatuck Valley Council
Trust for Public Land
Yale Urban Design Workshop

Local Coalition
Mayor's 2020 Committees
GBRC CTO
Bridgeport School Board
Bridgeport Housing Authority
Seaside Village Board of Directors
Harbor Village Tenants Association
Mercy Learning
UI/oneCoalition for Budget
University of Bridgeport
Greenthumb Bridgeport
Bass River Restoration
Audubon
Soil Conditioning
Peter Reilander
PSEG
PMG
Wholefoods
Aquarion
Essex Savings Bank
Xerox Design

State, Federal & International Supporters
CT DEEP & CT Fund of Letters
HUD
FEMA
NOAA
EPA
City of Meriden
Royal Netherlands Embassy

Design Team
Waggonner and Ball
Waggonner Architecture
Gulf Coast Community Design Studio
Yale University
ARCADIS

Design Affiliates
Carl Peard
Kathy Dorgan
Andrew Dobbenberg
Derek Hoeferlin
Tom Watson

WATER CITY
WORK AND PLAY

DOWNTOWN
BRIDGE AND PORT

D3 Congress Street Bridge and Green

D1 + 2 Downtown Loop and Floodwall

D4 Downtown Design Center and Community Development

PEQUONNOCK RIVER
CLAIM THE EDGE, PARK TO PARK

East Side Green Streets

P2 Lower Pequonnock Design and Implementation Plan

ABUNDANCE
AT THE WATER'S EDGE

BLACK ROCK HARBOR
POWERING THE CITY

B1 Elevated Infrastructure Corridor

B2 Offshore Outfall Park with Study for Onshore Mitigation and Neighborhood Transformation

B3 Comprehensive Feasibility Study for Bridge with Integrated Surge Protection

ENGAGEMENT
SHARING STORIES

SOUTH END
PROTECTING THE COMMUNITY

S1 + 2 Multifunctional and Integrated Protective Alignment and Living Shoreline: Constructed Breakwaters with Wetland

S3 Neighborhood Transformation Grant with Resilience Education and Community Center

CITY AT RISK
STORMS ON THE HORIZON

2014/2050

Phase 1 + 2

GROWTH
NEIGHBORHOOD REVITALIZATION AND ECONOMIC DEVELOPMENT

WATERSHED
Pequonnock River and Inland Waterways

CENTERS
Resilience, Education and Design

INTEGRATED LINES
Protective Infrastructure links communities

PROTOTYPE FOR COASTAL CITIES

Learning from and working with nature is key to future safety and prosperity for neighborhoods and cities up and down coastal Connecticut.

UPLANDS

RIPARIAN CORRIDORS

COASTAL FLATS

RESILIENT BRIDGEPORT
CLAIM THE EDGE, CONNECT THE CENTER

MODEL FOR THE SOUND

New London
New Haven
Bridgeport
Stamford

Pequonnock
East Side
East End
Downtown
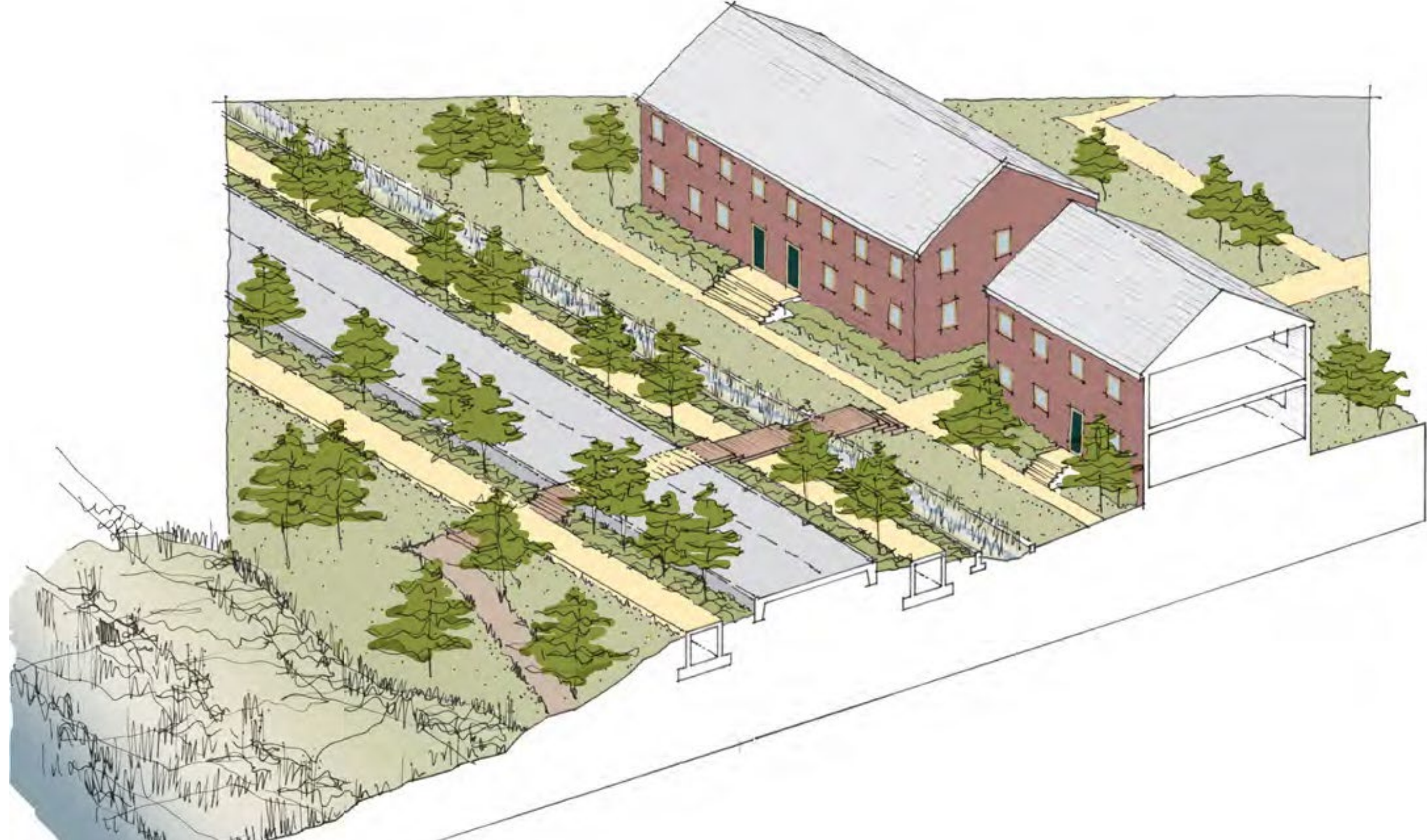West Side
South End
Black Rock Harbor

$10 MILLION AWARD

Study Area

Surrounded by water and bounded by **State Street, Fairfield Avenue, and downtown,** Bridgeport's low-lying South End, Black Rock Harbor, and Cedar Creek area host vibrant and diverse communities. This area is home to residential neighborhoods, multiple historic districts and landmarks, productive industrial facilities, educational institutions, regional transportation systems, and critical regional energy and wastewater infrastructure that face growing environmental challenges.

Investment zones for the Resilient Bridgeport project have been selected because of their vulnerability and unmet needs, historic character, and critical infrastructure in response to HUD's directive to:

- Reduce flood risk for the most vulnerable communities, particularly the public housing developments in the city's South End/Black Rock Harbor area.
- Address unmet recovery needs caused by Hurricane Sandy and other natural events in calendar years 2011, 2012, and 2013.
- Leverage significant match funding from the State of Connecticut and local funds.

Sources
1. City of Bridgeport
2. Sanborn
3. National Hydrography Dataset

LEGEND

- Public Housing
- Impervious Surface
- Pervious Surface
- Park
- Tree Canopy
- Buildings & Structures
- Water
- Corridors

feet
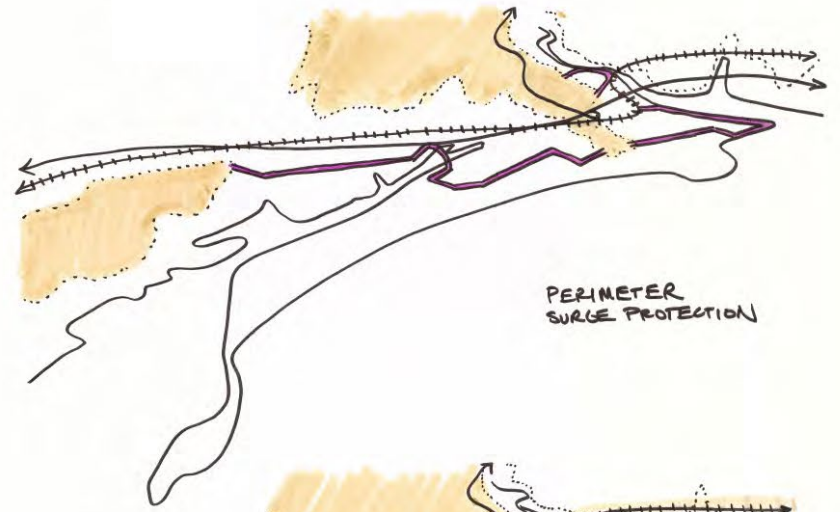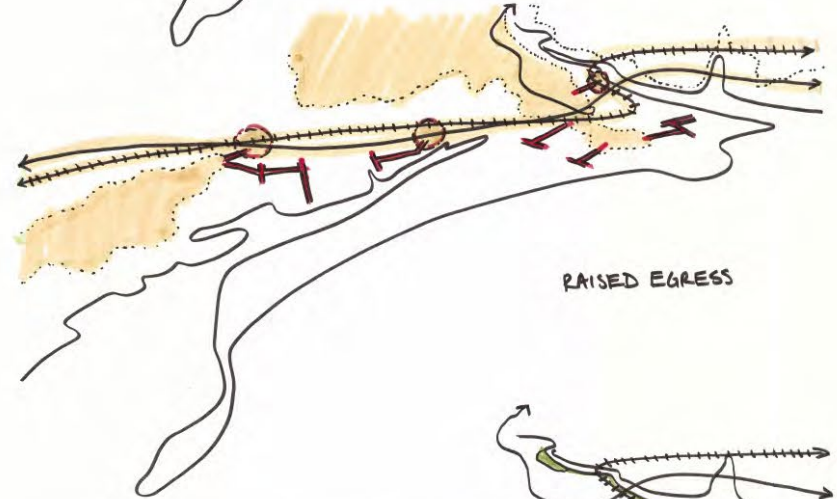0   500   1,000   2,000   3,000

DEVELOPMENT
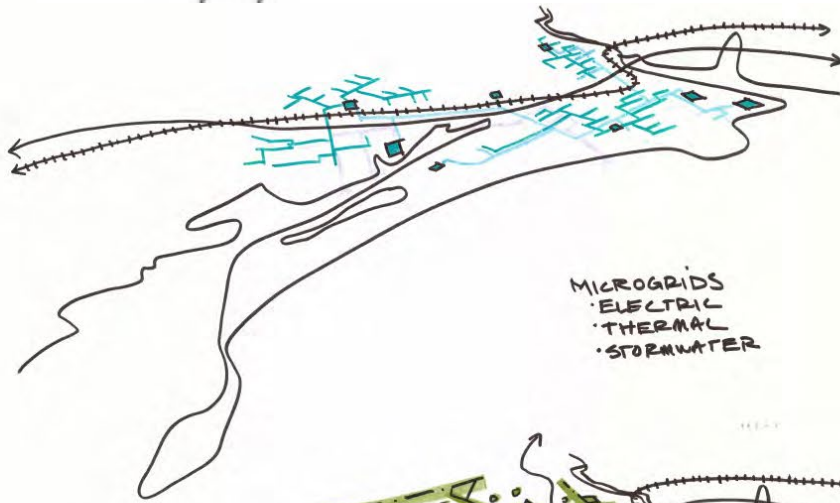
MICROGRIDS
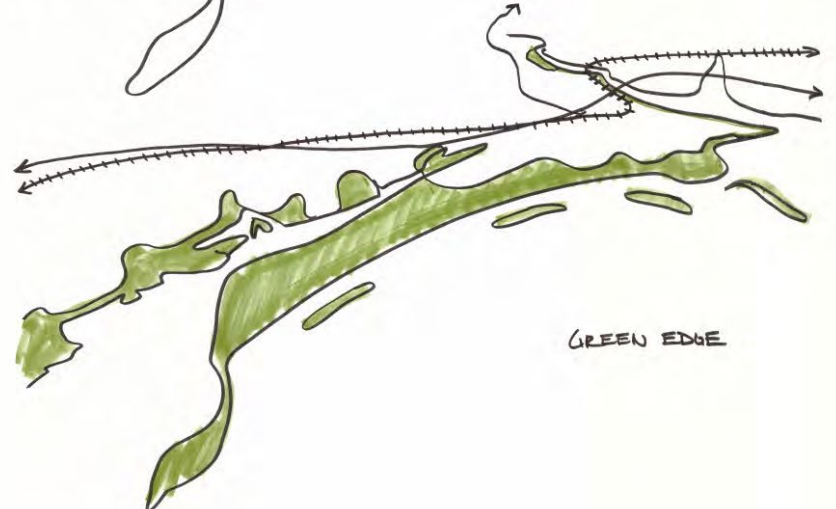· ELECTRIC
· THERMAL
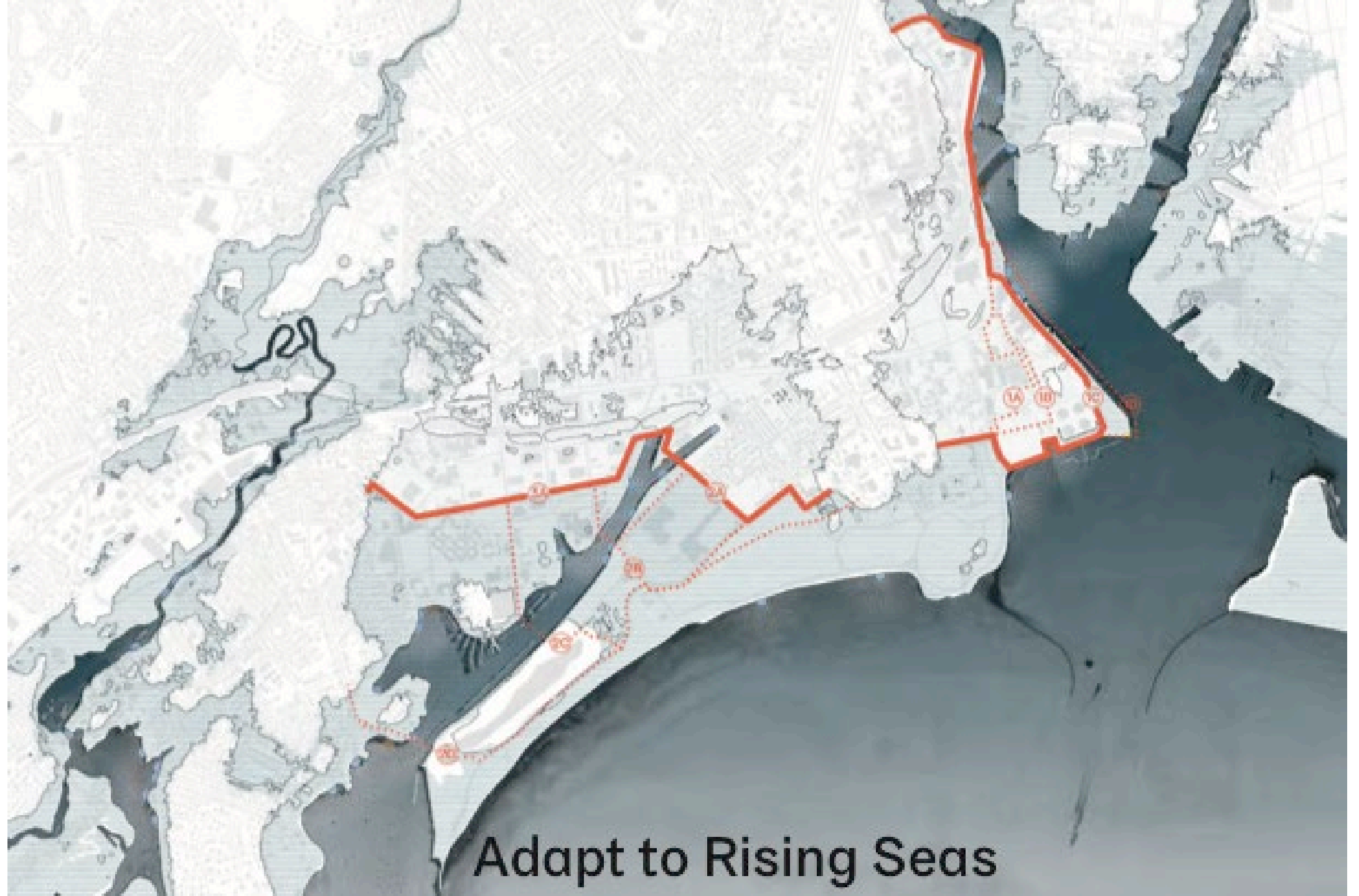· STORMWATER
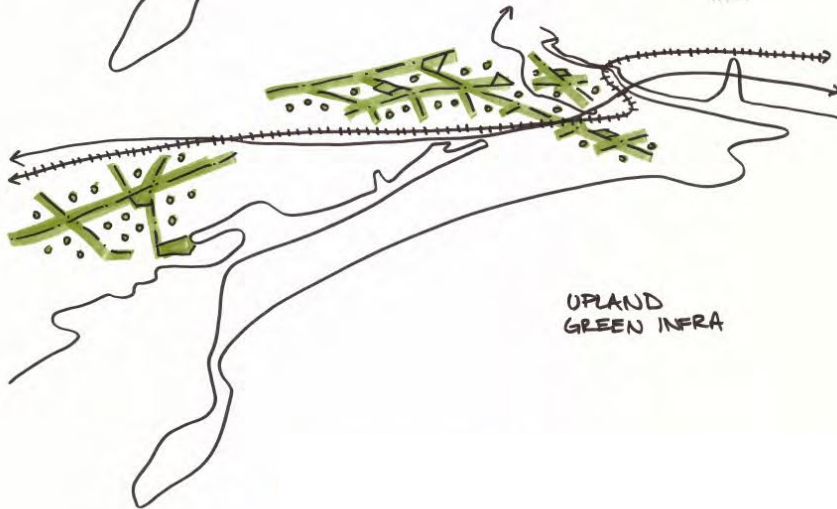
UPLAND
GREEN INFRA
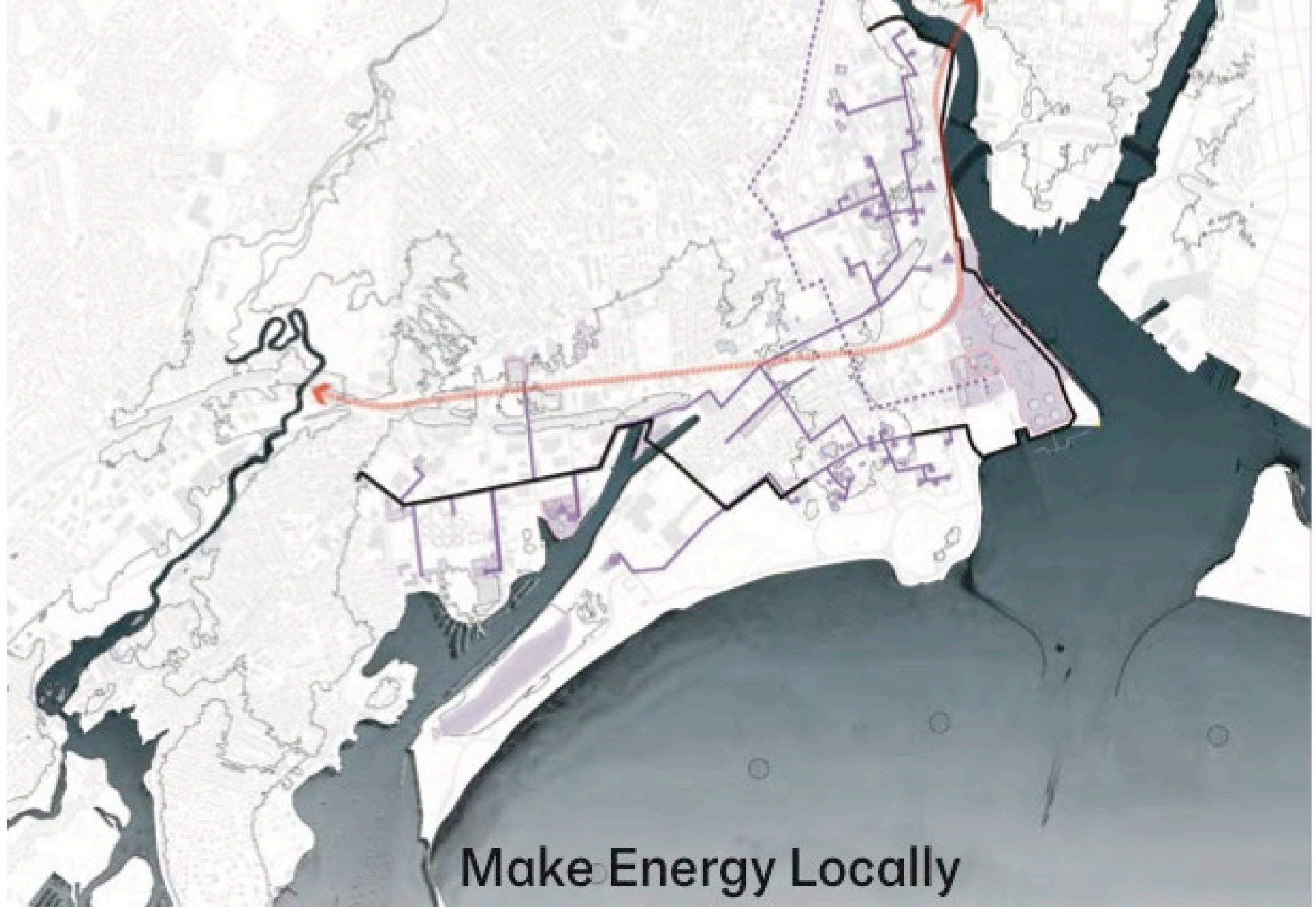
PERIMETER
SURGE PROTECTION

RAISED EGRESS

GREEN EDGE

Restore the Edge

Adapt to Rising Seas

Delay and Convey Stormwater

Make Energy Locally

Access & Egress

RAILROAD

FAIRFIELD AVE

I-95

PINE ST

NORDEN AVE

SIKORSKY SITE

SEASIDE PARK

HARBOR

1

2

3

4

5

2A

2B

2C

NEW STORMWAT[ER]

RAISED DRY [&]
ACCESS ROAD

GREEN STREET

JOHNSON ST. EXTENSION

PUMP ENCLOSURE

PUMP

GREEN STREET

GRAVITY STORM DRAIN

FORCE MAIN

OUTFALL CONNECTION

National Disaster Resilience Competition

TWO-PHASE COMPETITION PROCESS

Phase 1
[Framing Unmet Recovery Needs, Vulnerabilities, and Community Development Objectives]

NOFA PUBLISHED 9/17/2014

180 DAYS (~6 MONTHS)

PHASE 1 APPLICATION DEADLINE 3/16/2015

60 DAYS (~2 MONTHS)

PHASE 1 REVIEW PERIOD

PHASE 1 WINNERS ANNOUNCED June 2015*

120 DAYS (~4 MONTHS)

Highest-Scoring Phase 1 winners advance to Phase 2

Phase 2
[From Framing to Implementation]

PHASE 2 APPLICATION DEADLINE October 2015*

60 DAYS (~2 MONTHS)

PHASE 2 REVIEW PERIOD

PHASE 2 WINNERS ANNOUNCED December 2015*

FUNDS AWARDED December 2015*

*Note: These dates are tentative and subject to change at HUD's discretion

ELIGIBLE APPLICANTS

STATES, DISTRICTS, AND TERRITORIES

1. Alaska
2. Alabama
3. Arkansas
4. Arizona
5. California
6. Colorado
7. Connecticut
8. District of Columbia
9. Delaware
10. Florida
11. Georgia
12. Hawaii
13. Iowa
14. Idaho
15. Illinois
16. Indiana
17. Kansas
18. Kentucky
19. Louisiana
20. Massachusetts
21. Maryland
22. Maine
23. Michigan
24. Minnesota
25. Missouri
26. Mississippi
27. Montana
28. North Carolina
29. North Dakota
30. Nebraska
31. New Hampshire
32. New Jersey
33. New Mexico
34. New York
35. Ohio
36. Oklahoma
37. Oregon
38. Pennsylvania
39. Puerto Rico
40. Rhode Island
41. South Dakota
42. Tennessee
43. Texas
44. Utah
45. Virginia
46. Vermont
47. Washington
48. Wisconsin
49. West Virginia
50. Wyoming

CITIES AND COUNTIES

1. Birmingham, Alabama
2. Jefferson County, Alabama
3. Tuscaloosa, Alabama
4. Chicago, Illinois
5. Cook County, Illinois
6. Du Page County, Illinois
7. Jefferson Parish, Louisiana
8. New Orleans, Louisiana
9. St. Tammany Parish, Louisiana
10. Springfield, Massachusetts
11. Joplin, Missouri
12. Minot, North Dakota
13. New York City, New York
14. Moore, Oklahoma
15. Dauphin County, Pennsylvania
16. Luzerne County, Pennsylvania
17. Shelby County, Tennessee

ELIGIBILITY MAP

■ Eligible State ■ Ineligible State ● Eligible City or County

FUNDING INFORMATION

Phase 1
Phase 1 applicants that are not invited to continue to Phase 2, but which met all the requirements of the NOFA, are eligible to receive CDBG-DR funds totaling up to $2.5 million (for applicants that are not current CDBG-DR grantees under P.L. 113-2) or $500,000 (for current grantees under P.L. 113-2). HUD will award up to $30 million of the total funding availability to such applicants. Any reserve pool funds not awarded at this stage will be allocated in a similar manner following Phase 2 to any applicants meeting the same criteria.

Phase 2
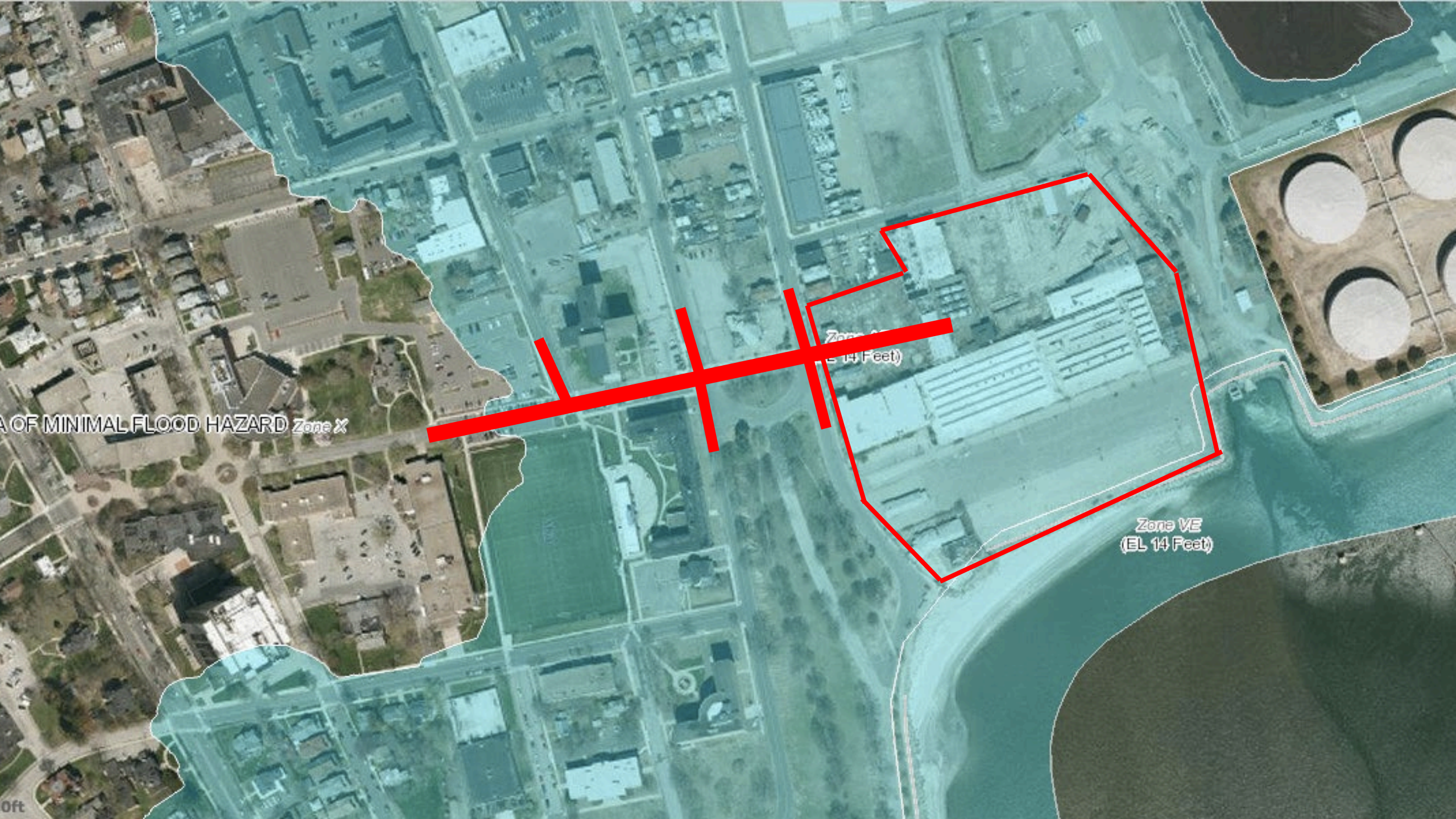For Phase 2, the minimum award amount is $1,000,000 and the maximum is $500,000,000.
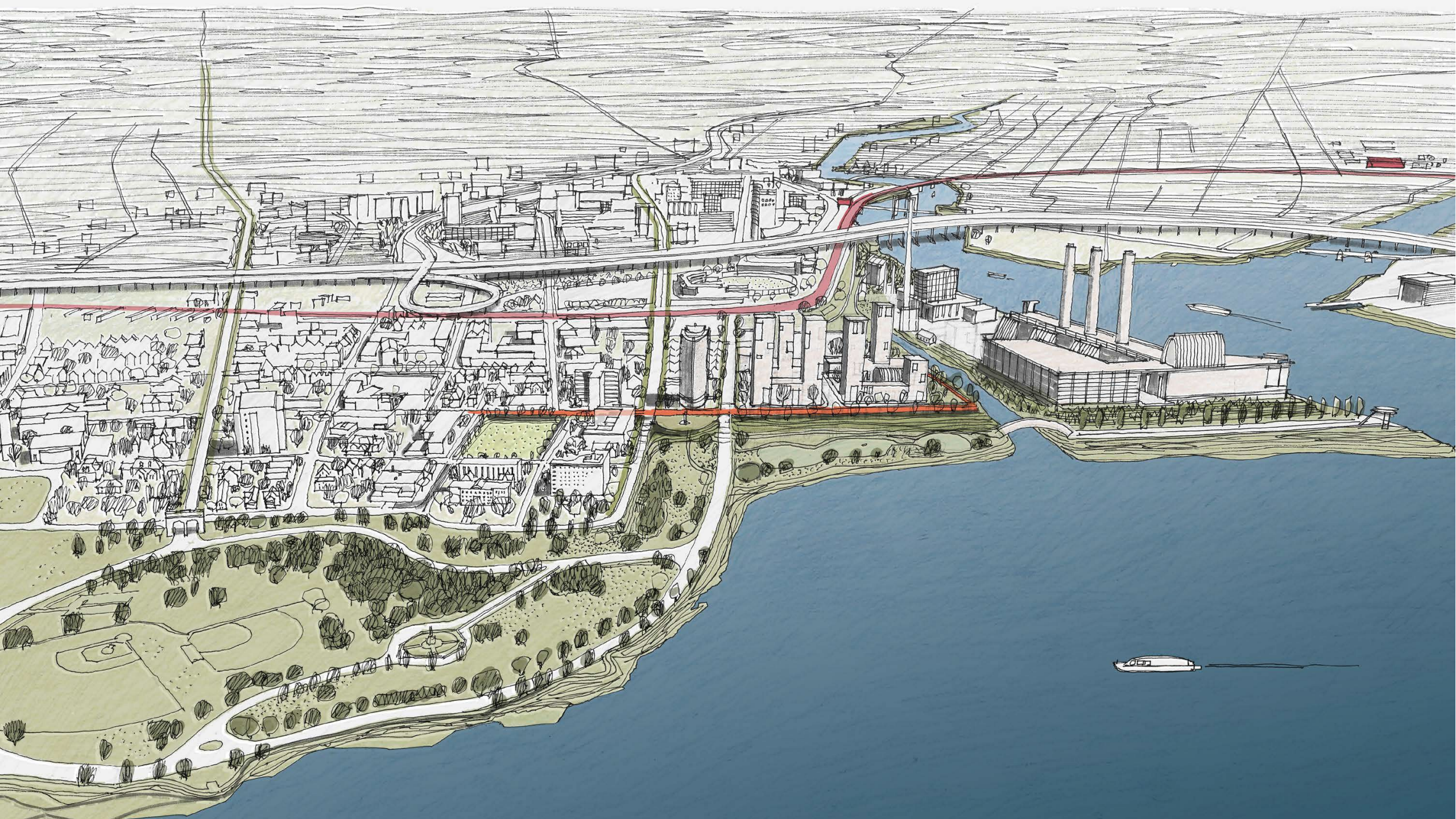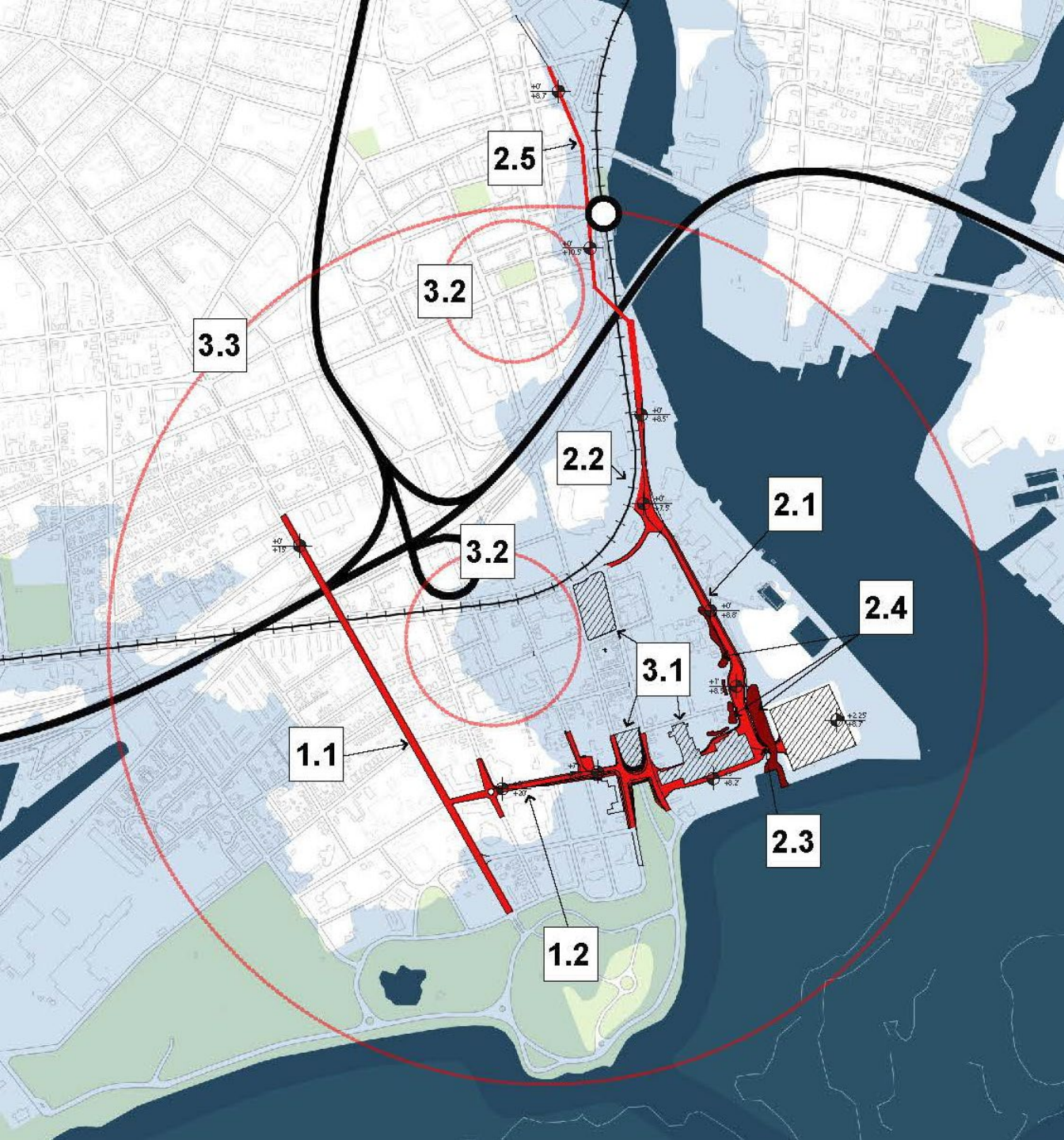
1 – University Avenue raised resilient corridor

2 – Earthen berm, greenway, and outfall park

3.1 – Floodplain design guidelines

3.2 – Community Resilience Design Center

3.3 – District energy study

UI

PSEG

1C

1D

1B

1A

EMERA

RAILROAD

I-95

2

1

PSEG HARBOR
UNIT 6

60 MAIN

UNIVERSITY OF
BRIDGEPORT

PEQUONNOCK
RIVER

~$54 MILLION AWARD

AREA OF MINIMAL FLOOD HAZARD Zone X

Zone VE
(EL 14 Feet)

0ft

A OF MINIMAL FLOOD HAZARD Zone X

Zone AE
(EL 14 Feet)

Zone VE
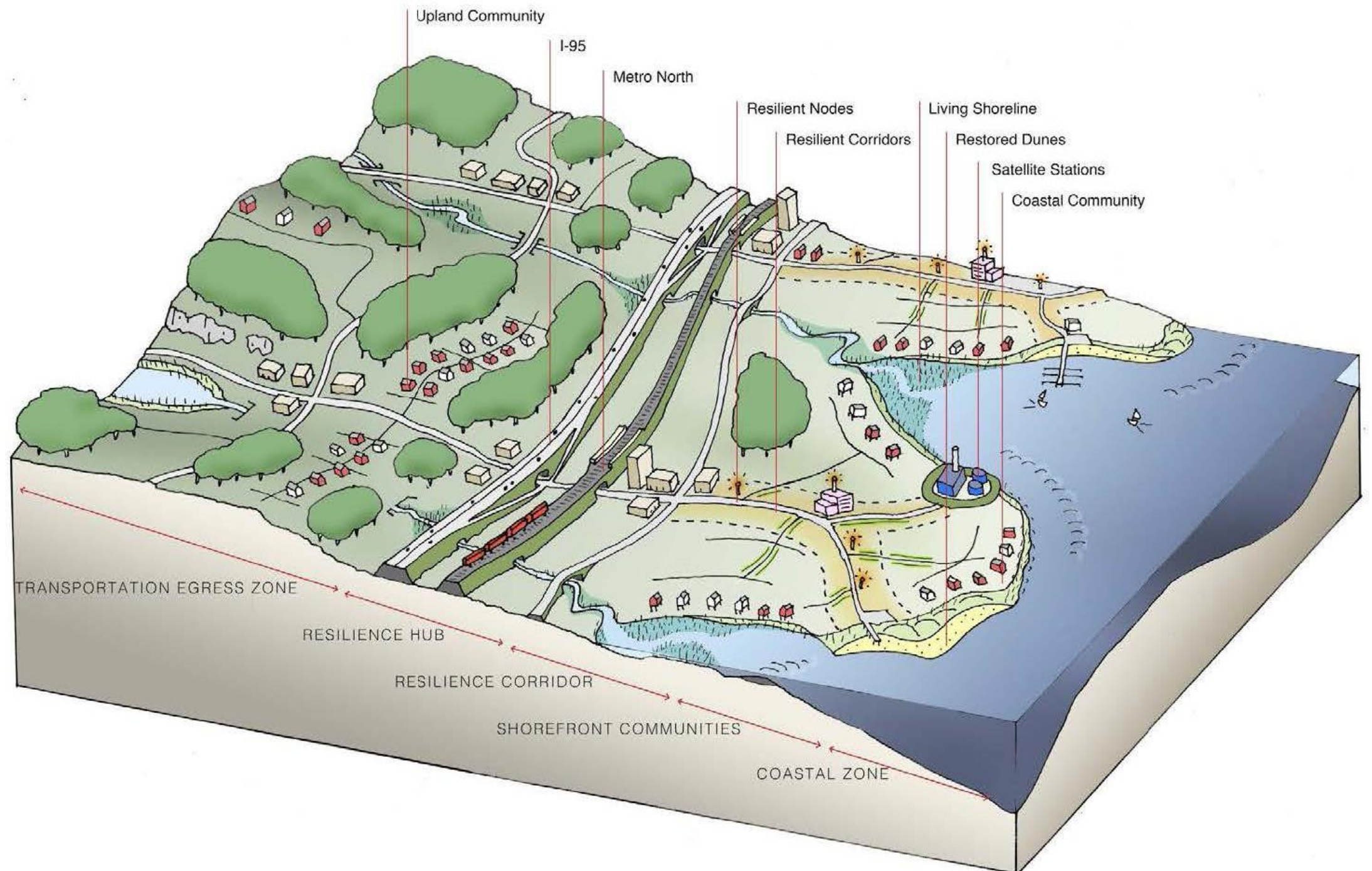(EL 14 Feet)

CONNECTICUT CONNECTIONS

Upland Community

I-95

Metro North

Resilient Nodes

Resilient Corridors

Living Shoreline

Restored Dunes

Satellite Stations

Coastal Community

TRANSPORTATION EGRESS ZONE

RESILIENCE HUB

RESILIENCE CORRIDOR

SHOREFRONT COMMUNITIES

COASTAL ZONE

Transit-Oriented
Development Nodes
+ Green infrastructure

Emergency
Response
Facility

Shorefront
Community

Unmet
Housing
Need

Interstate 84

Merritt Pkwy

15

U.S. Route 1

Interstate 95

← New York

Metro North
Railroad

← New York

HIGH GROUND ISLAND

Resilience Corridor

COASTAL ZONE

LONG ISLAND SOUND

Critical
Infrastructure

Connector Road

FLOOD RISK ZONE

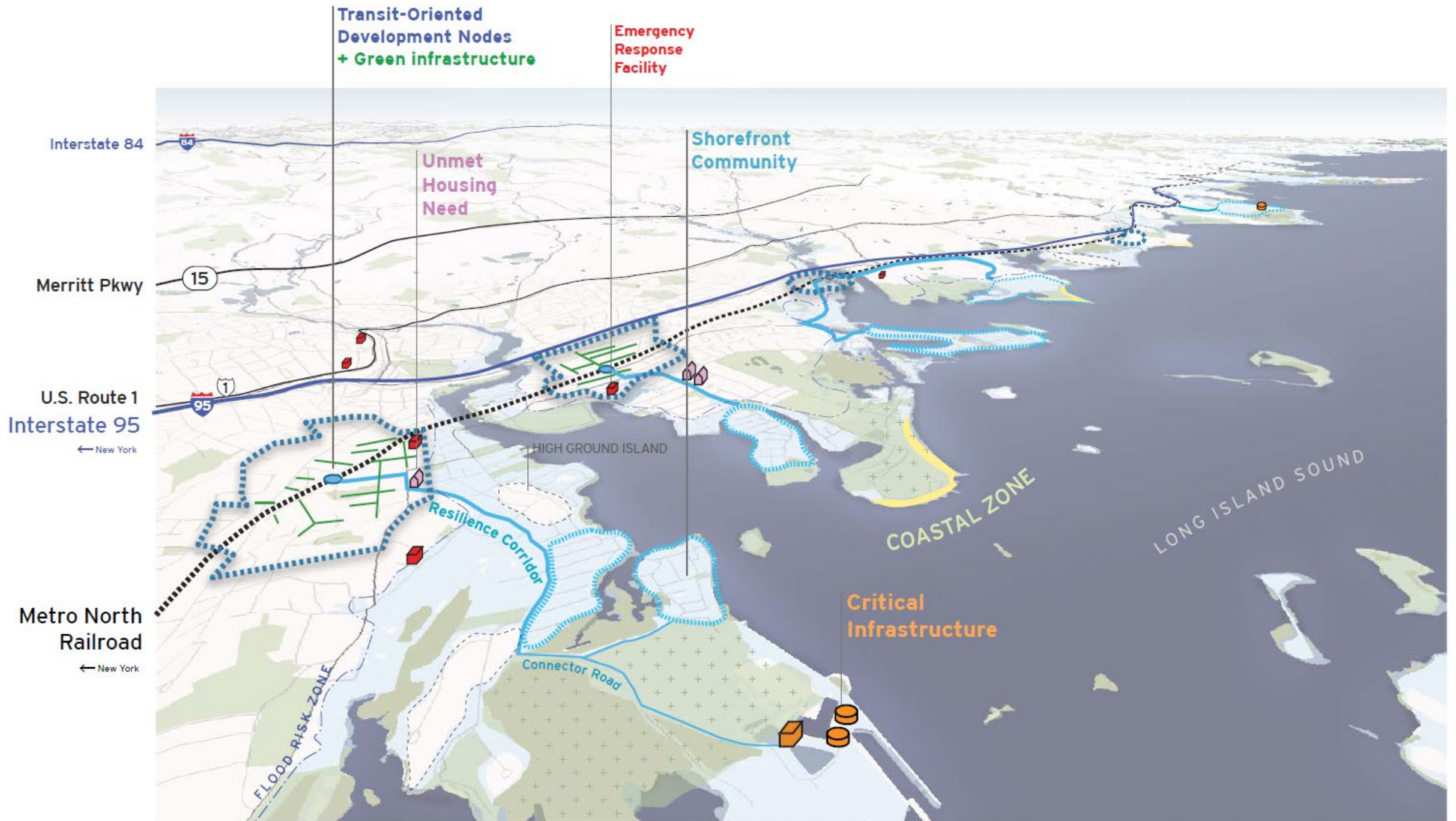# SAFR Council

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Mobile: 860-841-0306