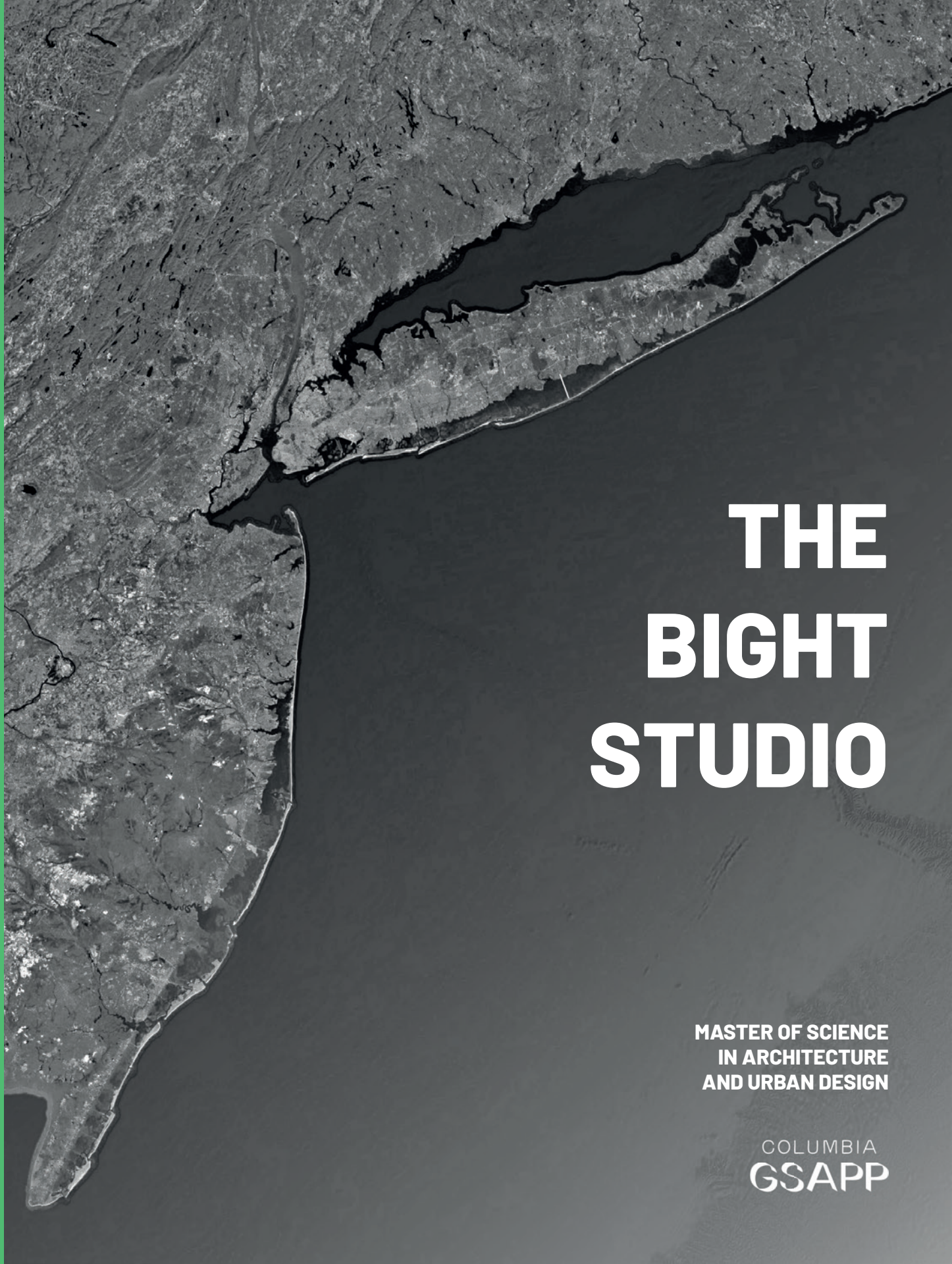


THE BIGHT STUDIO

MASTER OF SCIENCE IN ARCHITECTURE AND URBAN DESIGN

COLUMBIA GSAPP

REGIONAL URBAN DESIGN STUDIO

-

Pine Barrens,
Power Brokers,
Development and Displacement
on the World's Most Contested Coastline

-

“The hope of the city lies outside itself. Focus your attention on the cities — in which more than half of us live — and the future is dismal. But lay aside the magnifying glass which reveals, for example, the hopelessness of Broadway and Forty-Second Street, take up a reducing glass, and look at the entire region in which New York lies. The city falls into focus. Forests in the hill counties, waterpower in the mid-state valleys, farmland in Connecticut, cranberry bogs in New Jersey, enter the picture. To think of all these acres as merely tributary to New York, to trace and strengthen the lines of the web in which the spider city sits unchallenged, is again to miss the clue. But to think of the region as a whole and the city merely as one of its parts—that may hold promise.“

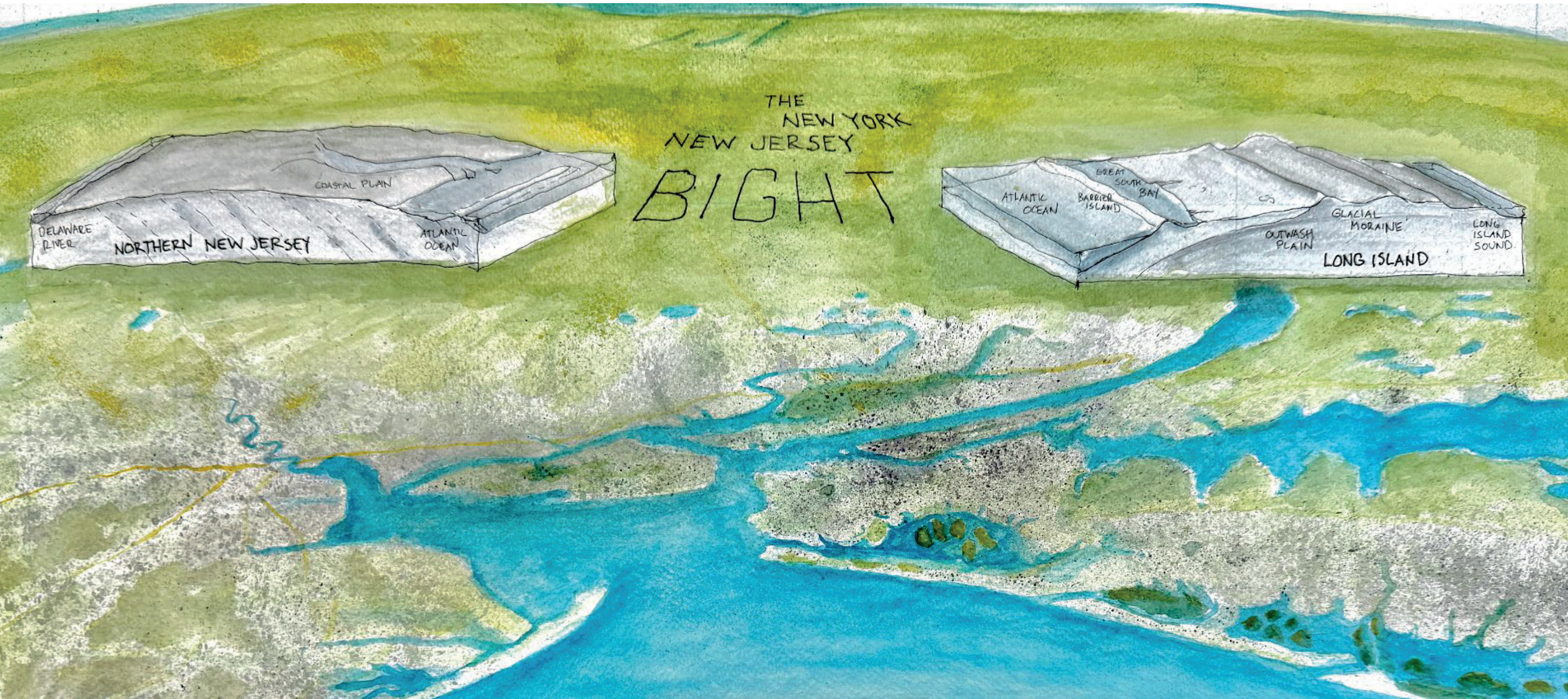
Lewis Mumford,
The Regional Framework For Civilization

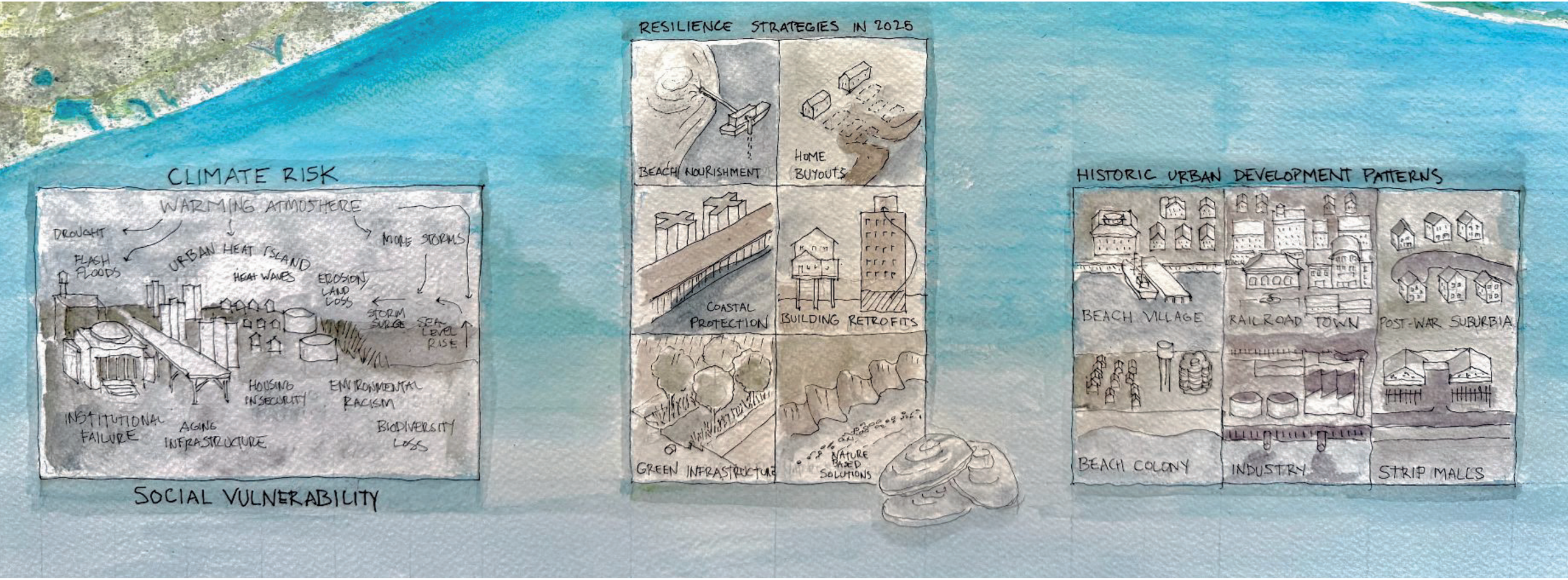
WHERE AND HOW CAN WE GROW?

AGENDA

WHERE AND HOW DO WE MANAGE LOSS?

UNDERSTANDING HISTORY





TO IMAGINE A BETTER FUTURE

“Robert Moses may have moved more earth than any human in history, but he was not a movement. Movements also build. Movements have built nations, have cultivated transformative ideals like democracy, and driven innovation in science and technology. Individuals with dictatorial tendencies like Moses, are limited by their ambition, because it always comes down to serving one person—themselves. But movements keep growing, serving more people, building hope and trust instead of fear.”

Thaddeus Pawlowski

INSTRUCTORS

Thaddeus Pawlowski

Frank Ruchala, Jr.

Nadine Maleh

Christopher Kroner

Julia Murphy

Candelaria Mas Pohmajevic

TEACHING ASSOCIATE

Bria Miller

TEACHING ASSISTANTS

Samantha Nowak

Yi-Jou (Zoe) Lin

Susana Chinchilla

Yung-Hsiang Yang

Dzormo Naa Cofie

STUDIO OBJECTIVES

-What we will achieve together?

- **Confront the twin crises of housing affordability and climate change, especially their combined effects of economic insecurity and displacement.**
- **Research patterns, stories, and situations of development and displacement on the South Shore of Long Island and Coastal New Jersey.**
- **Review precedents of housing typologies, policies, and funding mechanisms from other regions of the United States.**
- **Develop long term scenarios for future "climate resilient development pathways" at a regional scale.**
- **Visualize site-specific housing, landscape, and infrastructure strategies.**
- **Produce roadmaps for the implementation of these strategies.**
- **Map power dynamics and identify the stakeholders of the housing building industry and coastal transformation within the NYC metro region.**

THE HOUSING CRISIS

The United States faces a critical problem of inadequate and unaffordable housing that disproportionately affects low-income families, people of color, and individuals experiencing homelessness. The escalating unaffordability of housing, particularly the "missing middle," has been the primary driver of the rapidly widening wealth gap and the disappearance of the middle class. Owning a home was once perceived as a bedrock of social mobility, the "American Dream," but now that goal is out of reach for most people in the United States, even professional double-salaried families. According to a recent survey, 82% of Gen Z believe homeownership is unattainable.[1] The lack of affordable housing is endemic in both urban and rural areas. The United States currently lacks 3.8 million available and affordable housing units, and over 8 million extremely low-income households spend more than 50% of their income on housing, putting them at a high risk of housing instability and homelessness.

The New York City metropolitan region, encompassing New York City, New Jersey, and Long Island, is grappling with a severe and multifaceted housing crisis that has intensified between 2023 and 2025. Characterized by critically low rental vacancy rates, escalating housing costs, and a dramatic rise in homelessness, the region's housing market poses significant challenges to residents across all income strata. Decades of underbuilding, coupled with restrictive zoning policies and a widening gap between wages and housing expenses, have created an unsustainable environment. While various policy initiatives are underway, particularly in New York City - "City of Yes" - their effectiveness can be hampered by inherent structural barriers, community resistance, and the sheer scale of the deficit.

Exacerbated by the high cost of living in the region, this condition forces longer work commutes, overcrowded or unhealthy living situations, and can lead to homelessness.

The underlying causes of the housing crisis in the region can be attributed to supply shortage, sluggish growth in wages, and restrictive land use policies (a reaction to past failures of Urban Renewal). The effects of the crisis are felt most by low and middle income populations, especially racial and ethnic minorities. Housing insecurity affects health outcomes, stymies personal growth, and fractures communities and social bonds.

A recent analysis conducted by McKinsey & Company for Regional Plan Association shows that the region may face a housing gap of 920,000 units by 2035. The analysis also highlights a current shortage of 540,000 housing units in the region. To keep pace with this demand, the region would have to engage in housing production at the scale of the post-World War II era, when newly-constructed interstate highways opened vast tracts of land for single-family homes, and the mortgage subsidy and GI Bill helped (mostly white) middle-class people buy those homes. This megapolitan expansion left many cities struggling with the legacy of red-lining and failing infrastructure. As most would agree, suburbanization driven by fossil-fuel consumption and racism is not a pattern that should be repeated.

What does housing production at the necessary scale look like today in the era of climate change, historic levels of inequality, starkly divided views on governance, and mental and physical health crises?

-

1. Homeownership Data Statistics 2024 - IPX1031

LEARNING OBJECTIVES

- What will you take away from the studio?

- **Understand and interrogate the regulatory and policy environment that limit dense, mixed-use developments; and leverage design practice to create an enabling environment for action.**
- **Understand historic regional development pathways, especially the influence of climate, landscape, and infrastructure on the built environment.**
- **Nurture a refined and crisp design vocabulary to visualize and communicate Design-Driven "Climate-Resilient" Development Pathways.**
- **Leverage communities of knowledge to inform design on a regional scale.**
- **Develop urban design propositions manifest at multiple scales across multiple sectors including housing, infrastructure, energy, water, lifestyle, and food.**
- **Design with care for nature, health and wellbeing, social and cultural context, and reduced embodied carbon.**
- **Build empathy and understanding for who we are working for and why we are doing this work.**

THE POWER BROKER, ROBERT MOSES AND THE FALL OF NEW YORK BY ROBERT CARO

Last year was the 50th anniversary of the publication of The Power Broker, an occasion that has inspired many urban designers to reevaluate what we can learn from this book in our times. The legacy of Robert Moses, New York's most aggressive builder, is all around us today and has been instrumental in creating many of the challenges urban designers face. Robert Caro's book about him is a roadmap to understanding the systems of power that shape our built environment.

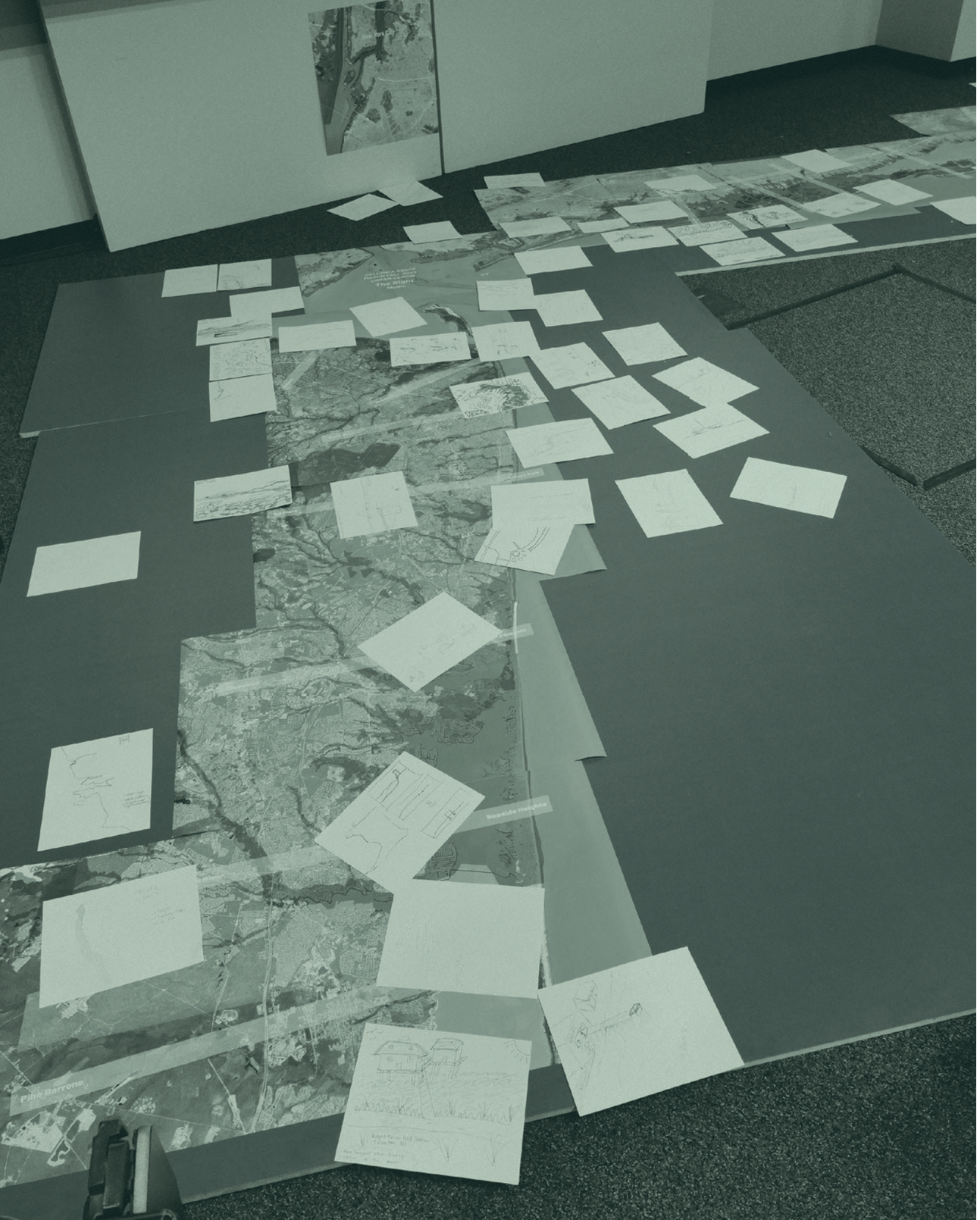
Robert Caro estimated that Moses's highway construction and urban renewal projects displaced about 500,000 people over his four decades in power, which has led to intergenerational housing insecurity throughout the city. His projects also buried whole and irreplaceable ecosystems, erasing millennia of accumulated biodiversity, locking the City into an inescapable urban heat island, and choking off natural drainage systems leading to constant localized flooding. Moses's car-centric regional planning sponsored suburban expansion and indefinite dependence on fossil fuels, a pattern which has been replicated in every global metropolis and is perhaps the primary driver of the global climate crisis. His centralized control of the machinery of city building inspired a generation of policymakers to create many of the rules and procedures that govern land use and infrastructure today, especially environmental review and land use reviews. These rules and procedures are often blamed for the housing crisis and the sluggishness with which any urban improvements happen today.

Caro offers a critique of Moses and advice for urban designers working on resilient cities. He exhorts future city builders to know the people and the place before you changing it. He gives value to human communities and ecosystems. He also emphasizes, as critique of Moses's authoritarian character, the ability to learn from your mistakes and listen to your critics. In the first semester of the MSAUD program, students learned about one of his most ardent critics, Jane Jacobs, who made compelling arguments for preserving the human scale of walkable cities. In this semester, the class considers another of Moses's critics, the philosopher Lewis Mumford. Mumford believed that modern cities were spiraling toward social and ecological disaster. His theory of "megatechnics," machines which control humans, presaged our current debates about artificial intelligence and the surveillance economy. He advocated for "biotechnics," ways of accomplishing human needs in harmony with nature. He also believed that collectives of people are wiser than individuals, a view which remains controversial in our current politics.

CONTEXT OF ENVIRONMENTAL CRISES AND SOCIAL UPHEAVAL

Across the New York metropolitan region — from Long Island's South Shore to the tidal marshes of New Jersey — we face a double emergency: an accelerating ecological crisis and widening social upheaval. Intensifying flash floods and more frequent coastal storms, together with ongoing sea-level rise, are exposing aging infrastructure and amplifying displacement pressures in neighborhoods that have faced systemic disinvestment. At the same time, heat waves, episodic drought and even wildfire smoke now reach into suburban and exurban communities, multiplying health risks and stressing energy and water systems. These environmental shocks compound entrenched environmental justice problems — higher asthma and chronic-illness burdens, food insecurity, and the social-determinants-of-health effects produced by segregated housing and underresourced neighborhoods — so that vulnerability is unevenly distributed across race and class. Institutional capacity to manage these converging crises is fraying: emergency response, scientific agencies, and regulatory bodies face political headwinds and resource constraints that complicate coordinated regional action.

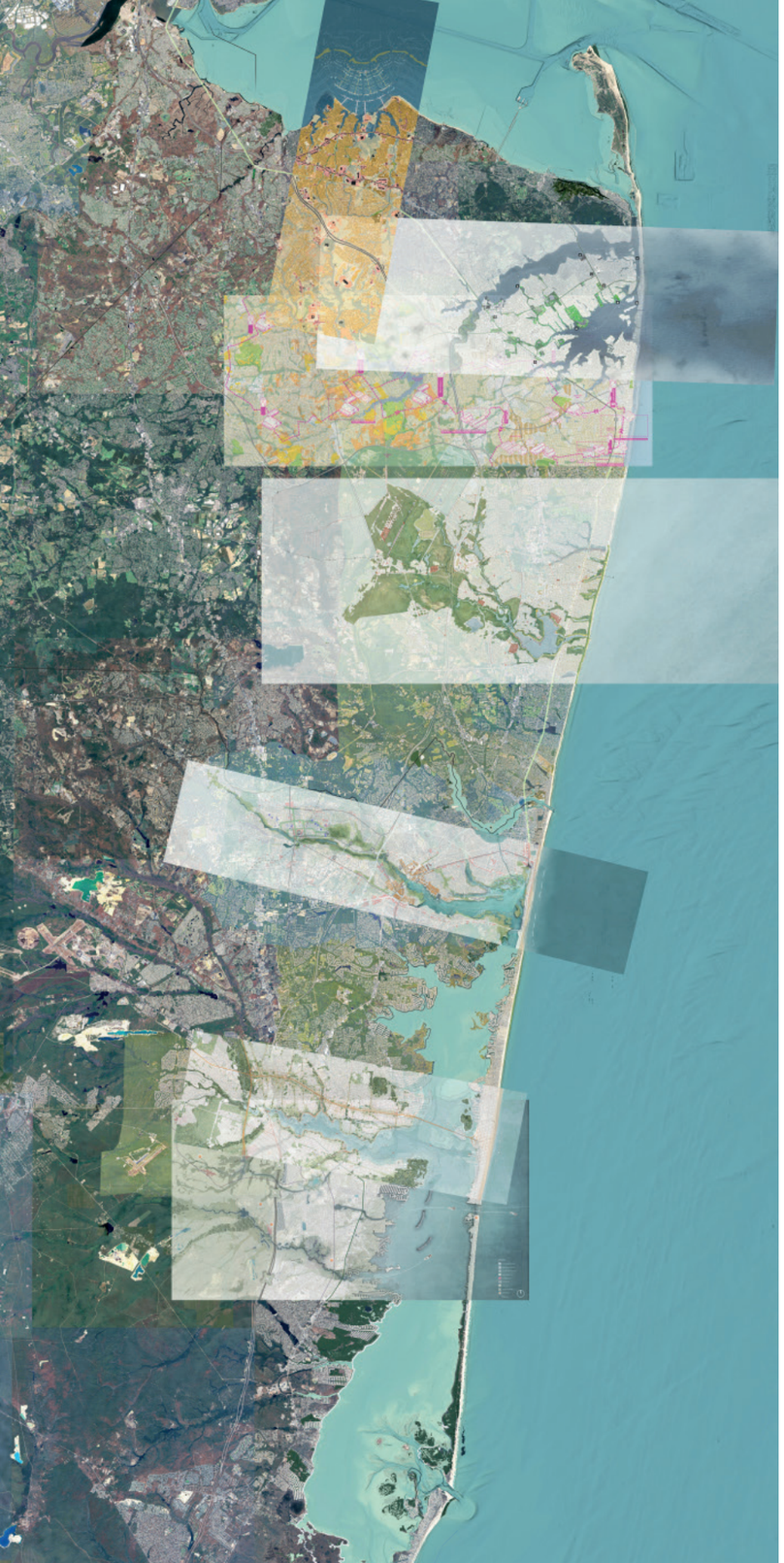
The coastline's long history of loss and renewal offers a lesson in adaptive design: living shorelines, managed retreat in the most vulnerable places, and regionally coordinated land-use strategies suggest that resilient urban development must be relational (linking city and countryside), equity-driven, and iterative rather than purely technological. This course draws on the Regional Plan Association, the Furman Center, Harvard's Joint Center for Housing Studies, the NYC Panel on Climate Change, and local public-health and environmental justice reports to ground policy proposals in up-to-date evidence and to assess both governance failures and practical pathways for a more just, resilient region.



THE BIGHT

The New York-New Jersey Bight refers to the angle created by the coastlines of northern New Jersey and southern New York. Meteorologists have noted that this geographic feature makes the densely populated area in and around New York City particularly vulnerable to tropical-storm-generated storm surge. In 2012, Hurricane Sandy crashed into the Bight, causing billions in damage, displacing tens of thousands of people, and causing dozens of deaths across the region. In 2022, the Biden administration designated the continental shelf off the Bight as an "offshore wind zone," but the fate of all future renewable energy projects is not clear in the current political landscape.

Another way to look at the Bight is as the borderland between the urbanized land and the vast wilderness of the ocean, but this does not sufficiently describe the wildness of the land and the human impression on the ocean. For many, the shoreline remains a contested boundary between what we regard as civilization and nature, two ideas without fixed meaning. We understand that the constriction of freshwater and sediment from the rivers, and the dumping of chemicals from farms, factories, and housing, have altered the chemistry of the biosphere, and its vast engine of life, the ocean. We shape and are shaped by the ocean.



New Jersey

New Jersey is the most densely populated U.S. state. The beach towns, boardwalks, and expensive second homes strung along "The Jersey Shore" are the most popular summer destination for the mid-Atlantic states, and loom large in the public imagination as a place of escape from the city. The coast's geography is varied: a mix of barrier islands, headlands, and inland bays. Hurricane Sandy's ravages can still be seen here more than 12 years later. But so can the wholesale revitalization (gentrification?) of once-downtrodden towns like Asbury Park, the town made famous in the music of "The Boss" Bruce Springsteen.

Springsteen's lyrics paint a broad and complicated picture of this area. He grew up 15 miles inland from the coast in the farm town of Freehold. After World War II, and gaining more steam since the 2000s, the inland areas have exploded with suburban sprawl. As of 2020, more than one million people live in the two counties (Monmouth and Ocean) that make up the northern half of the Bight. Ocean County, particularly, is the fastest-growing region of New Jersey. Still, the area has seen housing costs skyrocket. This has been particularly caused by people from elsewhere in the region moving here to take advantage of its relatively lower housing costs. Traffic, driven largely by automobile dependence, continues to worsen each year. Unlike Long Island, which has blessed with multiple railroad lines, Ocean County has just one train line far from most of the region's recent and expected growth.

The Jersey Shore is surrounded by a great variety of coastal ecologies and settlements.. Military bases dot the region (the Hindenburg exploded here!), driving the overall "conservative" leaning here. Pockets of farmland remain, but even these are being transformed into expensive horse farms. The office complex made famous in the television show "Severance" is here. Lakewood, down south, has become a major center of Orthodox Judaism. Finally, at the southern edge, sprawl gives way to the mysterious Pine Barrens - the largest remaining open space in the entire Northeast megaregion.

"For a transitory enchanted moment man must have held his breath in the presence of this continent, compelled into an aesthetic contemplation he neither understood nor desired, face to face for the last time in history with something commensurate to his capacity for wonder."

F. Scott Fitzgerald, The Great Gatsby

Long Island

American poet Walt Whitman wrote poems about Paumonock, using the Lenape name for his native Long Island. In "Leaves of Grass," he praised the landscape and people of this "fish shaped island" that stretches 120 miles east into the ocean from New York City. Long Island was created by a glacier 20,000 years ago. The central ridges of the island mark the edge of the ice sheet's advance, beyond which the glacial outwash created the gentle slope of Long Island's south shore, the Great South Bay, numerous lakes, kettle ponds and streams. Long Island's geography, stores of freshwater in its aquifers, diverse flora and fauna, rich soils, and most importantly, bountiful ocean all around have made it prized home of many generations of people throughout human history. European colonization beginning in the 17th century began a period of radical landscape and social transformation. As the indigenous people were pushed out, the area became home to farmers, fishers and whalers.

In the 19th century, due to the construction of railroads, part of Long island began to rapidly urbanize. The North Shore became reserved for the estates of the Robber Barons of the Gilded Age—Morgans, Vanderbilts and Rockefellers—as memorialized in F. Scott Fitzgerald's novel. Long Island's most rapid period of urbanization came with the early works of Robert Moses including the construction of: the Northern State Parkway (1925), the Southern State Parkway (1927), and the construction of Jones Beach (1929). The rapid acceleration of highway construction led to a building boom in the post World War II era, especially car-centric suburbs like Levittown (1947). Many of these new suburbs were populated by middle class families fleeing the city, a phenomenon that came to be known as "white flight." Many of the new suburbs adopted racist zoning policies and other means of discriminating against minorities seeking affordable housing, such as deed restrictions.

Today, Long Island remains car-dependent and segregated, and there is a clear socio-economic division between the North Shore and the South Shore, and pockets of extreme privilege (the Hamptons) and persistent poverty (Hempstead). Nonetheless, Long Island continues to attract people pursuing the American dream, particularly new immigrants. In the last census, 19% of Long Islanders were born outside of the United States. The island's proximity to New York City allows residents to dream big, but structural inequality keeps those dreams out of reach for many.

ASSIGNMENT 0: INDIVIDUAL STORIES OF REGIONS

-

Each of the 56 students produced one drawing and a short essay describing the region or regions that shaped their lives.

-

ASSIGNMENT 0: INDIVIDUAL STORIES OF REGIONS

ASSIGNMENT 1:
COASTAL CASE STUDIES

-

Mapping Patterns of Development and Displacement

-

ASSIGNMENT 1: COASTAL CASE STUDIES

From The Coastal United States
14 Case Studies

Puget Sound, WA

San Francisco Bay, CA

South Coast, CA

Houston–Galveston, TX

Gulf Coast
(New Orleans, LA; Biloxi, MS; Mobile, AL)

Florida Gulf Coast
(St. Petersburg, Tampa)

Miami and Florida Keys, FL

Bluffton, Beaufort, Charleston, SC

Savannah, Sapelo Island, Darien, GA

Jacksonville, FL

Chesapeake Bay
(Norfolk, Virginia Beach, VA; Baltimore, MD)

North Carolina Outer Banks

New England
(Boston, MA; Providence, RI; Bridgeport, CT)

Anchorage, Alaska

0 100 200
(mi)

Lakes and Reservoirs

Major Rivers

Secondary Rivers

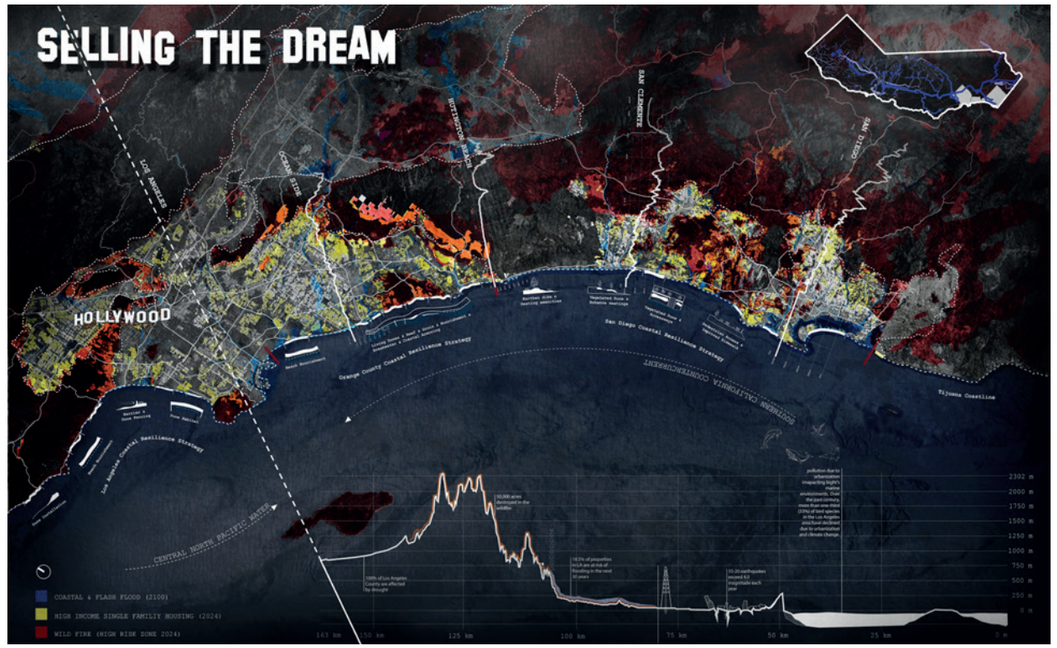
Minor Rivers

Through this assignment, students will research, map and analyze regional patterns of development and displacement in coastal regions in the United States. What geomorphological processes shaped this place? What economic and political forces wielded power and influence over time? Which groups have been included and who has been left out? How has the production of housing and infrastructure evolved? What types of housing typologies were developed, which were not? Why? What institutions and systems have evolved to care for people and nature? How has the place shaped human culture and experience? What climate adaptation plans, policies, and projects are being implemented?

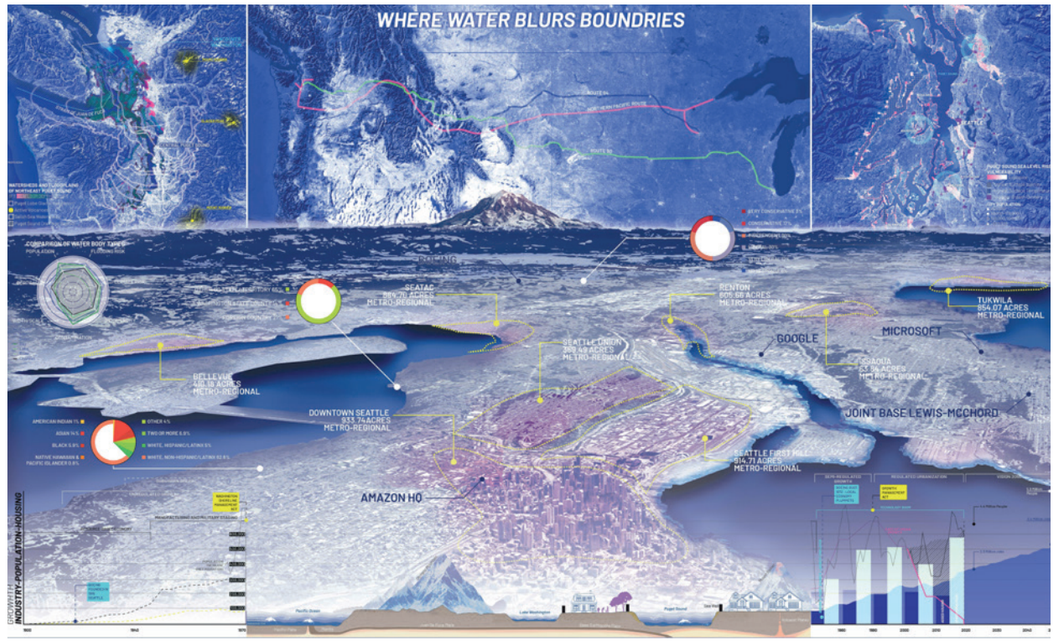
0 250
(mi)

FROM THE COASTAL UNITED STATES
14 CASE STUDIES

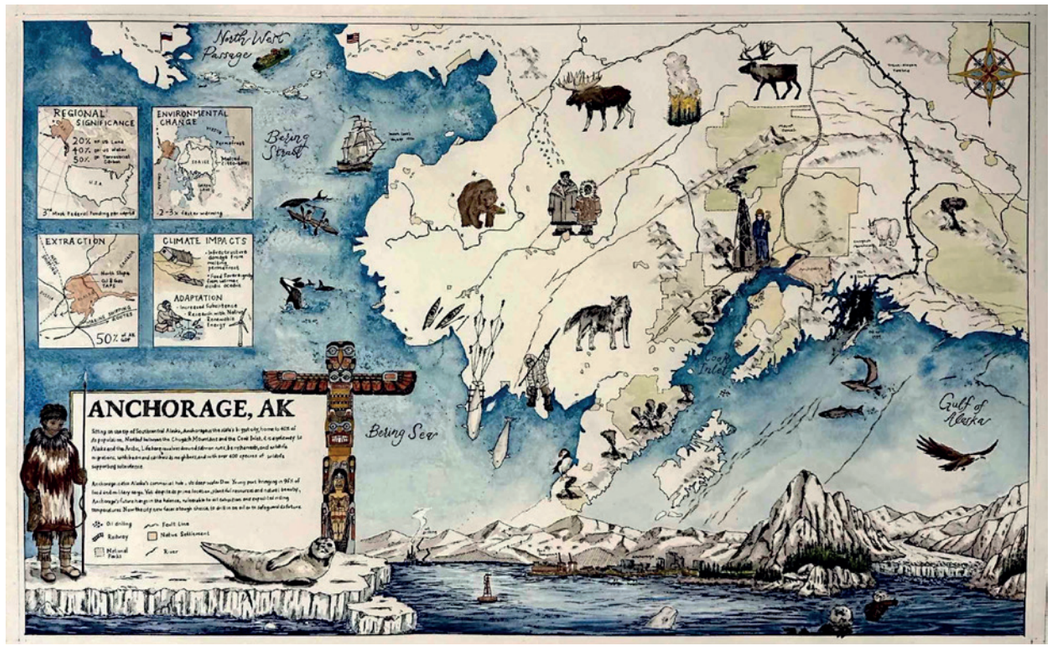
Students researched, mapped, and analyzed regional patterns of development and displacement in coastal regions in the United States. What geomorphological processes shaped this place? What economic and political forces wielded power and influence over time? Which groups have been included and who has been left out? How has the production of housing and infrastructure evolved? What types of housing typologies were developed, which were not? Why? What institutions and systems have evolved to care for people and nature? How has the place shaped human culture and experience? What climate adaptation plans, policies, and projects are being implemented?



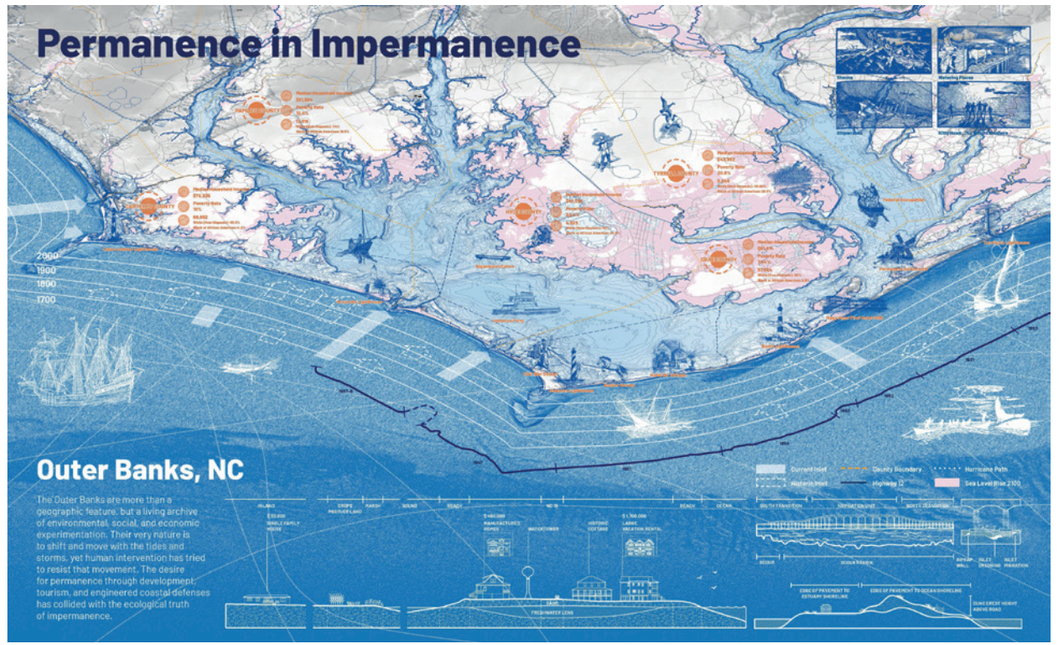
Selling the Dream by Prawira Putra, Ambika Kannusami, Elsa Paas, Henry Zhao



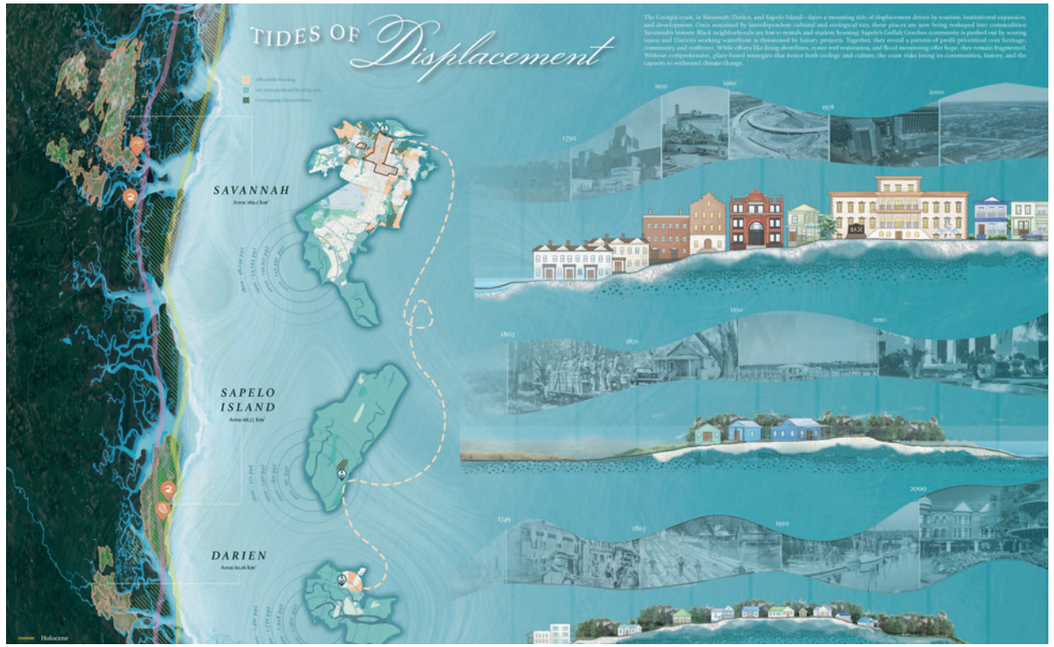
Where Water Blurs Boundaries by Susana Chinchilla, Manuela Hurtado, Yi-Jou Lin, Deepanksha Gillakamsetty



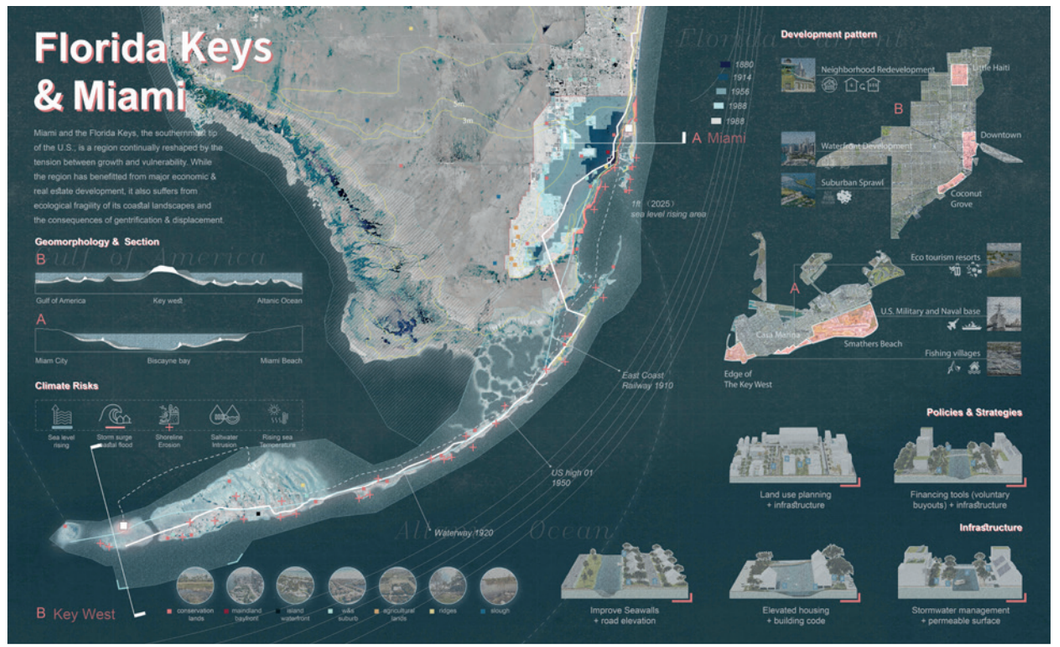
The Treasure Trap by Rebecca Koh, Romina Quinn, Xinyue Wang, Yung Hsiang Yang



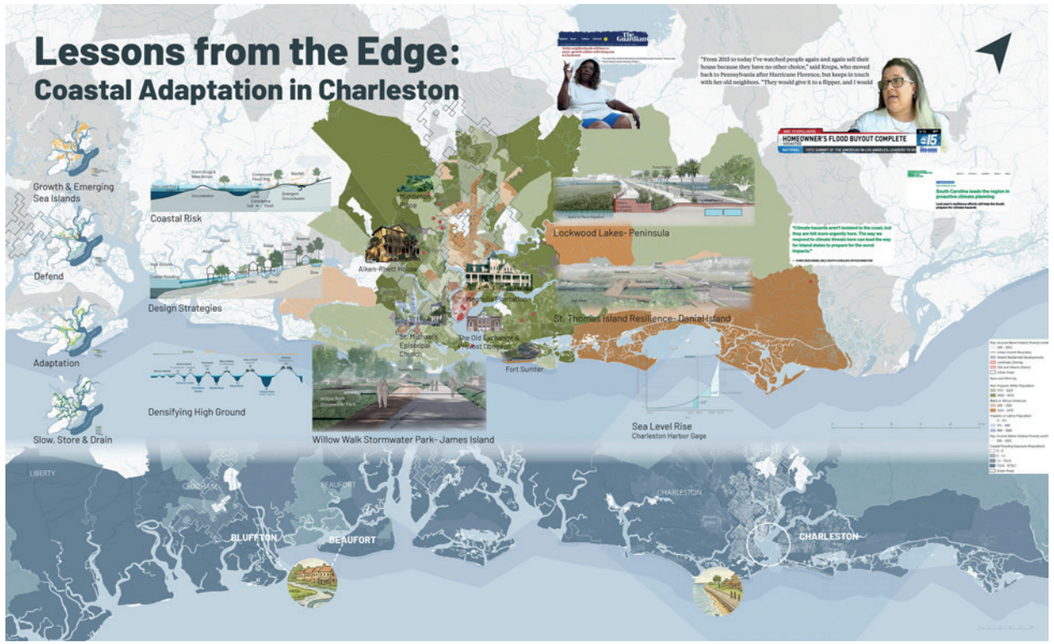
Permanence in Impermanence by Amalia Kamien, Kuan Fu Huang, Jihye Park, Wenxin Dai



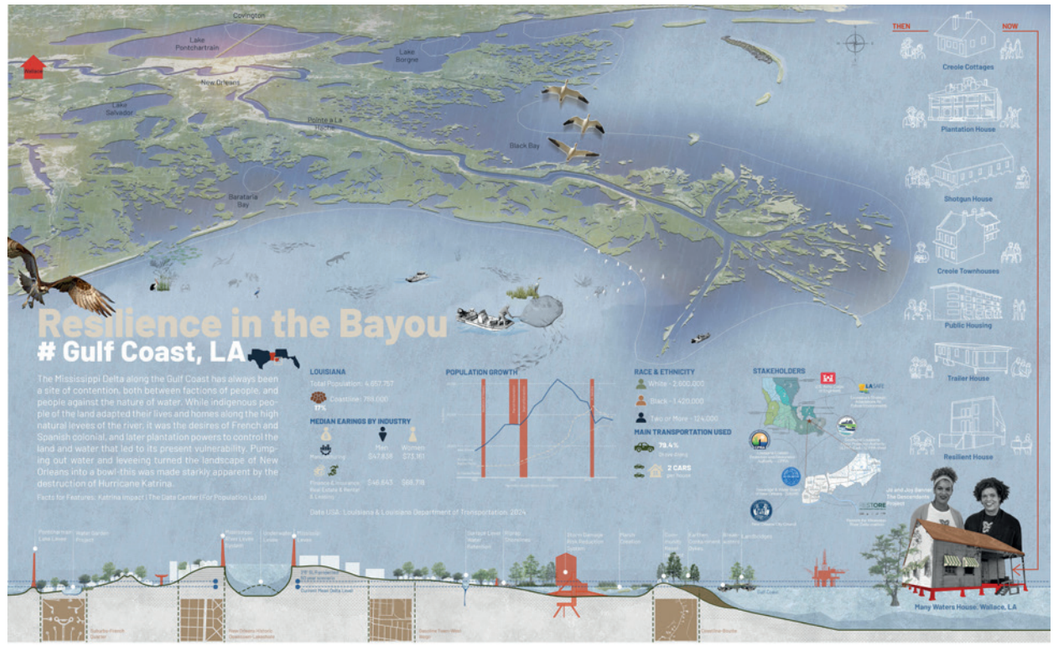
Tides of Displacement by Gracia Ignatius, Jianing Tang, Yangjing Cheng, Vera Leon



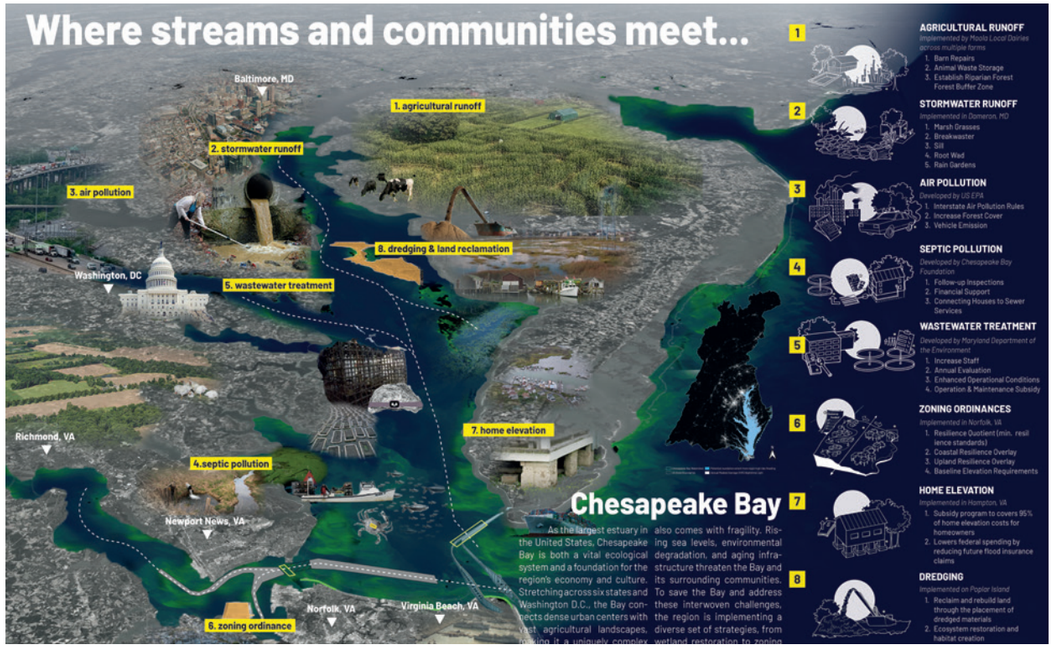
Florida Keys & Miami by Nicole Quah, Geethika Lakshm T S, Junbo Chen, Zongping Liu



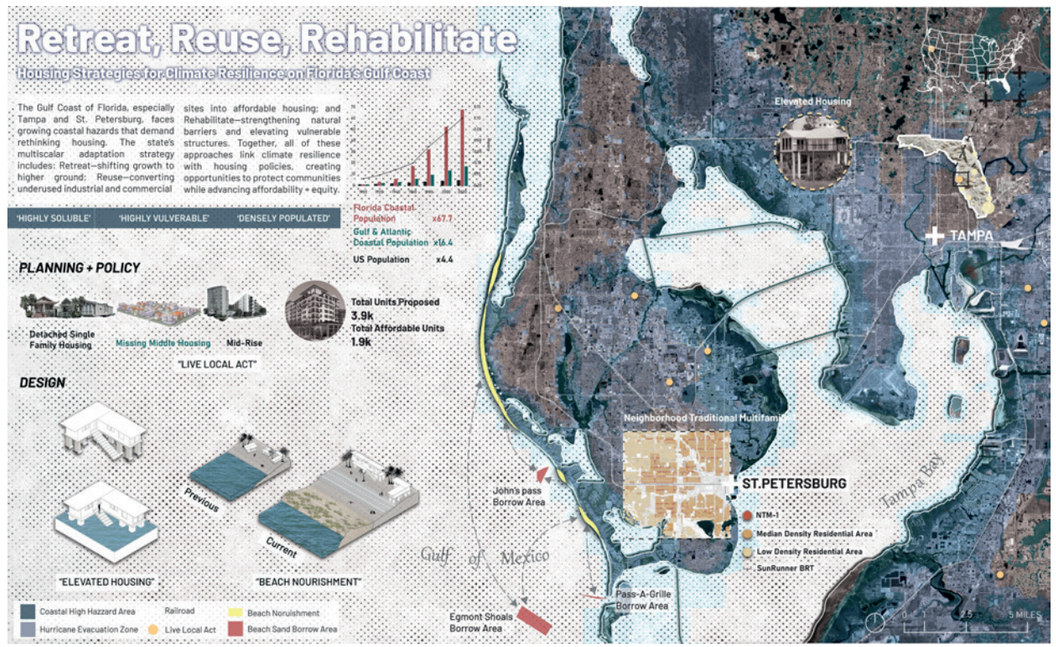
Lessons from the Edge by Giovanna Luz Moreira, Yijing Xiao, Remilekun Omoleye, Tianyi Shi



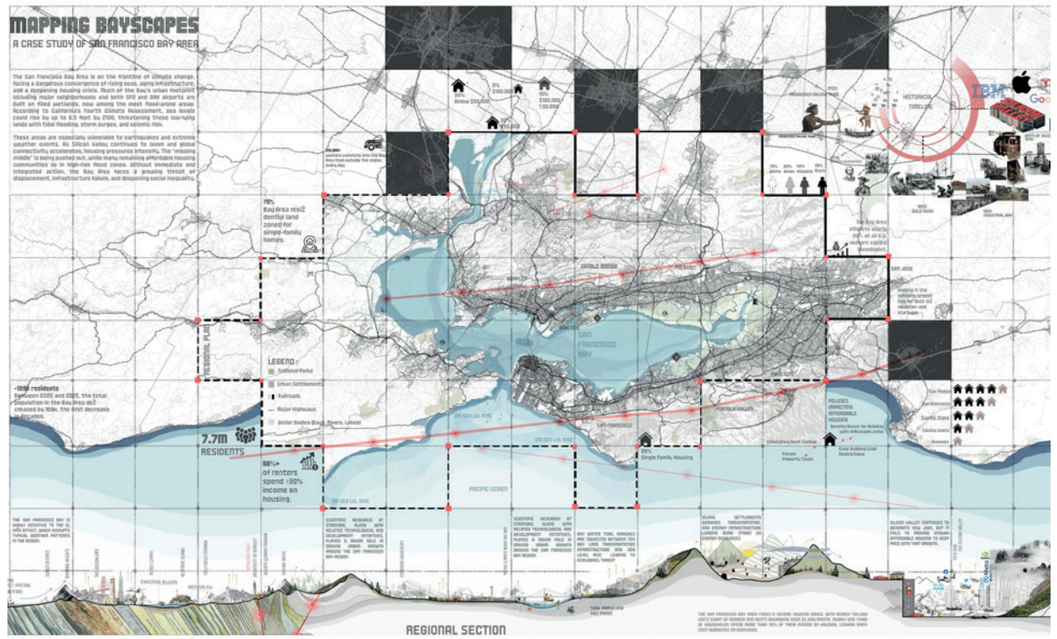
Resilience in the Bayou by Ayesha Maria de Sousa, Guoguo Chen, Juliana Leite Neri, Vanessa Gallego



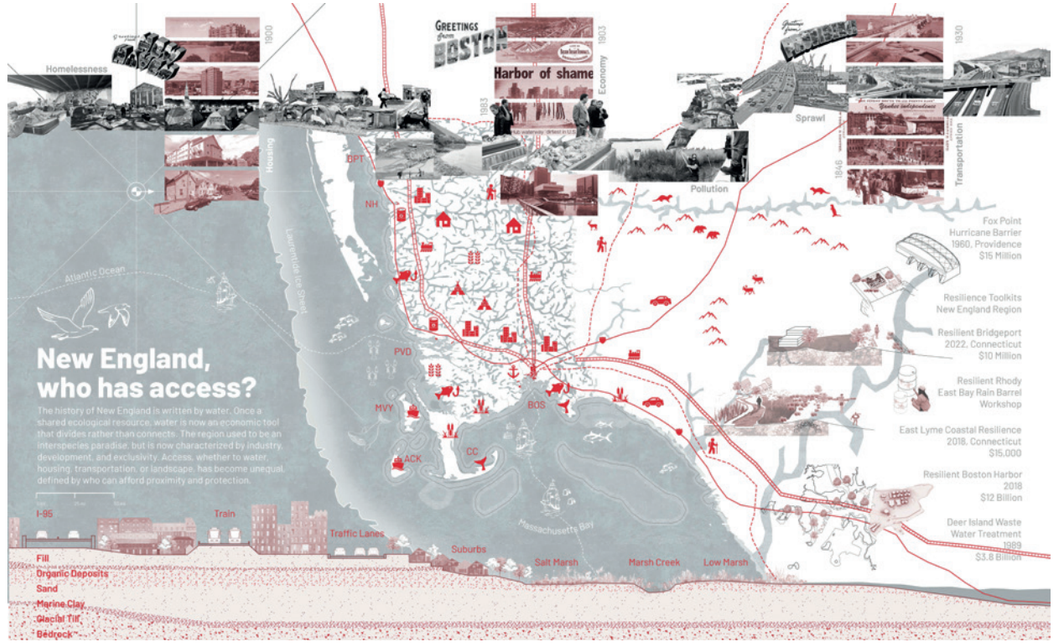
Where Streams and Communities Meet by Jennie Zhou, Yuchen Zhang, Tianyi Dai, Atharv Bhole



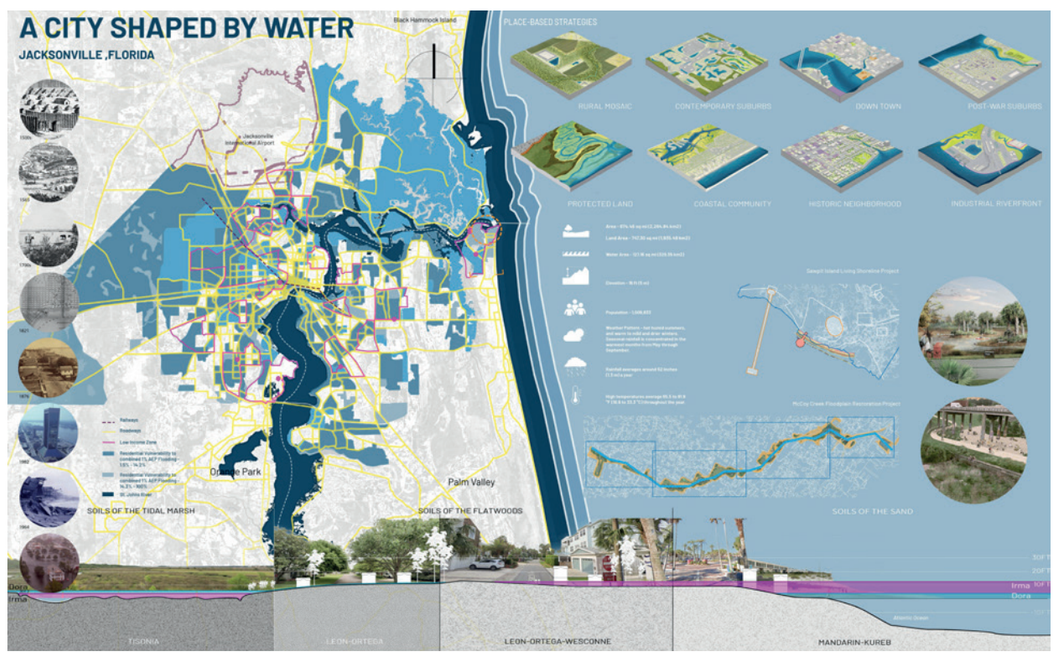
Retreat, Reuse, Rehabilitate by Ting Chu, Yiting Li, Sunghwan Park, Haoyang Chang



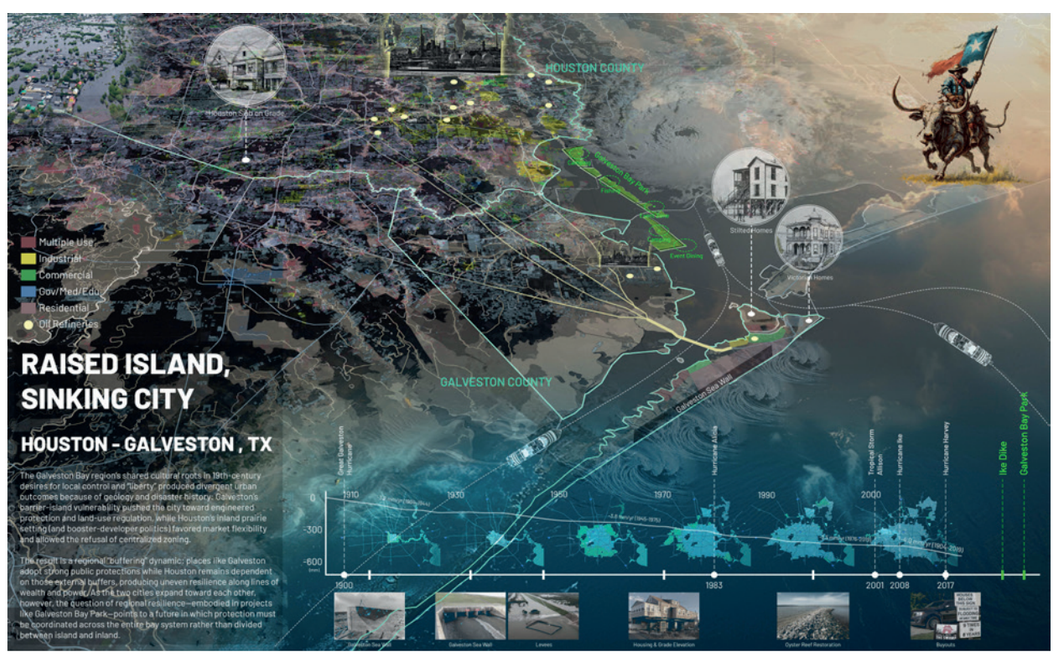
Mapping Bayscape by Vritti Bhamri, Zehra Zaheer, Aljoharah Althunayan, Vidhi Trivedi



New England, Who Has Access? by Daniela Monroy, Samantha Nowak, Mason Rape, Miguel Santivanez



A City Shaped By Water by Aishwarya Warad, Dzormo Naa Cofie, Xiaonan Li, Zhuoheng Yu



Raised Island, Shrinking City by Eric Lin, Xire Sangpei, Inhoo Seo, Mengtian Chen

ASSIGNMENT 1: COASTAL CASE STUDIES

ASSIGNMENT 2:
SITE INVESTIGATION

-

Regional Urban Design: The Bight

New Jersey + Long Island

-

01	Long Beach to Rockville Center	06	Robert Moses Park to Babylon
02	Jones Beach to Freeport	07	Ronkonkoma to Hecksher Park
03	Jones Beach to Levittown	08	Sayville to Fire Island
04	Long Branch through Colts Neck		
05	LIE - Roslyn Heights to Melville		

01	Old Bridge to Freehold on Route 9 (Bruce to Bon Jovi)	06	Belmar through Wall toward park areas
02	Keansburg/Union Beach down to Holmdel	07	NJ Transit from Long Branch to Pt Pleasant
03	Rumson to Red Bank (wealthy and big town)	08	Point Pleasant to Lakewood (fastest growing town in NJ)
04	Long Branch through Colts Neck	09	Seaside Heights to Toms River (iconic shore town)
05	Asbury Park toward Freehold (through naval base)	10	Berkeley into the Pine Barrens

FROM THE BIGHT: THE TRANSECTS

The term “site” in urban design can be controversial. Focusing too much on “site” can immediately limit our imagination and curiosity to the extent of a possible intervention. To consider design interventions at the scale of the region, we have to broaden our understanding of “site” to encompass a field of emerging possibilities, inclusive of geography, technology, and politics. Collectively this assignment will help us all understand how the coasts of southern Long Island and northern New Jersey have come to be what they are, and how they may change in the future.

“Scenarios are not predictions of what will happen. They are an exploration of what might happen. They are structured narratives about the possible future paths of a social-ecological system (Peterson et al. 2003b).Rather than forecasting the future, they involve a group of experts working together with a representative cross section of local residents to explore what might happen to the region if certain trends are followed…”

Walker and Salt from Chapter 4 of “Resilience Thinking”

Part 1: Mapping Along a Transect

Each student team traveled along a transect in Long Island or New Jersey. We borrow the term “transect” from ecology where it refers to a systematic sampling of organisms or events along specified pathways. Multiple transects read together can establish a more nuanced and complete understanding of a territory and its ecology. A comparable method is used in search and rescue operations, when territory is divided into a grid to allow multiple actors to collectively and comprehensively cover the most ground.

Part 2: Stakeholder Identification and Powermapping

The first part of the assignment helped students gain an understanding of the physical environment. The second part was an introduction to the social and political environment. Who today makes decisions about housing, zoning and land use, conservation, and infrastructure? What voices are dominant and which voices are suppressed? How is the political landscape changing?

Part 3: Site Visits

Part 4: Scenarios

Scenarios are geographically-specific tools to engage a broad audience in envisioning the future of place. Scenarios help us understand how a place is likely to evolve in the future, given trajectories of the economy, demographics, climate, and other trends.

Part 5: Workshop

Workshop

Site Visits

Workshop

Resilient Coastal Communities: Our Coast, Our Future

Saturday, October 25, 2025 | 10:00 AM – 6:00 PM
Columbia Graduate School of Architecture, Planning and Preservation

The beaches, bays, and boardwalks of New York and New Jersey are places where we connect with nature and with each other. As sea levels rise, storms intensify, and development threatens displacement, how can we protect these beloved natural places while also ensuring that their communities thrive into the future?

On October 25, join students, youth activists, local leaders, and neighbors across the region for a day of collaboration and imagination. All participants will be asked to join a series of activities led by urban design students who are exploring future scenarios for the coastlines of Monmouth and Ocean Counties in New Jersey and Nassau and Suffolk Counties in New York.

What we'll do together:

Celebrate and Protect Our Shores – Share stories about what the beach and waterfront mean to us, and how we can safeguard them for future generations.

Build Community Connections – Learn from each other and strengthen networks that link housing, climate resilience, and community wellbeing.

Explore New Ideas – See urban design scenarios from students at Columbia, NYIT, and Penn that reimagine the future of our coasts, and discuss how we can turn these ideas into action.

Shape a Shared Future – Reset goals for resilience and recovery, grounded in care for our environment and our communities.

Young people have the most important role in shaping the future of our coastal communities. Come add your voice, your ideas, and your love of the coast to this important conversation.

Breakfast and lunch (tacos) will be served, and a happy hour will follow.

Please send us your RSVP by October 15th.
RSVP by October 21 and join us on October 25.

ASSIGNMENT 3: REGIONAL DESIGN AND ACTION PLANS

-

During the second half of the semester, students used an iterative and layered approach to developing studio projects. Throughout the design process, student teams were encouraged to revisit the site and to connect or re-connect with stakeholders on their own time.

-