

CANDELARIA MAS POHMAJEVIC

*MS in Architecture and Urban Design 2020
Columbia GSAPP*

FALL

*Social Carbon /
Just Throw it Out? /
Resilient Johnstown Workshop*

SUMMER

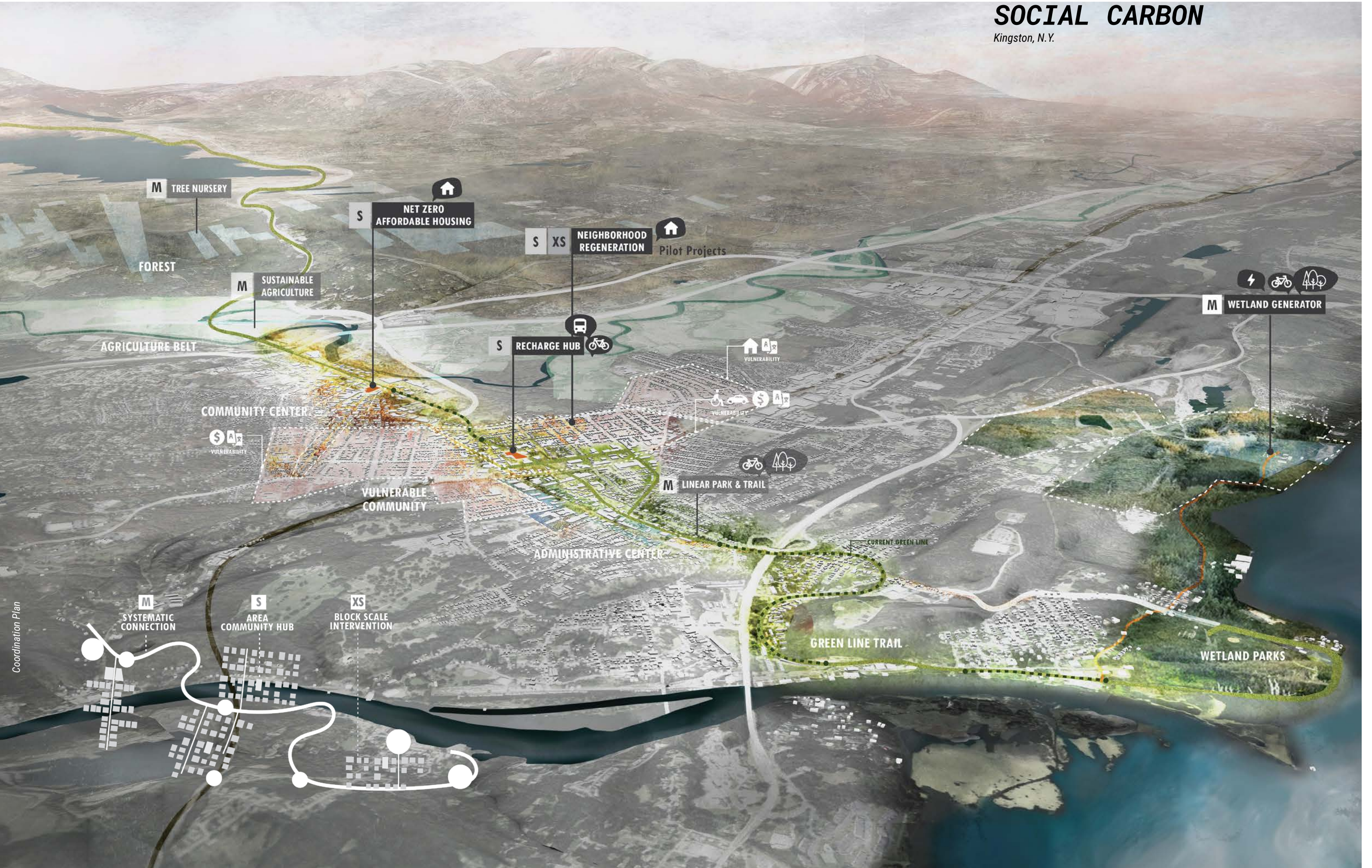
Energetic Waterfront

SPRING ?

*Gowanus Tracing /
Daylighting Neve Sha'anani*

SOCIAL CARBON

Kingston, N.Y.



PEOPLE + CARBON

The Fall Semester UD Studio 2019 presented the Green New Deal as a novel piece of legislation that could inspire design. Instead, through our project we contested the traditional belief that policy precedes design by blurring the lines that prevent people from collaborating.

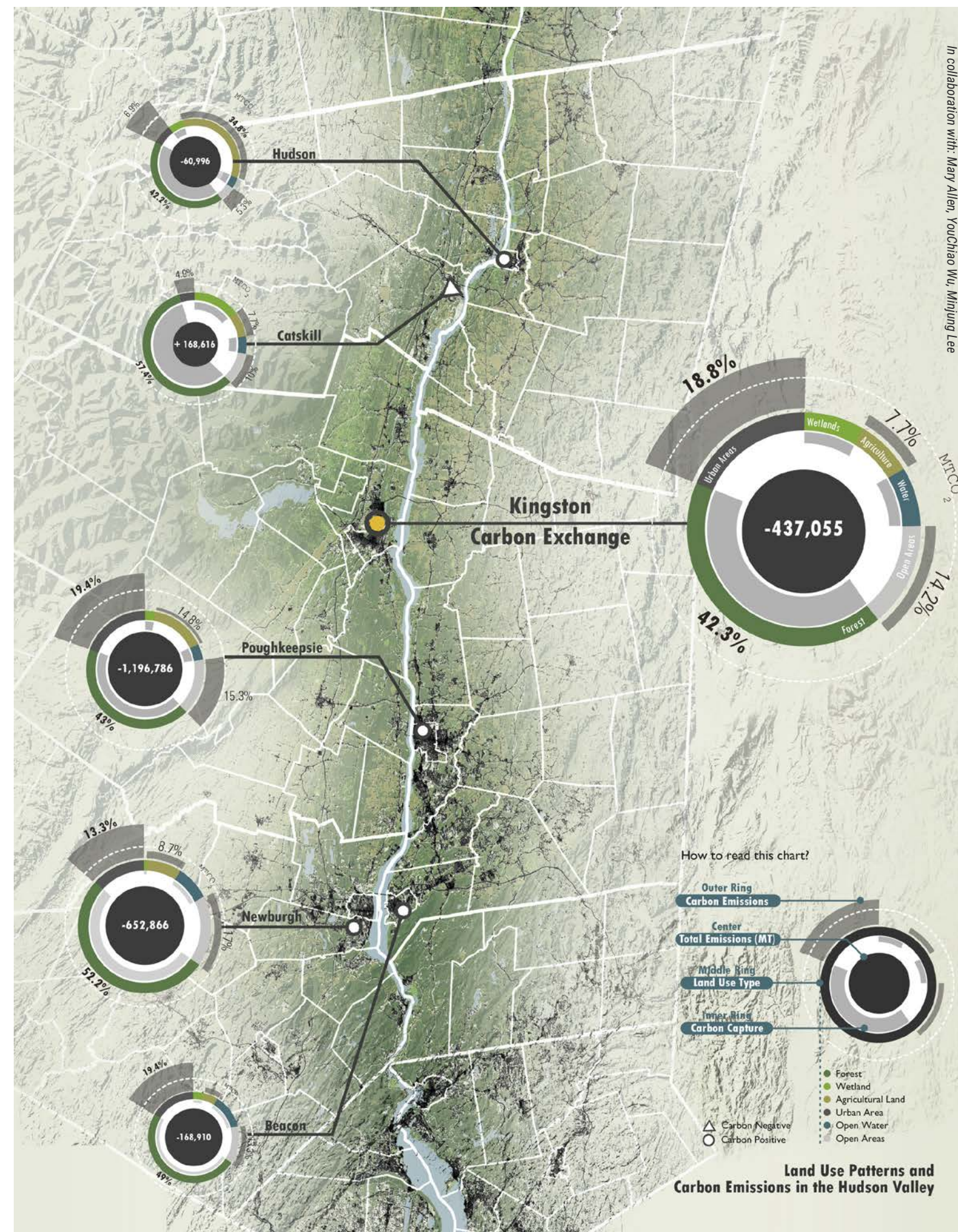
We engaged with the community in Kingston through a series of workshops and devised a proposal that simultaneously addressed emissions reduction and social needs through Design Thinking.

We envisioned the Green New Deal as a middle ground –top down / grass-roots– initiative that motivates partnerships across disciplines and existing boundaries. Our design included a Community Workshop, e-Charge hub, Net-Zero Affordable Housing, and a Wetland Generator.



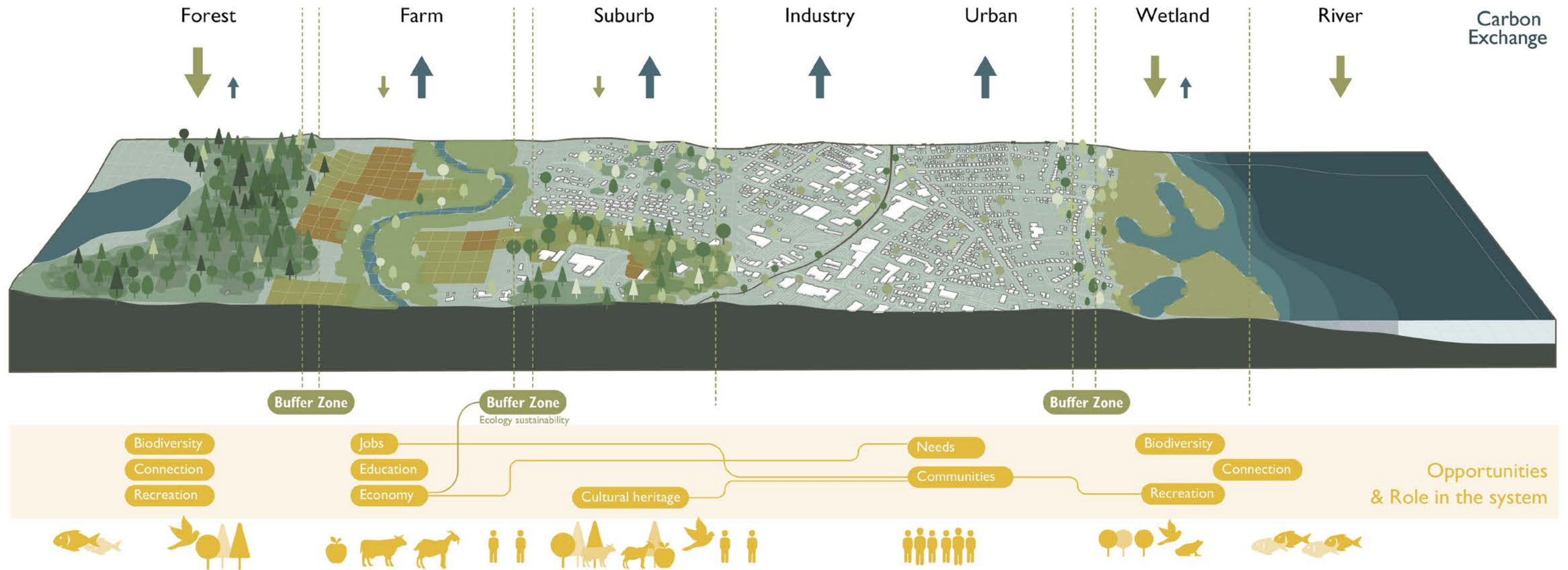
Community Interaction:
We traveled to Kingston, N.Y. where we participated in a community event towards the carbon transition. We talked to people from the Hudson Valley and co-led a community mapping workshop with Kingston Land Trust.

Hudson Valley Carbon & Land Use:
Carbon emissions are closely tied to Land Use patterns that stem from human needs. Almost all the cities hold a negative carbon balance, which means that their urban /agricultural /industrial uses outset the capturing capacity of forests and wetlands.



KINGSTON IN TRANSECT

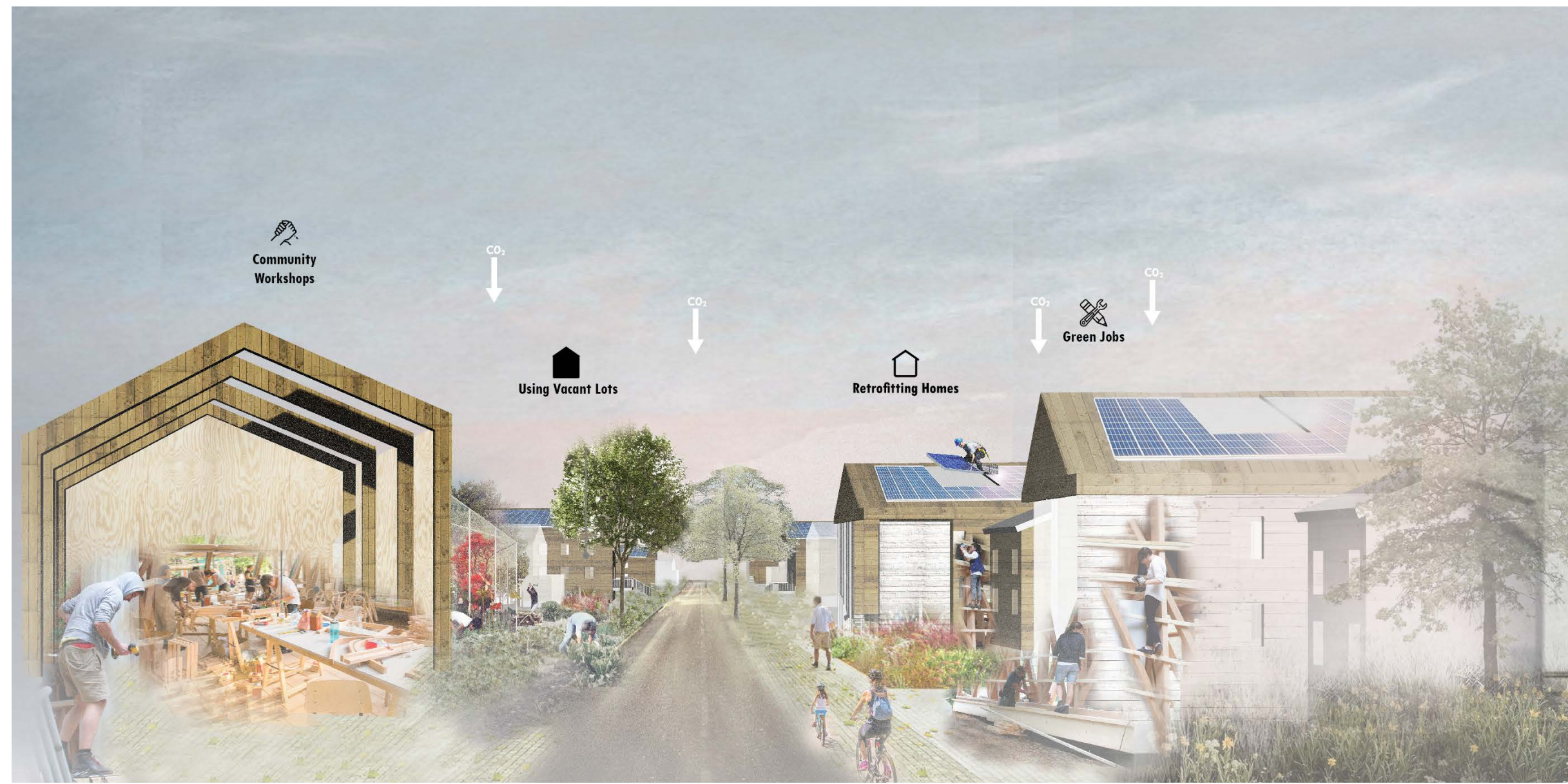
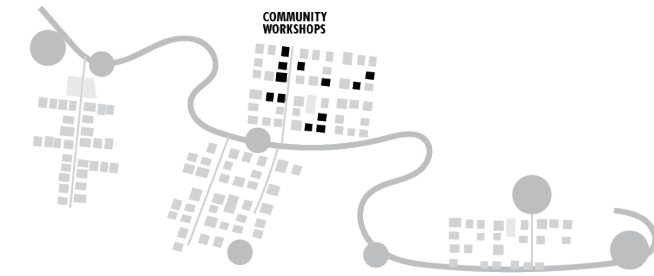
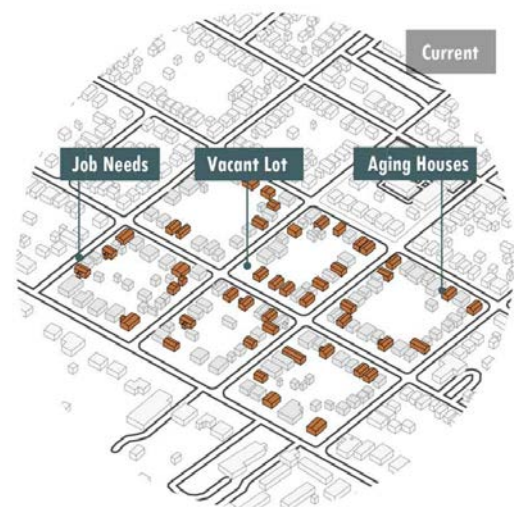
We visualized the landscape's complexities through a transect that repeats along the region. The region has the potential to reduce emissions by working collaboratively. Carbon knows no boundaries.



In collaboration with: Mary Allen, Youchao Wu, Minjung Lee

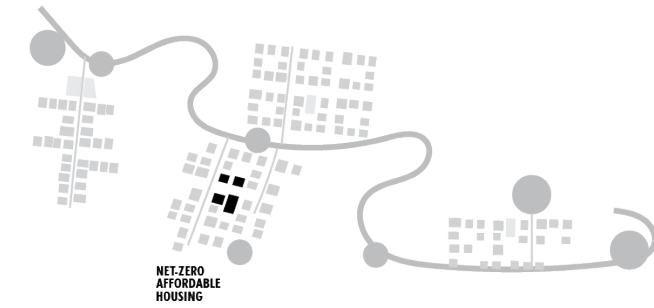
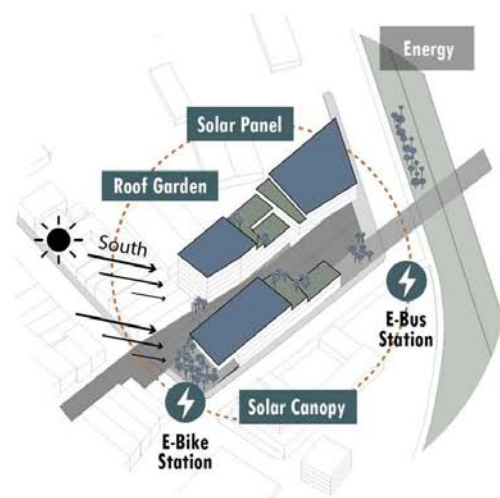
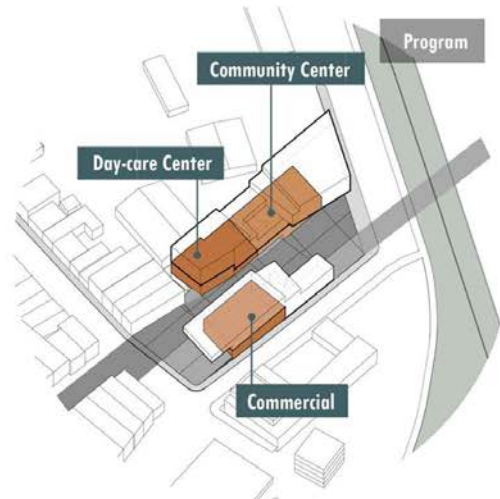
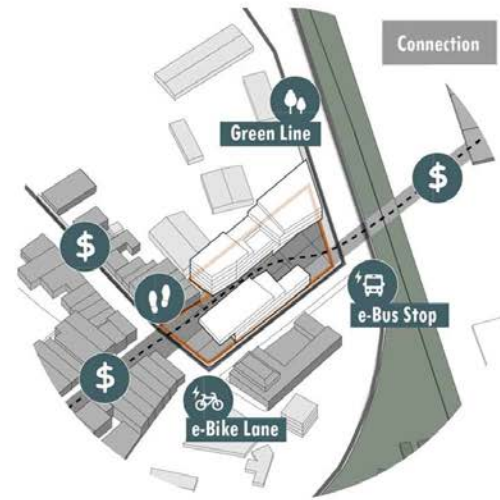
COMMUNITY WORKSHOPS

Address community needs and carbon reductions in different scales. At the neighborhood scale, the workshops create job opportunities and community led initiatives. At the human scale they provide a space to learn how to retrofit buildings.



NET-ZERO AFFORDABLE HOUSING

Proposes to revisit the public housing concept from the past by including the community on its building process. It considers timber structure and sustainable construction.

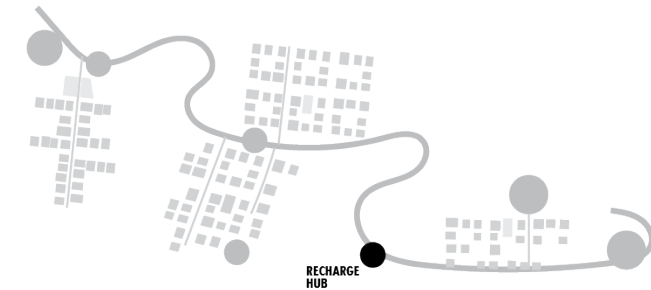
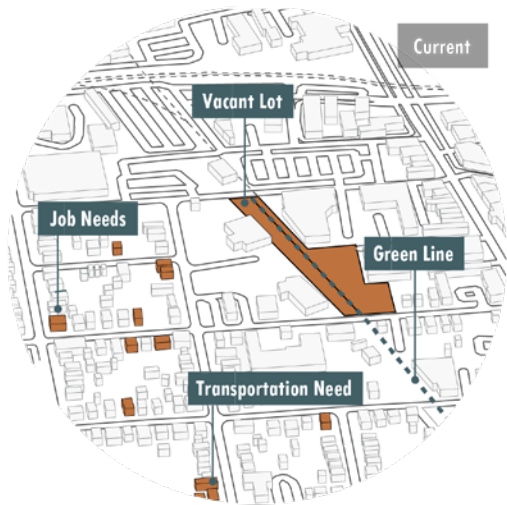
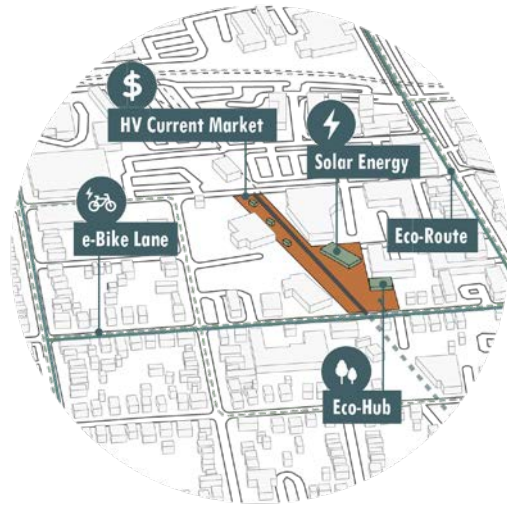


Bioclimatic Architecture - Community Center - Connections

In collaboration with: Mary Allen, Youchao Wu, Minjung Lee

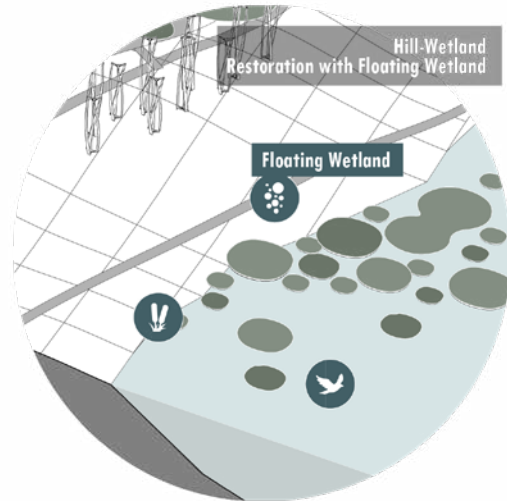
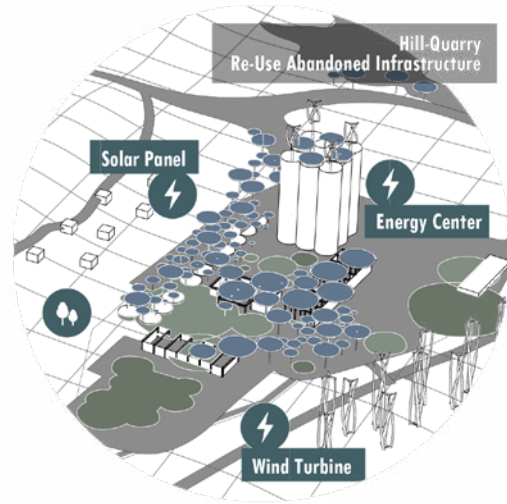
RECHARGE HUB

Community led renewable energy transportation hub. The Recharge Hub cooperative will provide jobs and sustainable transportation for Kingston.



WETLAND GENERATOR

Post-industrial Landscapes next to the Hudson River will recover their ecology and biodiversity and the existing built structures will be used for solar energy collection.

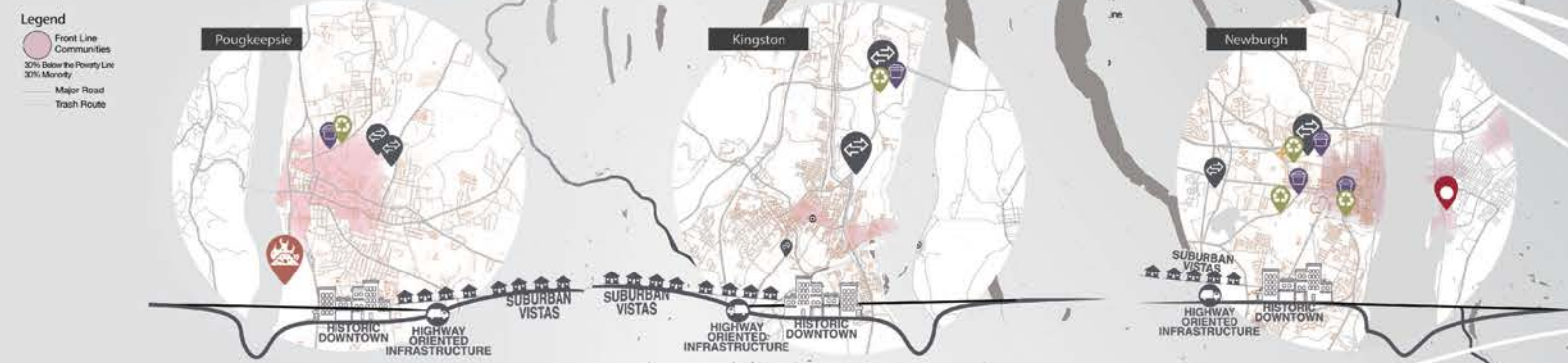


JUST THROW IT OUT? WASTE & EXTRACTION

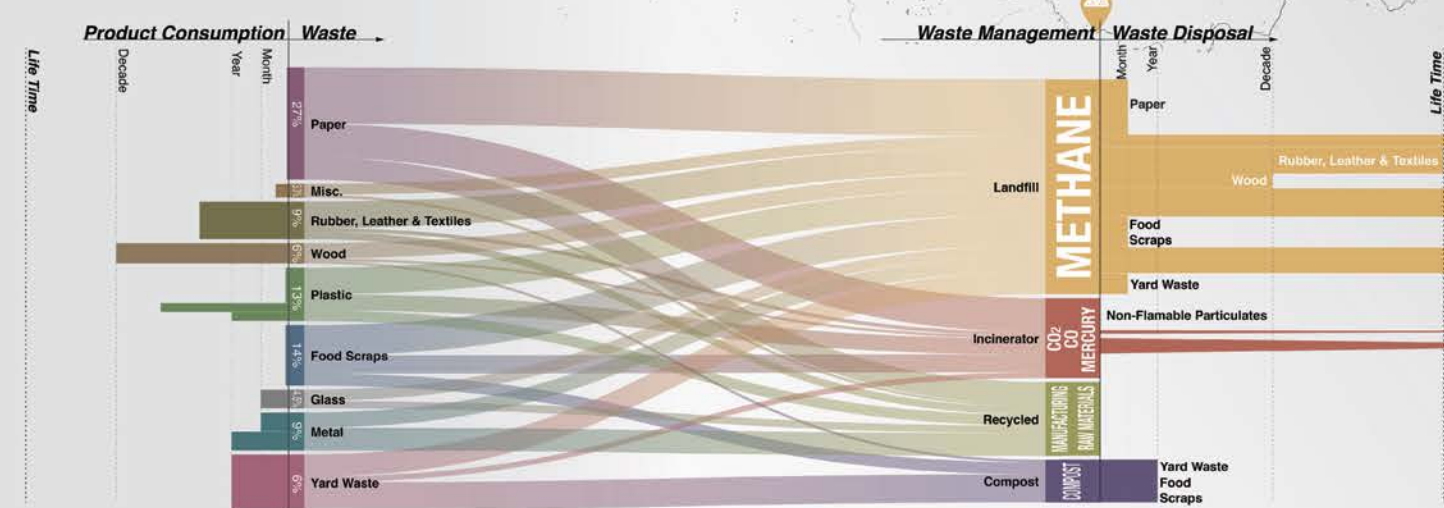
Hudson Valley, N.Y.

In collaboration with: Tori Vuono, Tian Hao, Laszlo Kovacs

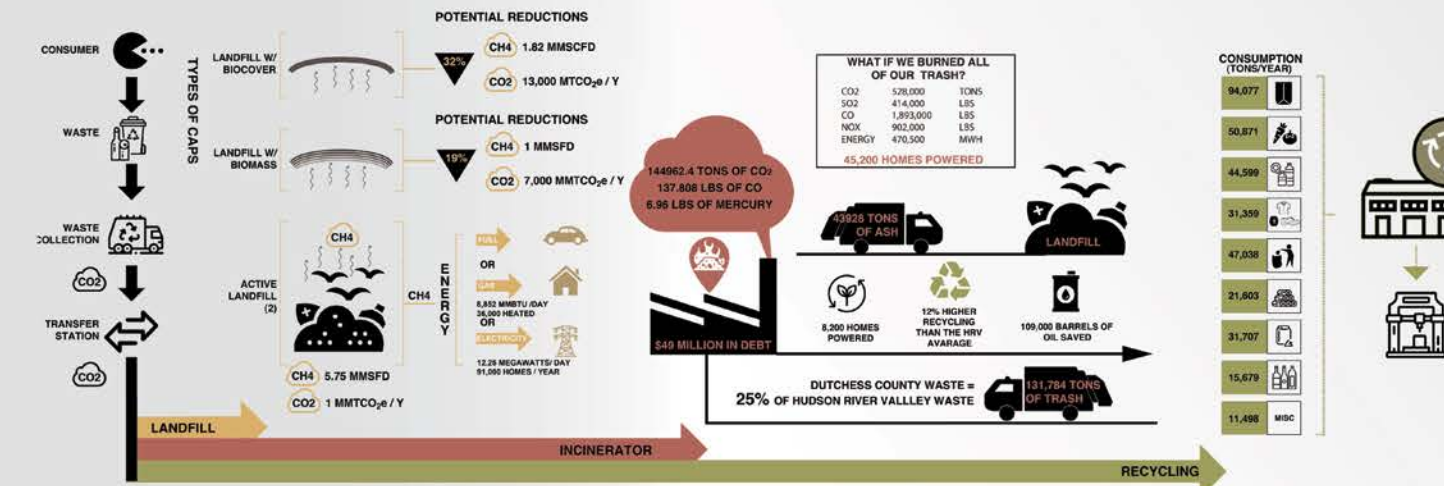
System Spatial Configuration



Life and Death of Our Products



Waste Management and Potentials

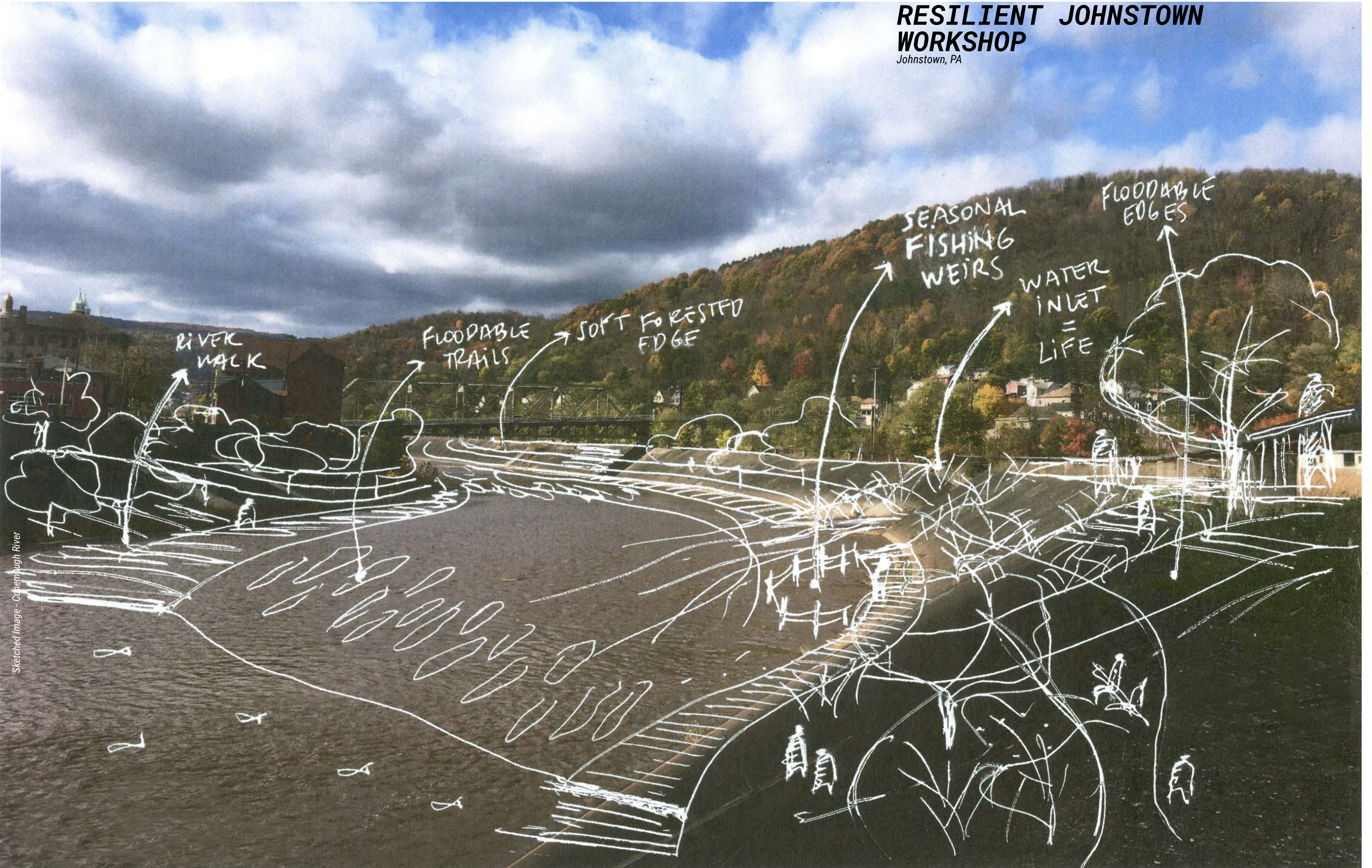


Visualizing Waste in the Hudson River Valley

SOURCES: EPA.GOV, C200R.LIBRARY.CORNELL.EDU, GIS.BY.GIS.DUC.NY.GOV, ESR.MDA.GOV, TRANSFER STATIONS ANNUAL REPORTS 2018, C200R.GOV

RESILIENT JOHNSTOWN WORKSHOP

Johnstown, PA



Sketched Image - Conemaugh River

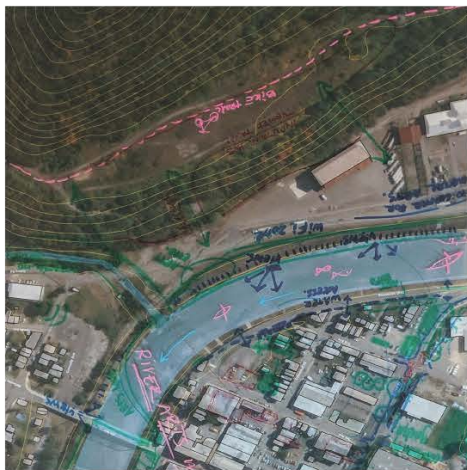
A RESILIENT VISION FOR JOHNSTOWN

With the Resilient Cities and Landscapes class, we traveled to Johnstown, PA, a former industrial city that has suffered multiple times from floods, fires, and economic decline.

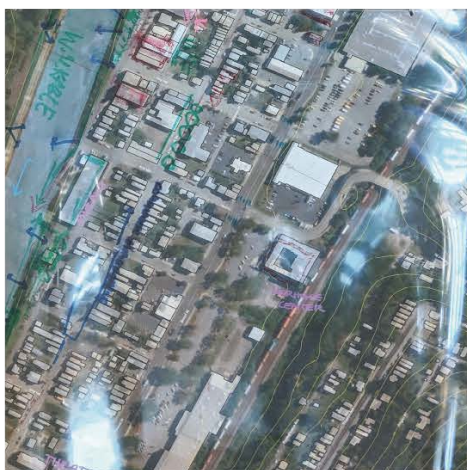
Together with the CRCL we prepared a workshop in which we interacted with community members and stakeholders. We shared case studies from different cities around the world and we listened to people's needs and wishes to draft a design based approach for a resilient Johnstown in the context of Vision 2025 – the city's plan for revitalization –



← N



ARTS & CULTURE TILES

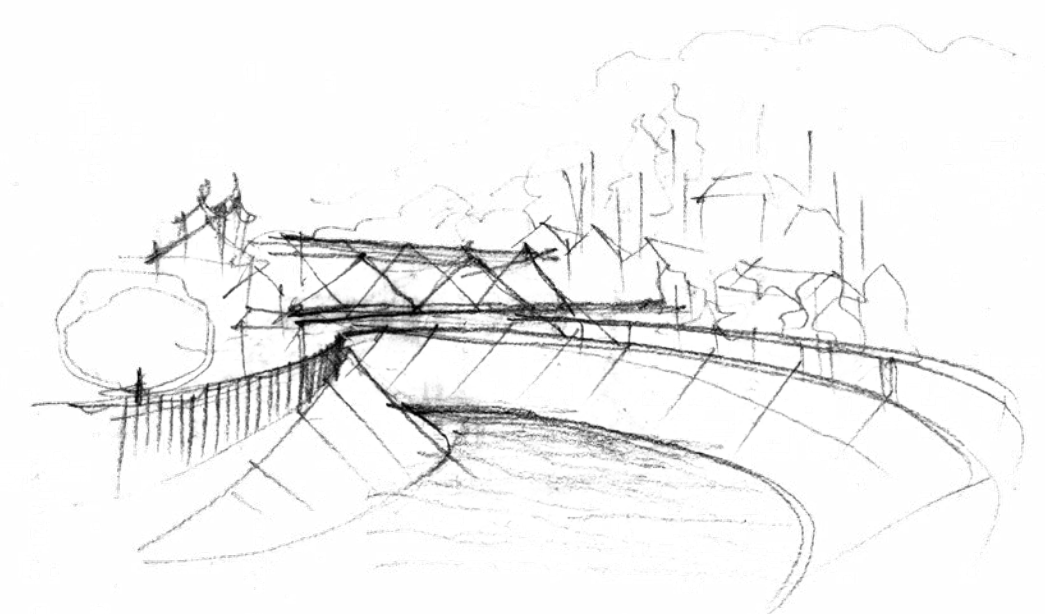


Workshop Tiled Map:
We divided in teams, each one received 2 tiles from the map. We were in charge of guiding the workshop with the community members and also of drawing what they explained through words. Our team's proposal was a River Arts Walk that connected the Cultural zone with the former industrial area in Johnstown.

RIVER ARTS WALK

Proposes to connect the assets of Johnstown by an arts walk that celebrates the industrial past and the local efforts.

Johnstown has a unique natural setting surrounded by mountains that offer incredible views to the forest. By creating a path that allows for connection to the nature and the river, local residents can capitalize the artistic and industrial work happening in the area.



Bridge and Channelized Conemaugh River

River Arts Walk Sketch

Site Visit

Workshop



Center for Metal Arts



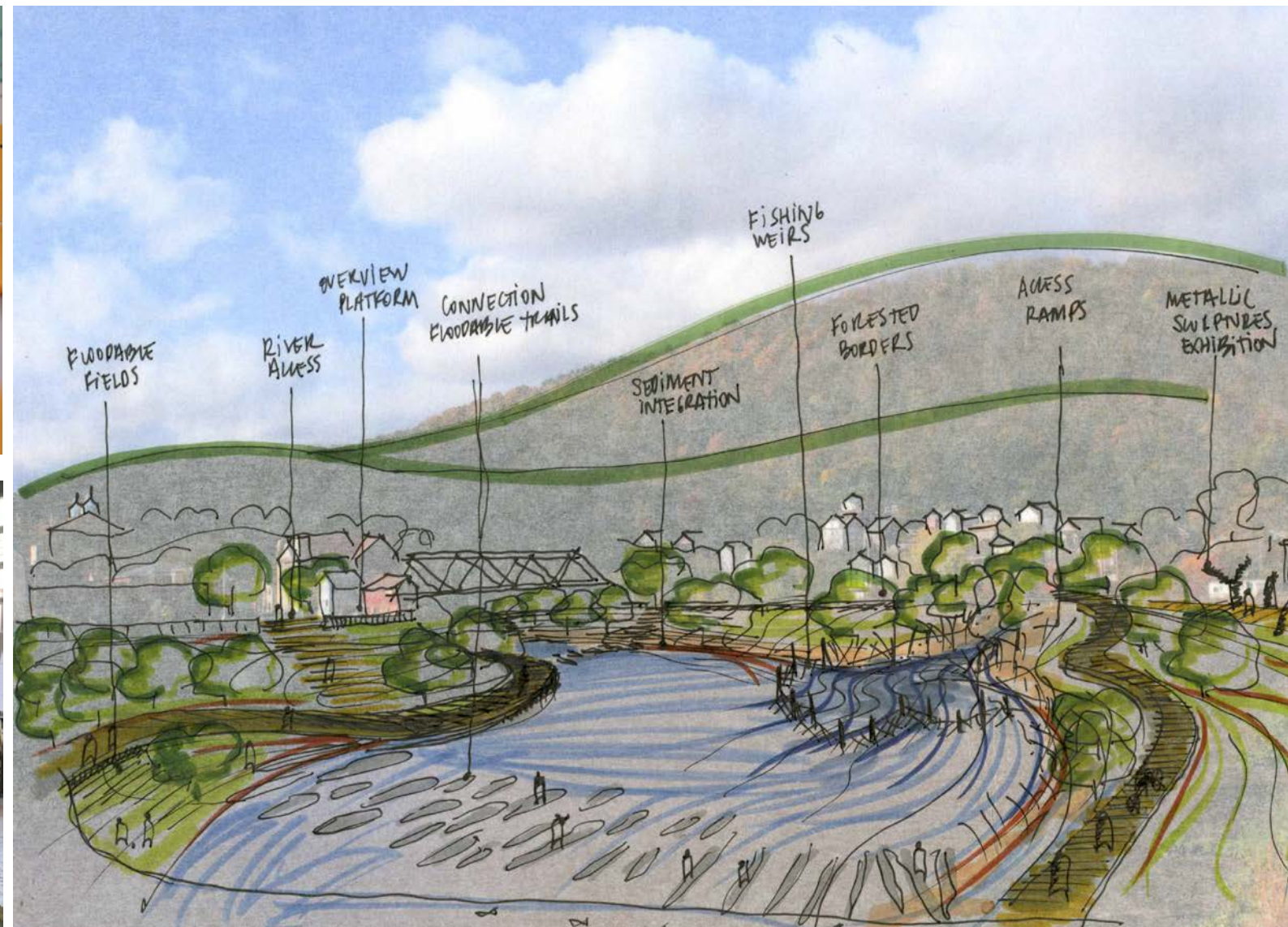
Risks and Opportunities Boards



Channelized Conemaugh River

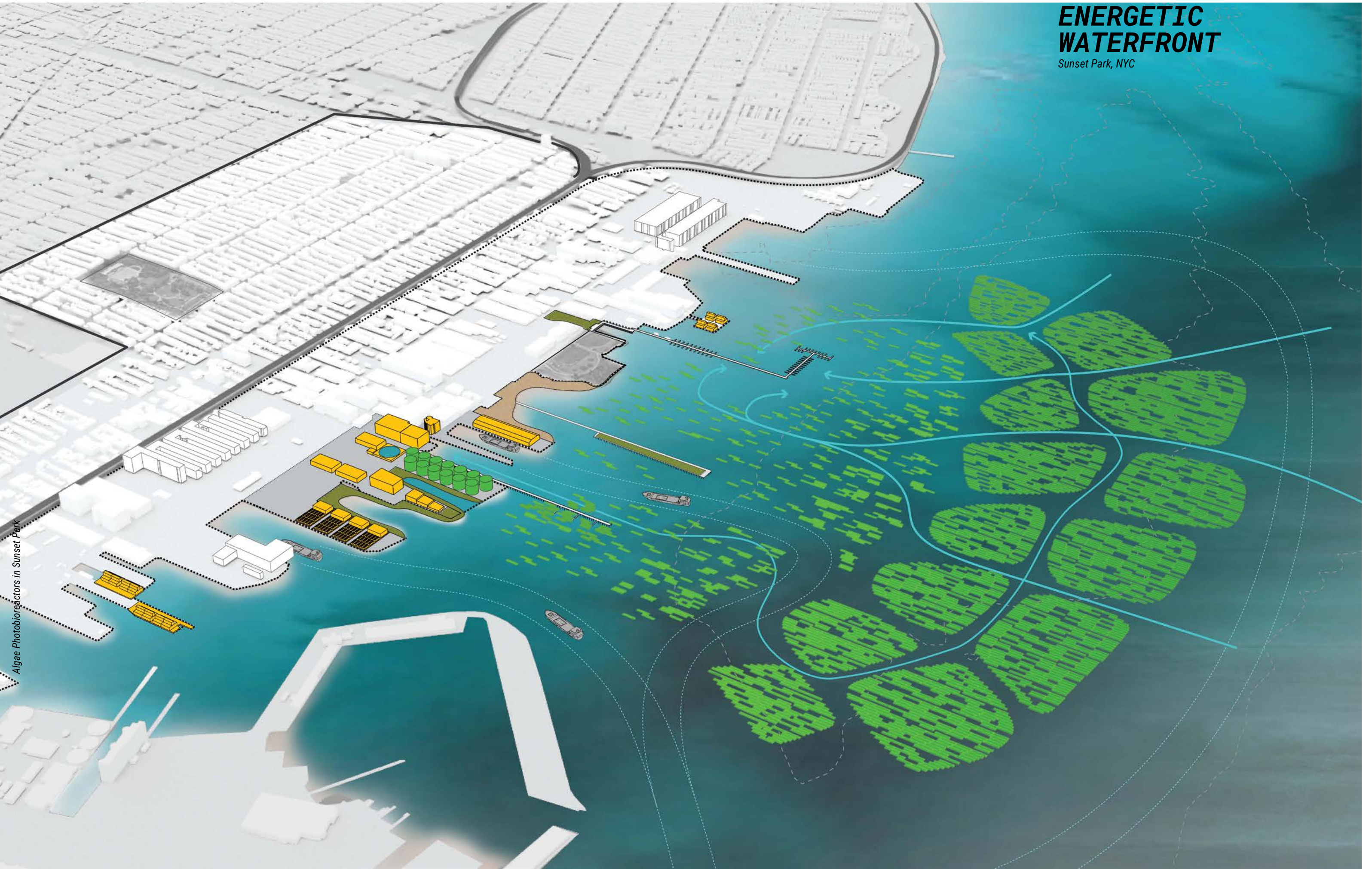


Community Mapping



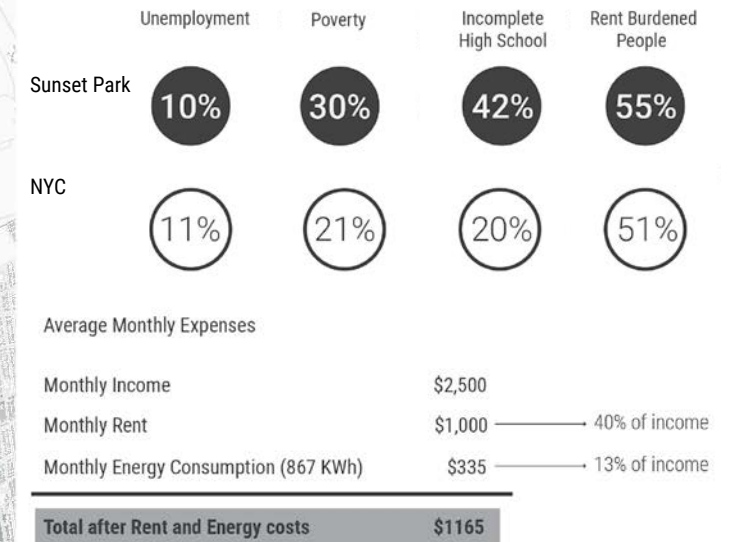
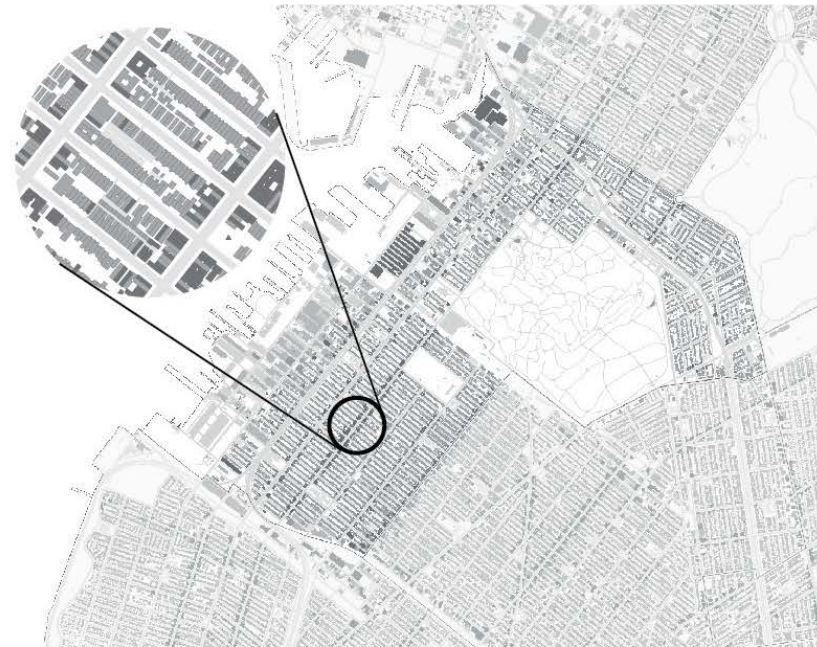
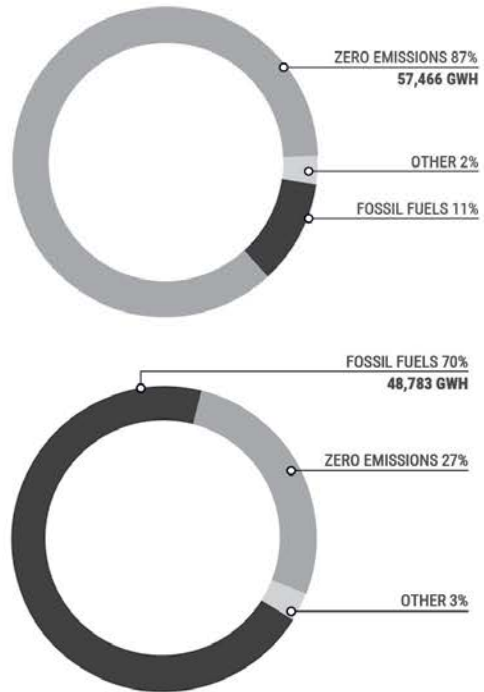
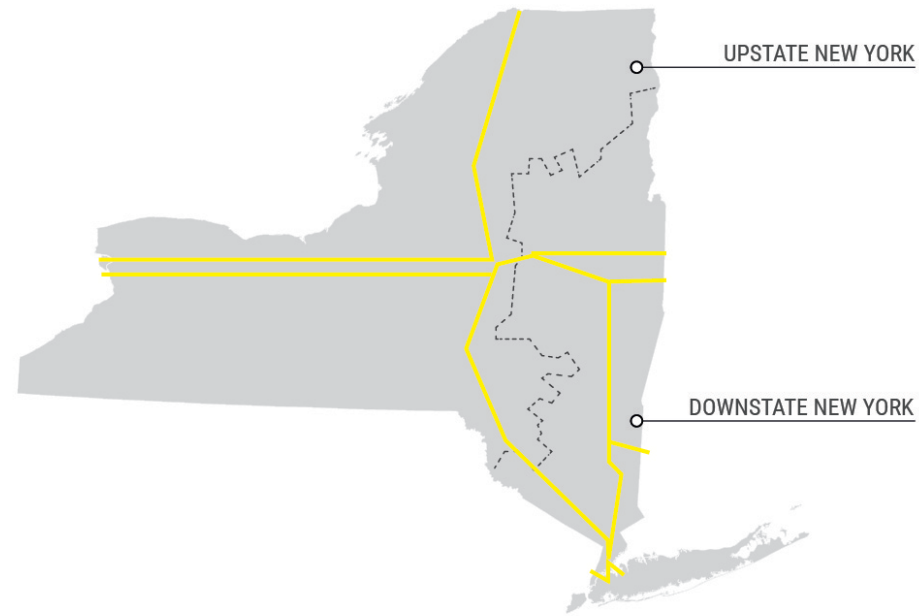
ENERGETIC WATERFRONT

Sunset Park, NYC

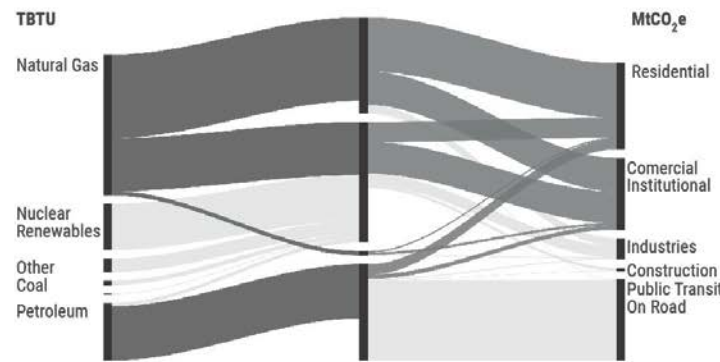


Algae Photobioreactors in Sunset Park

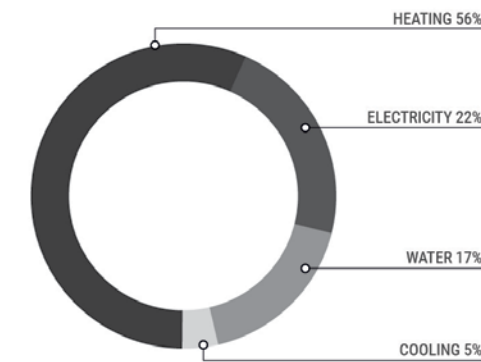
In collaboration with: Ritchie Ju and Chris Zheng



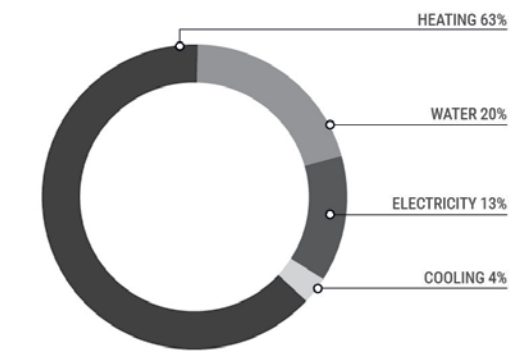
● Residential ● Commercial/Residential



NYC vs. NYS: NYS relies mostly on renewable energy sources, whereas NYC relies mostly on fossil fuels for generating its energy. Natural Gas and Petroleum are the main sources for energy generation in the city. Energy is mainly used for residential and commercial purposes throughout the city.



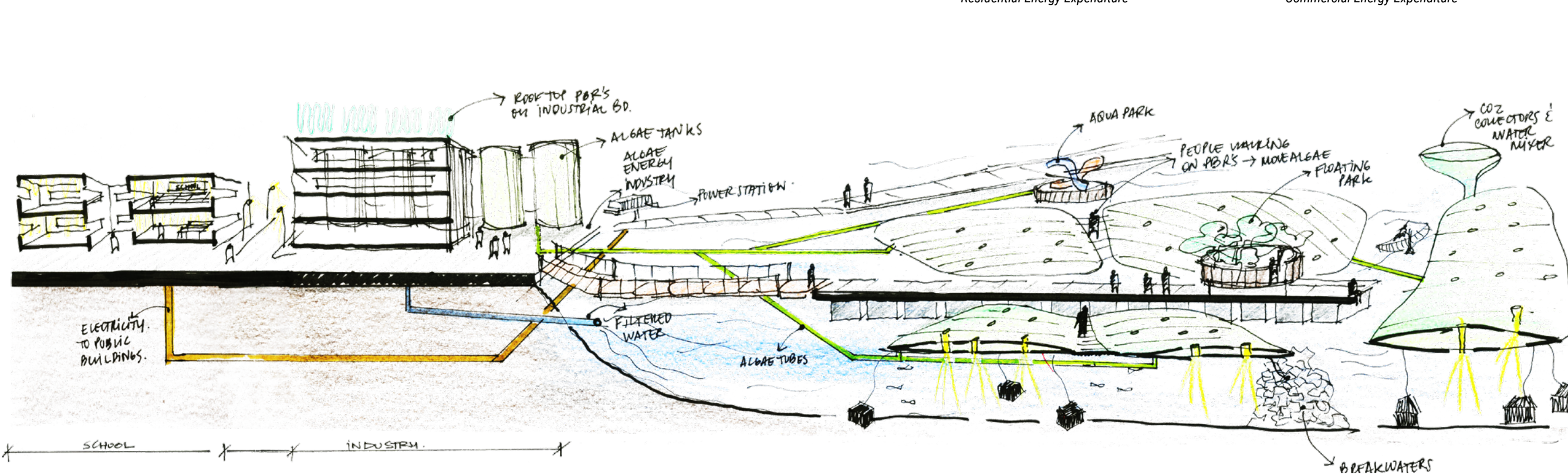
Residential Energy Expenditure



Commercial Energy Expenditure

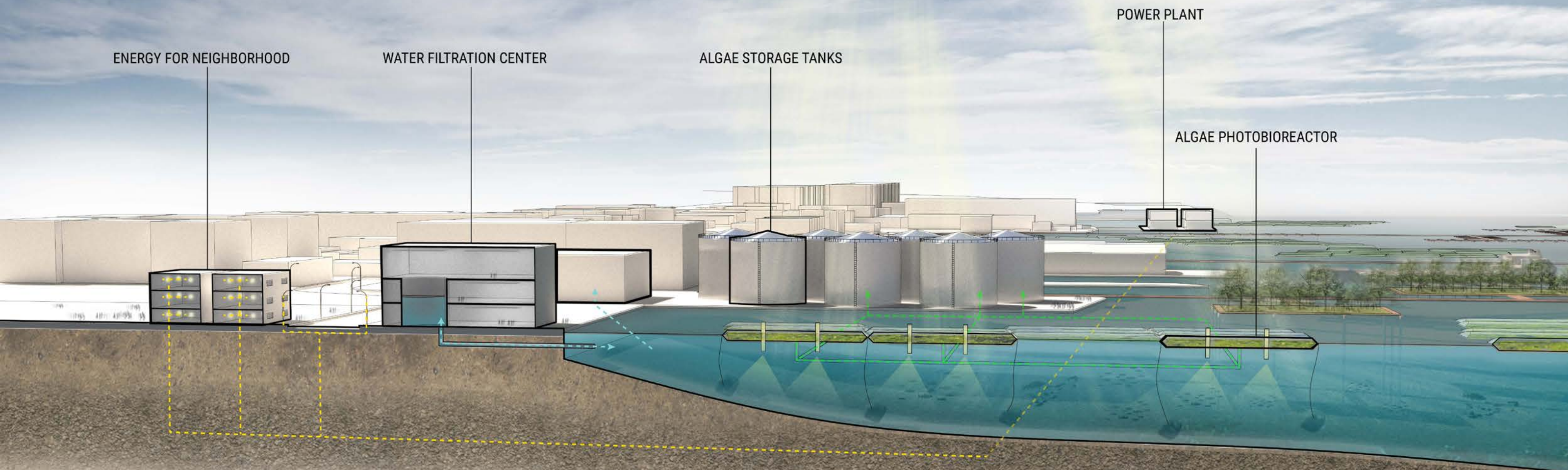
Sunset Park: Households spend 10% of their income on electricity. Besides, they are also rent burdened and have low percentages of educational attainment when compared to the rest of the city. Source: The New York Times/ NYC Planning Community Districts Profiles/ NYC Gov Property Measure Report 2017.

What if...? A working waterfront for Sunset Park that generates renewable energy and creates green jobs for the next generations.



NEW ENERGY LANDSCAPES

The project questions the role of the city within its environment and reshapes the former industrial uses in Sunset Park into a resource for renewable energy generation from algae biofuel that is close to the consumer.



In collaboration with: Ritchie Ju and Chris Zheng

Coordination Plan



SUPPLY 51% OF SUNSET PARK ENERGY CONSUMPTION
171,772,666 kWh per YEAR



1000+ JOBS GENERATED IN RENEWABLE ENERGY INDUSTRY



31,000,000 GAL/DAY OF RIVER WATER FILTERED



50% LESS CO2 EMISSIONS
2.5 MILES OF SHORE RECOVERY WITH ECO-INDUSTRY

ALGAE BIOFUEL TANKS

The Waterfront will be accessible to the public, engaging residents and kids with the new industry and with Sunset Park industrial past.



Former Fuel Tanks repurposed for Algae Biofuel container

In collaboration with: Ritchie Ju and Chris Zheng

ACCESSIBLE PHOTOBIOREACTORS

The algae will be held in Photobioreactors, light translucent sacks that allow algae growth and the pass of the light to avoid interference with existing ecosystems.



In collaboration with: Ritchie Ju and Chris Zheng

Coordination Plan

Gowanus Tracing

GOWANUS TRACING

Gowanus Canal, NYC



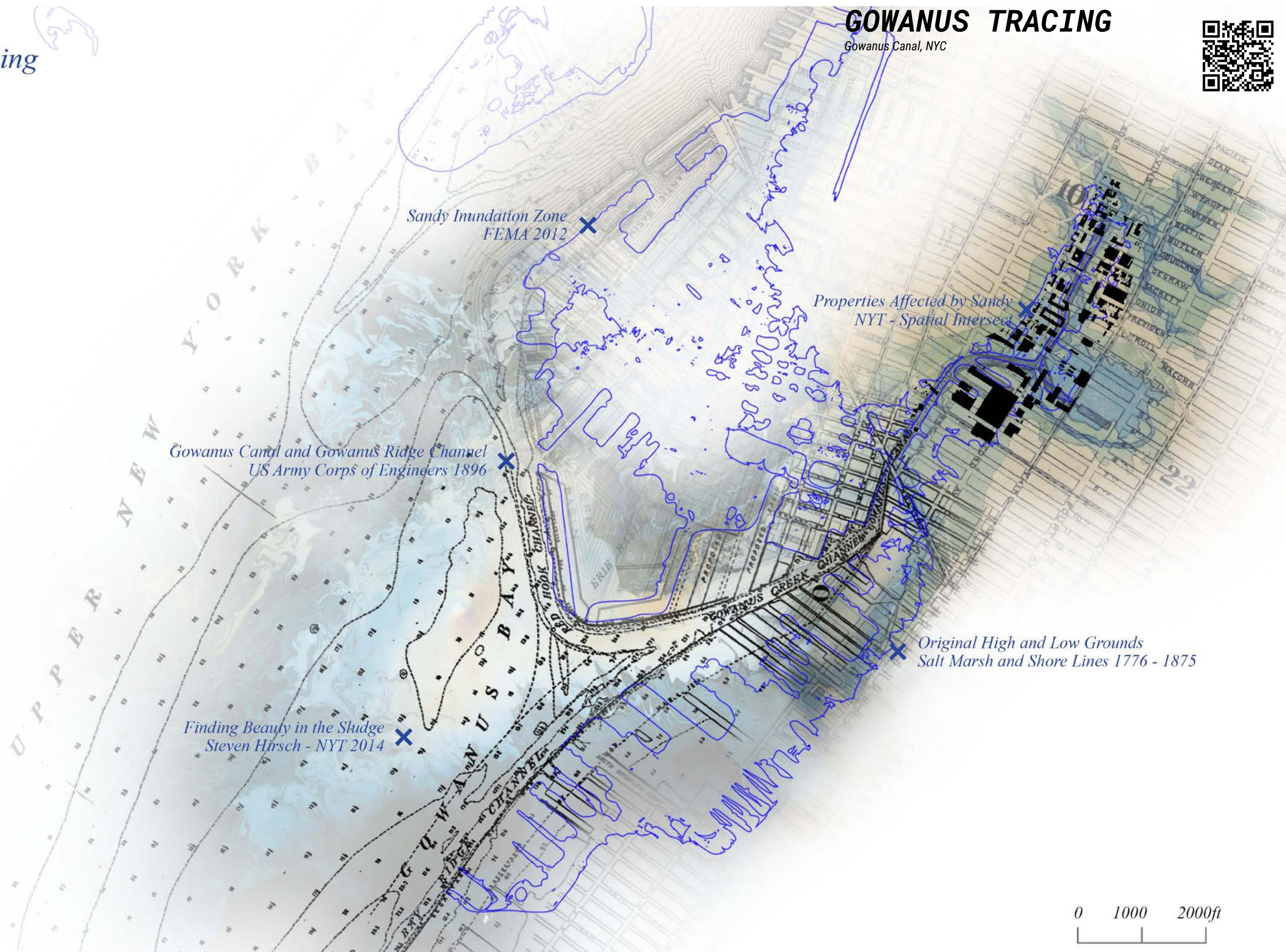
Sandy Inundation Zone
FEMA 2012

Properties Affected by Sandy
NYT - Spatial Intersect

Gowanus Canal and Gowanus Ridge Channel
US Army Corps of Engineers 1896

Original High and Low Grounds
Salt Marsh and Shore Lines 1776 - 1875

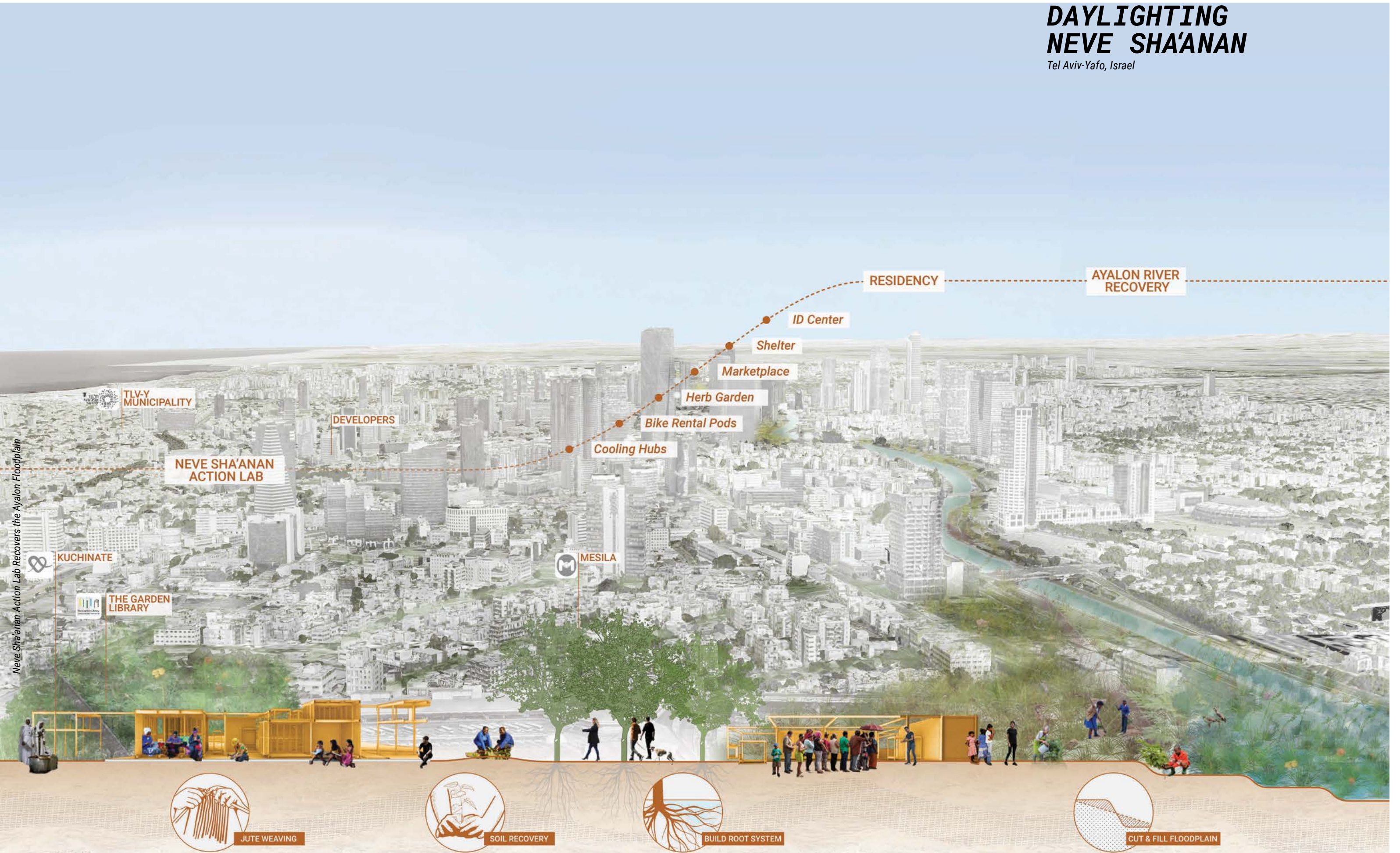
Finding Beauty in the Sludge
Steven Hirsch - NYT 2014



DAYLIGHTING NEVE SHA'ANAN

Tel Aviv-Yafo, Israel

In collaboration with: Niharika Shekhawat, Antonia Medina Abel, Shaltee Shah



Neve Sha'anán Action Lab Recovers the Ayalon Floodplain



DAYLIGHTING PEOPLE AND WATER

For the Spring Semester UD Studio 2020 we visited Tel Aviv-Yafo, Israel to address the challenges of the city's south. Neve Sha'anun is one of the southern neighborhoods affected by the lack of open and shaded spaces, and increasing heat during the summer. In the winter, the buried Ayalon River floods, damaging the neighbors' homes and scarce open spaces.

Neve Sha'anun is located between Jaffa and the wealthier north Tel Aviv area. It is home to a diverse community of locals, migrant workers and asylum seekers from Africa (Eritrea and Sudan). The migrant workers and asylum seekers reside in a liminal state because they don't have access to residency in Israel.

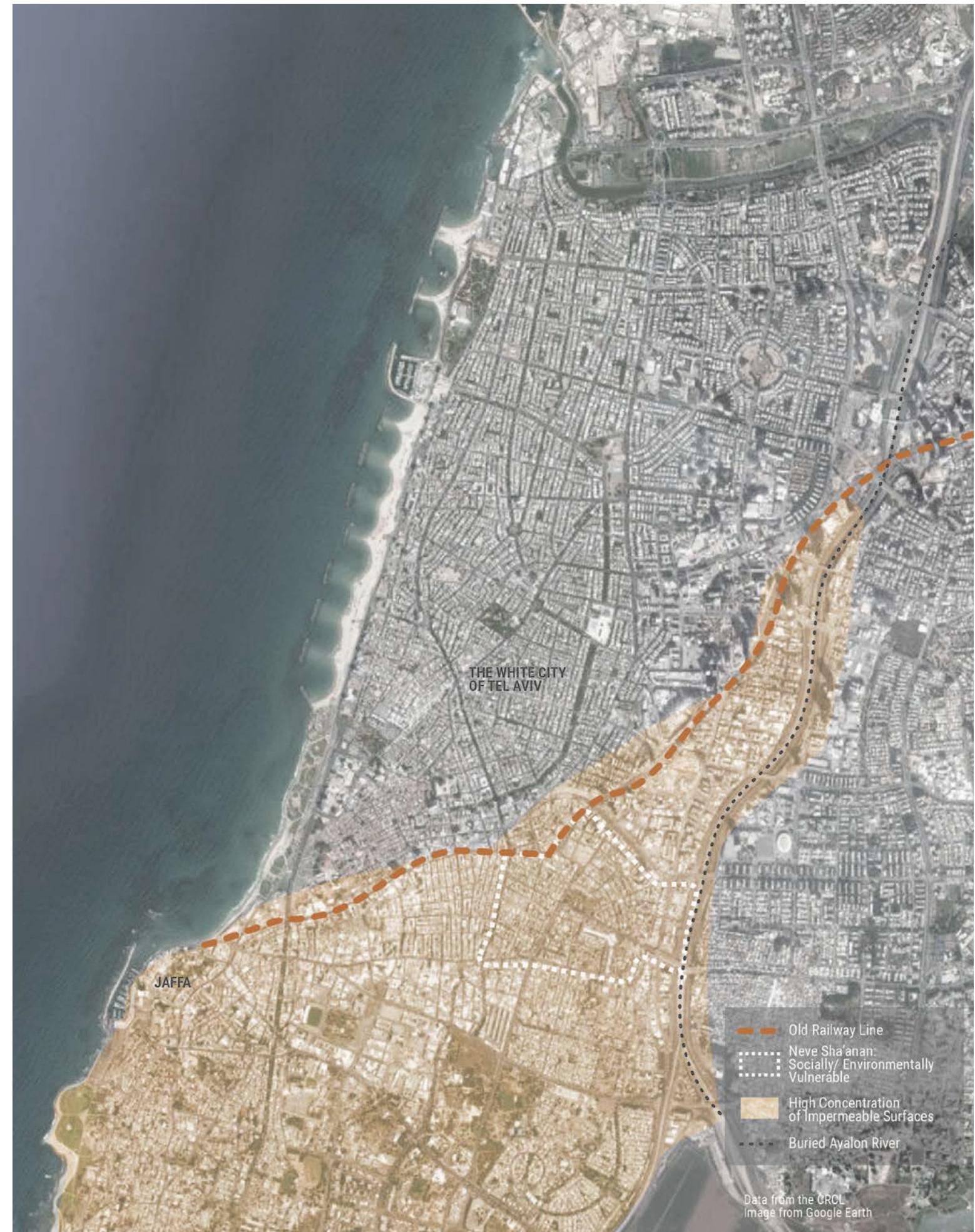
The neighborhood's "in-betweenness" is deemed as negative by the city that is unable to meet their needs. Therefore, our project aims to empower the neighborhood by daylighting its marginalized community and its buried assets.



Channelized Ayalon River:
Originally, the river flowed south-north and disembogued into the Mediterranean. Its path now holds a 10 lane highway and train rails, which connect to the rest of Israel. There are plans for further concretizing the river for transportation improvements and development. Image from Hidden Waters Blog.



Neve Sha'anun is a vibrant community:
Even though the neighborhood is segregated from the rest of the city, the neighbors have been able to create a close knit community. They hold their cultural events and ceremonies, and treasure their only open space, the Levinsky Park. Image from ONYA Collective



NEIGHBORHOOD ACTION LAB

The Neve Sha'anani Action Lab happens around the Levinsky Park, the heart of the neighborhood. It is a bottom-up/ top-down initiative. The community will partner with local NGOs, which will be funded by the municipality and private stakeholders to develop a toolkit to rebuild the neighborhood.

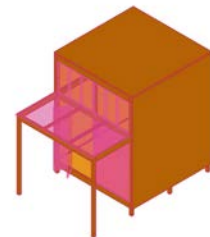


In collaboration with: Niharika Shekhawat, Antonia Medina Abel, Shalini Shah

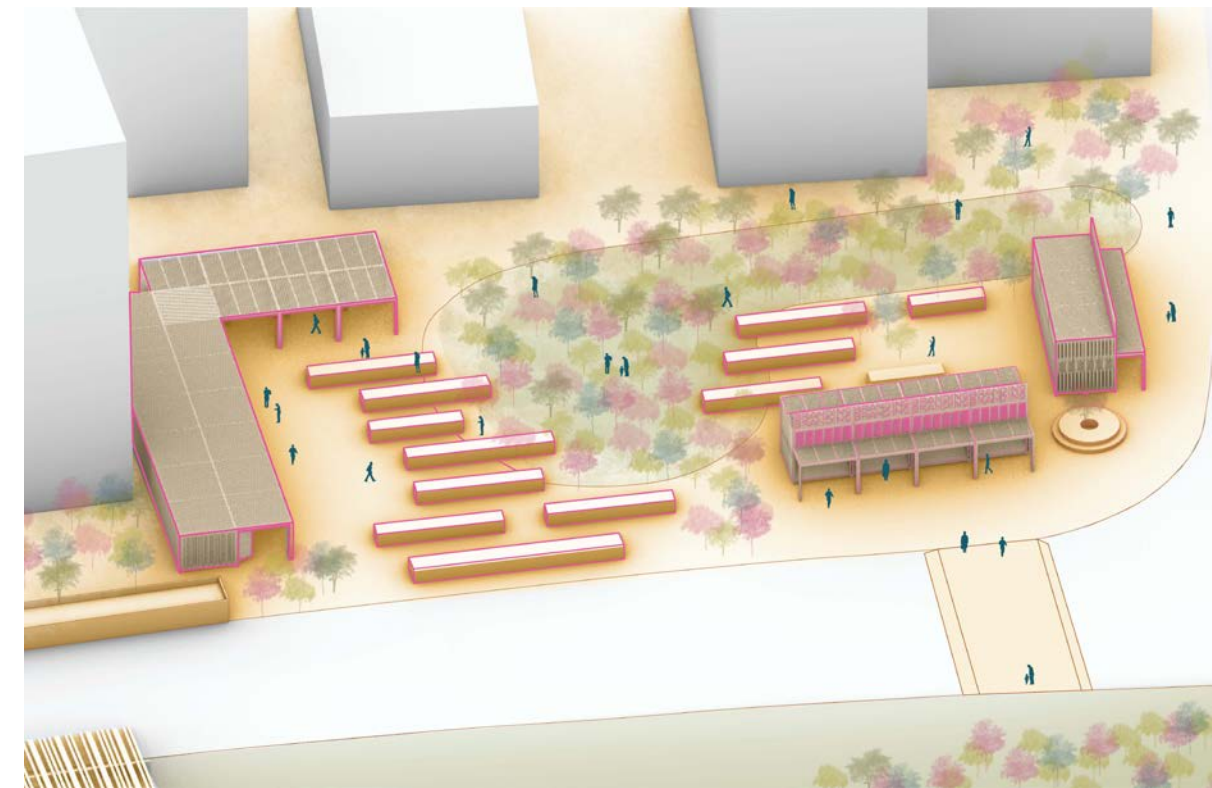
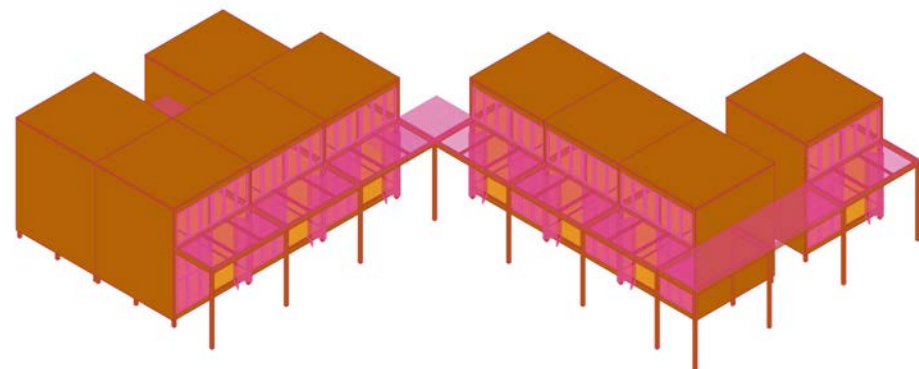
DAYLIGHTING PEOPLE, NEIGHBORHOOD AND ECOLOGY

A cooling hub and a marketplace are key spaces for this initiative. Levinsky Park is further celebrated by expanding its programs with a community shelter. The Action Lab will leverage social capital as an incentive for civic participation striving to bring positive change to the migrants quality of life.

COOLING HUB

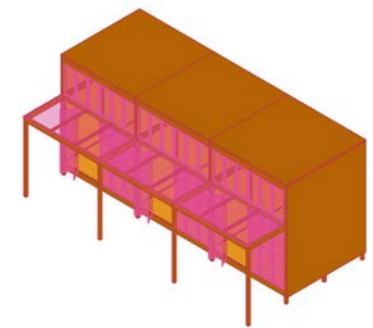


Spaces in between buildings:
Will serve as a platform
for social interactions and
celebrations in the community.

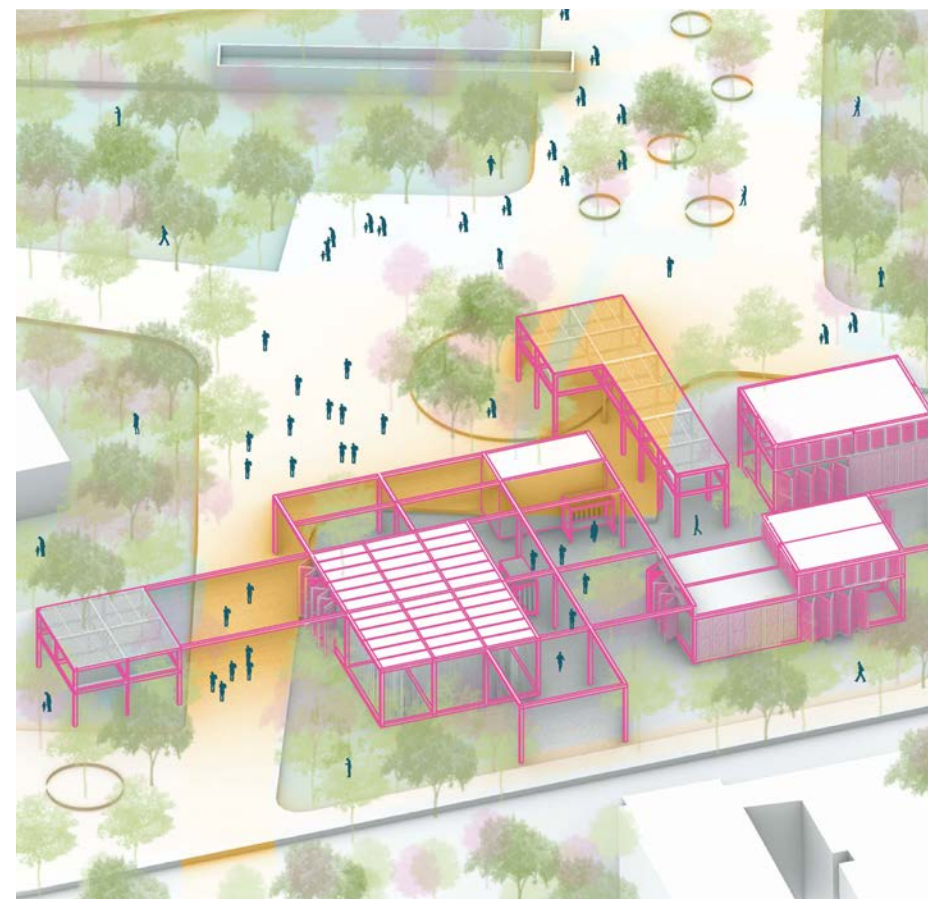


Parking lots to Marketplace:
To support programs that spur
the local economy and motivate
new partnerships.

NEVE SHA'ANAN MARKETPLACE



COMMUNITY SHELTER



*Shelter and Ecological
Stewardship Programs:*
Levinsky Park will be adapted to
welcome community members
in transition in a shelter, where
people will find a public kitchen,
mental counseling services. By
participating in the programs,
the members of the community
earn resident status.

COOLING HUB - IN BETWEEN SPACES

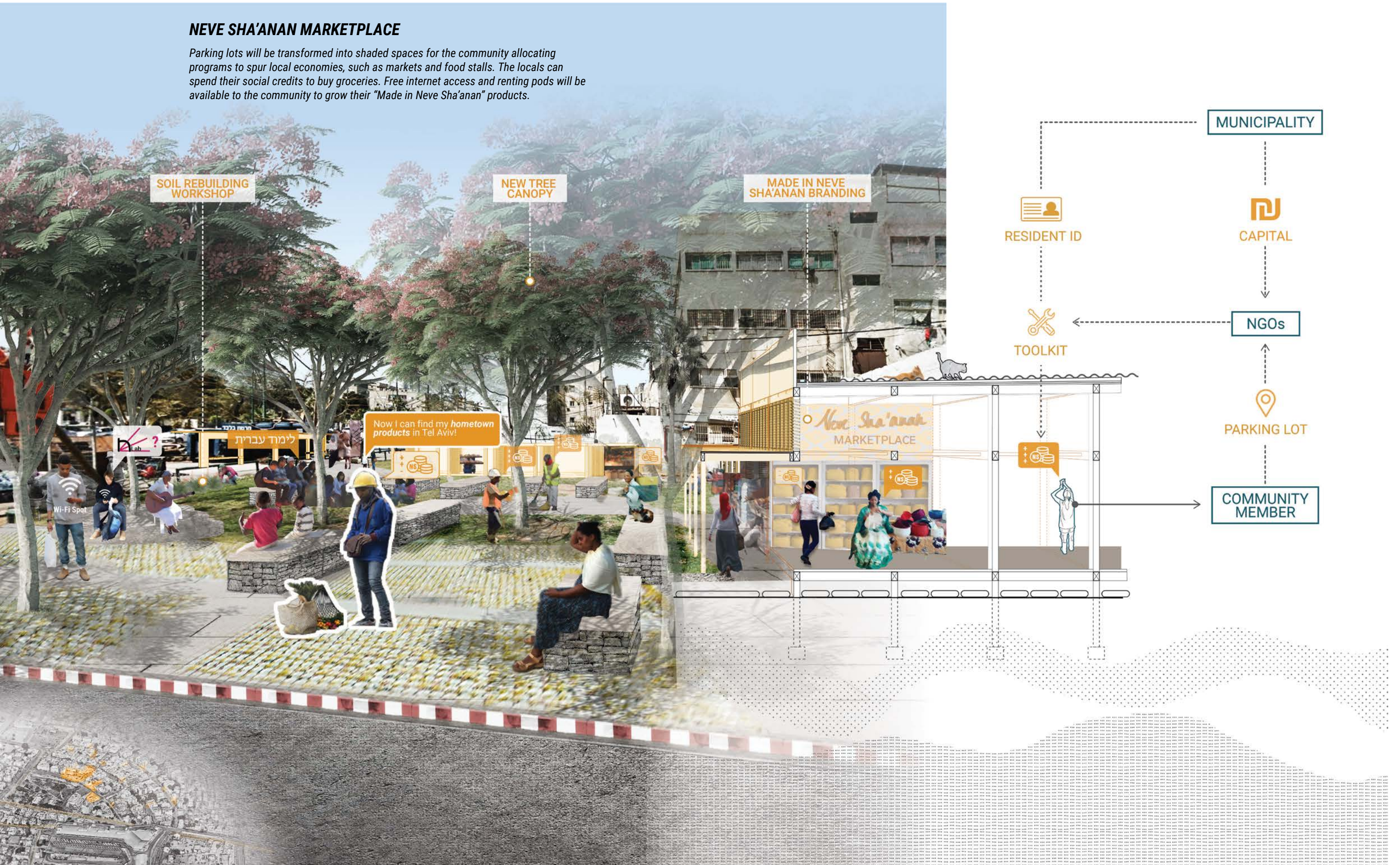
Members of the community will earn social credits by collaborating with the Action Lab in the in-between spaces to develop an intervention using the pod toolkit. While the adults rebuild their neighborhood, their babies stay in daycare run by other neighbors.

They will be used for neighbors celebrations and encounters. The modular pods are shaded structures for summer and will work as an extension for the small businesses and knitting workshops. Vertical gardens will be used to grow herbs by the community.



NEVE SHA'ANAN MARKETPLACE

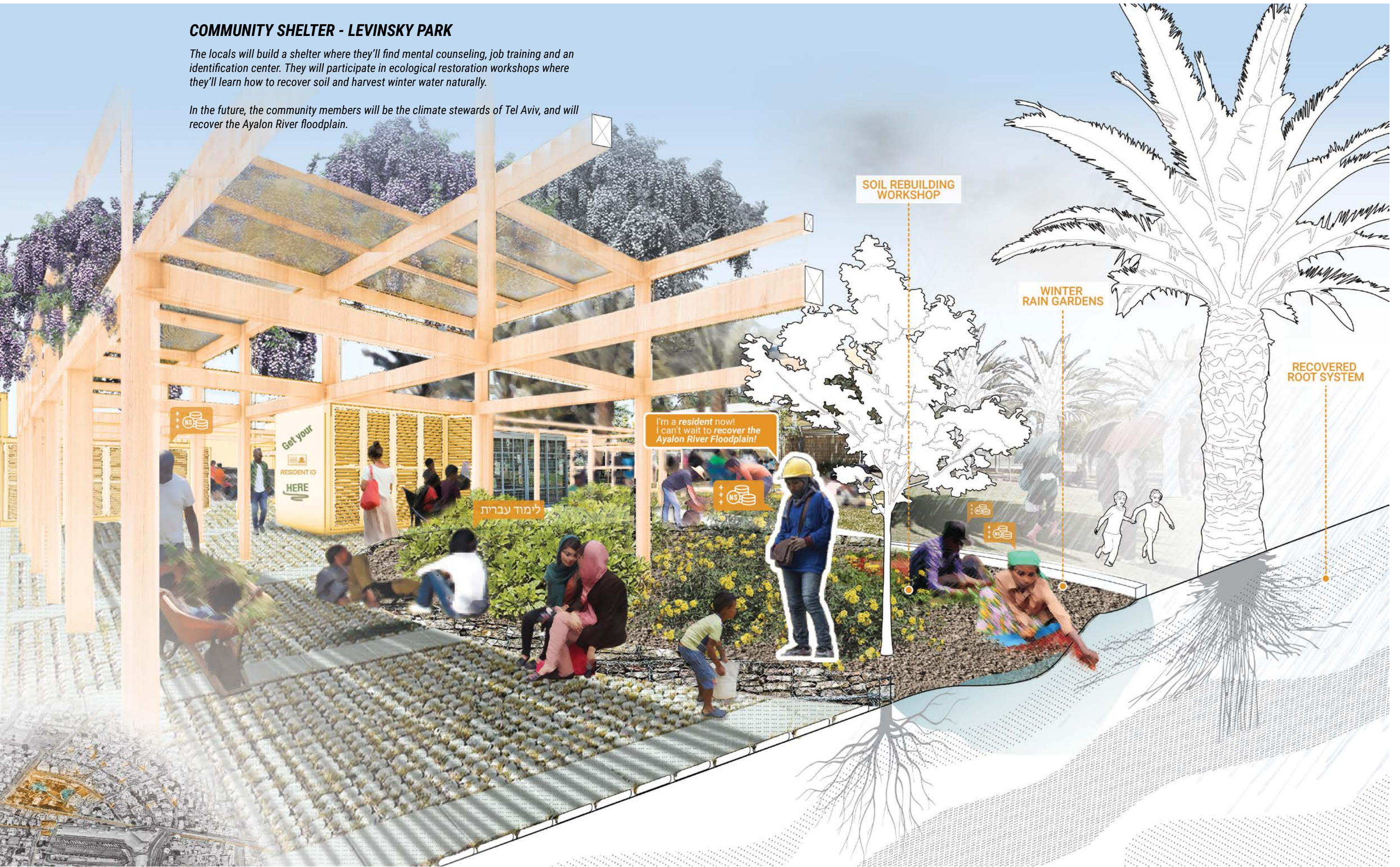
Parking lots will be transformed into shaded spaces for the community allocating programs to spur local economies, such as markets and food stalls. The locals can spend their social credits to buy groceries. Free internet access and renting pods will be available to the community to grow their "Made in Neve Sha'anán" products.



COMMUNITY SHELTER - LEVINSKY PARK

The locals will build a shelter where they'll find mental counseling, job training and an identification center. They will participate in ecological restoration workshops where they'll learn how to recover soil and harvest winter water naturally.

In the future, the community members will be the climate stewards of Tel Aviv, and will recover the Ayalon River floodplain.





CANDELARIA MAS POHMAJEVIC

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FALL

*Ephemeral reality
of unstable ecology.
An atrocious anxiety emerged-
unconscious. Or is it conscious?*

*Humans burning fires
and extracting disproportionately.
Between the world and our bodies
exist snapshots of distortion.*

SUMMER

*This brutal banality
has weakened our emotions.
It has shaped our own fears,
our own ruthless tortures.*

*Impermanent beings
in the forest of storms
have vanished nature's variance,
and taken its toll.*

SPRING ?

*The evergreen winters
the very dry soils
are so conspicuous, so dramatic.
There's no room for us all...*

*Hopeless spirit of my own.
Is it madness?*

*...
Shed some light into this hole,
fight them back,
the climate throes.*