# Portfolio.

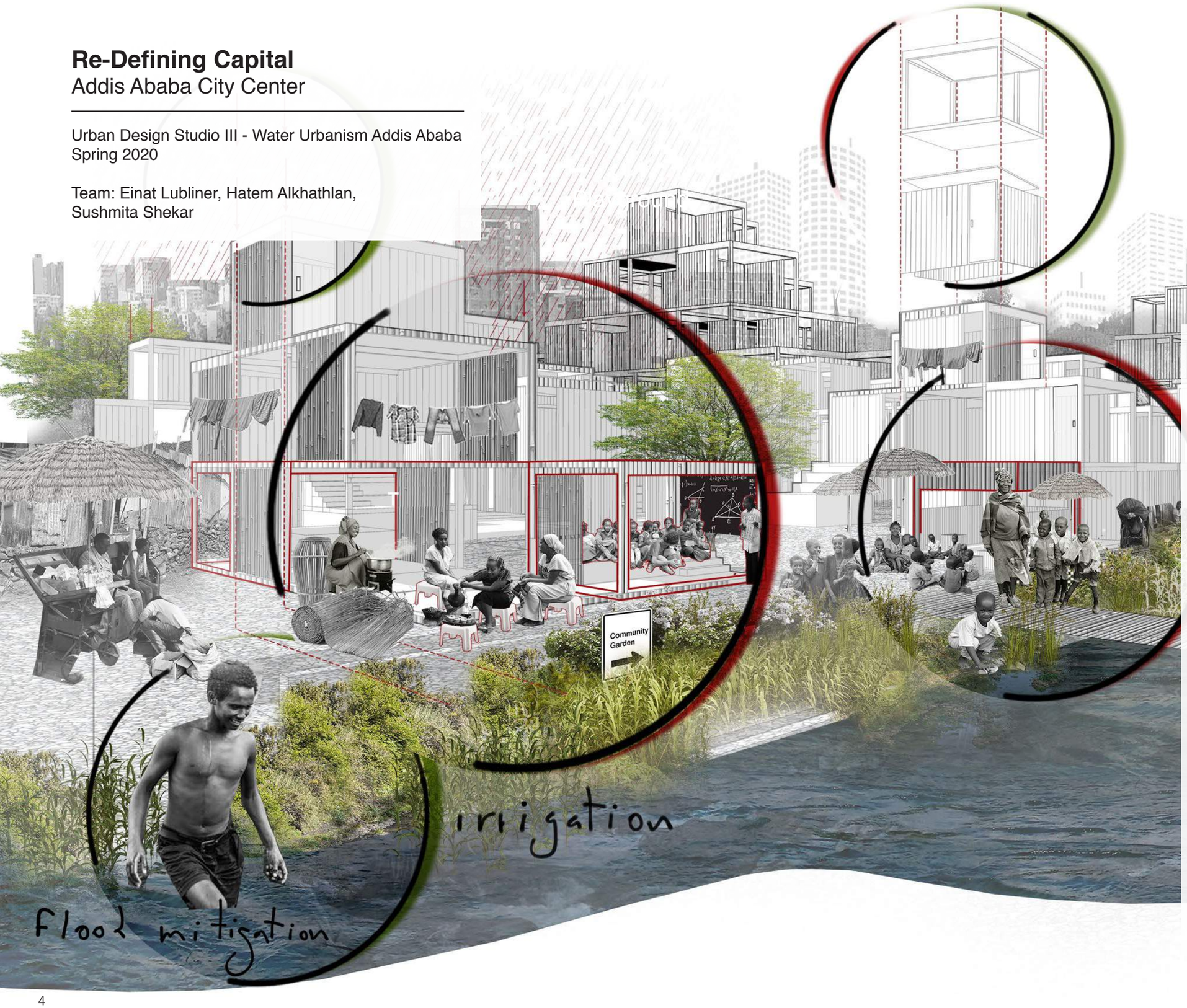
**Pratibha Singh**

Masters of Science in
Architecture and Urban Design
2019 - 2020

# Re-Defining Capital
## Addis Ababa City Center

Urban Design Studio III - Water Urbanism Addis Ababa
Spring 2020

Team: Einat Lubliner, Hatem Alkhathlan,
Sushmita Shekar

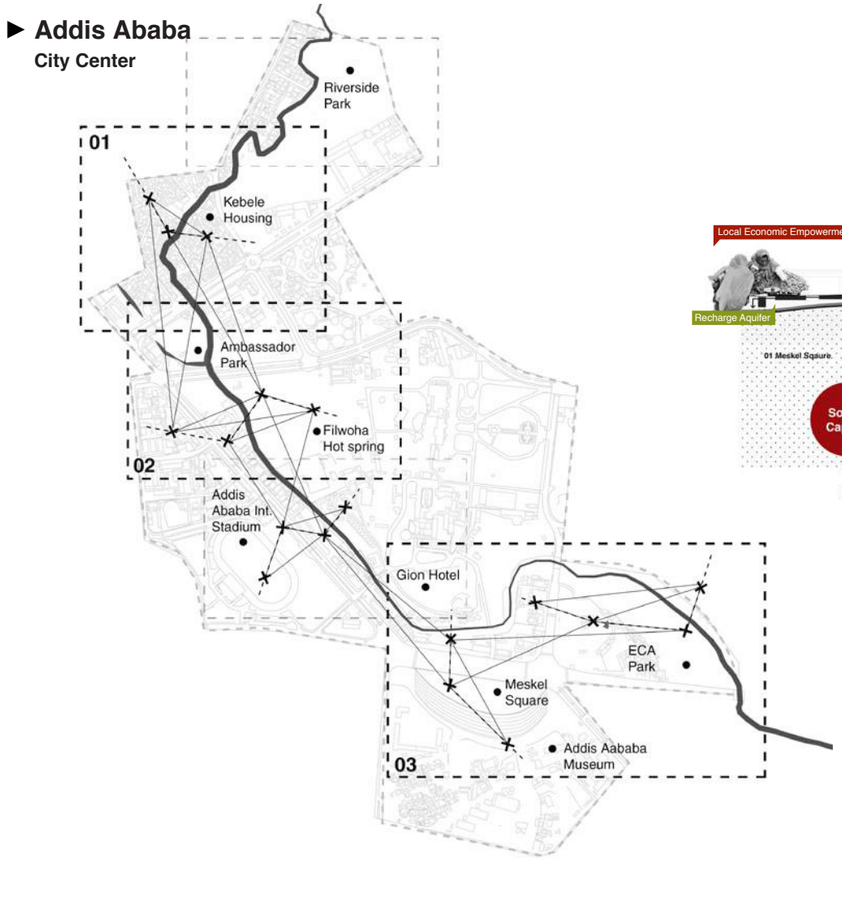



Addis Ababa is considered the diplomatic capital of Africa. Today, the main city center is going through rapid development including large influx of people and capital. The government and foreign developers are **implementing a generic vision of a 'modern developed city'.** Driven by foreign investments, which extract capital from the city rather than benefit the locals. Although perceived as progressive, this development is in fact **fragmenting the city**, **destroying ecosystems**, and **widening socioeconomic gaps**.

There is **ecological degradation** that will worsen with the Beautifying Sheger proposal to channelize the river by concreting its banks and creating **exclusive public spaces**, mimicking the global trend of riverfront development.**These imported ideologies of development fail to address the current challenges of Addis Ababa.**

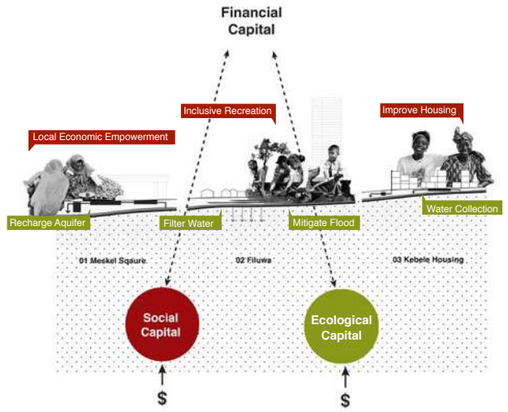
There is potential to reverse this type of urbanism driven solely by real estate interests to a **multifunctional capital system**. Hence we propose an inclusive development where financial capital is only a means towards enhancing social, and ecological capital.

## ► Addis Ababa
**City Center**




**Proposed Scenario**

Multifunctional

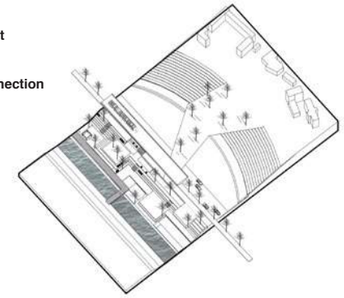


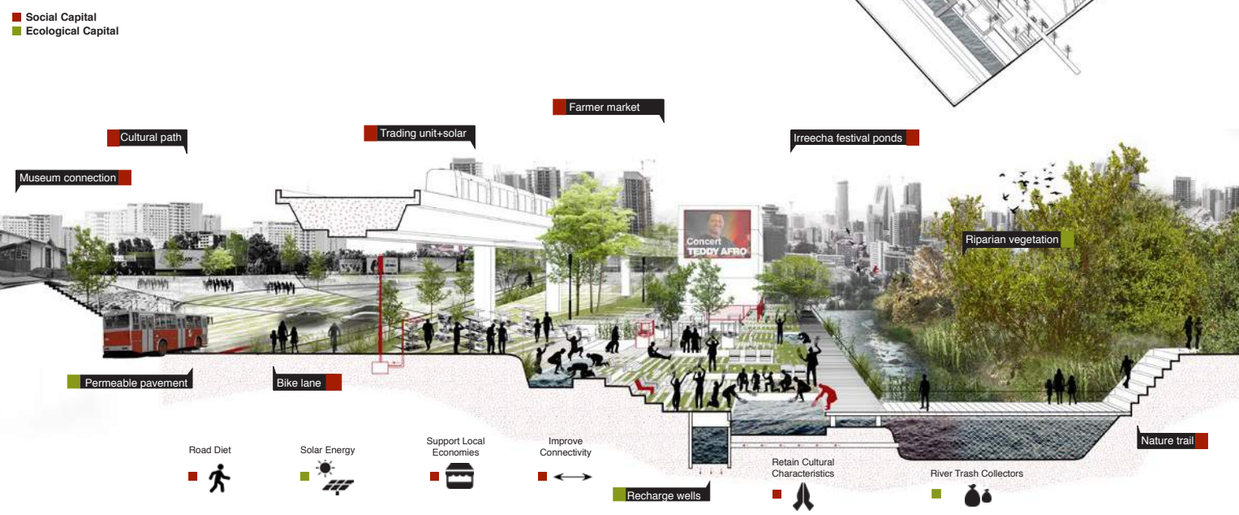

# What If?

**A "world class" city center is envisioned to leverage social and ecological capital in support of ecosystem restoration, an inclusive public realm and the local economy?**

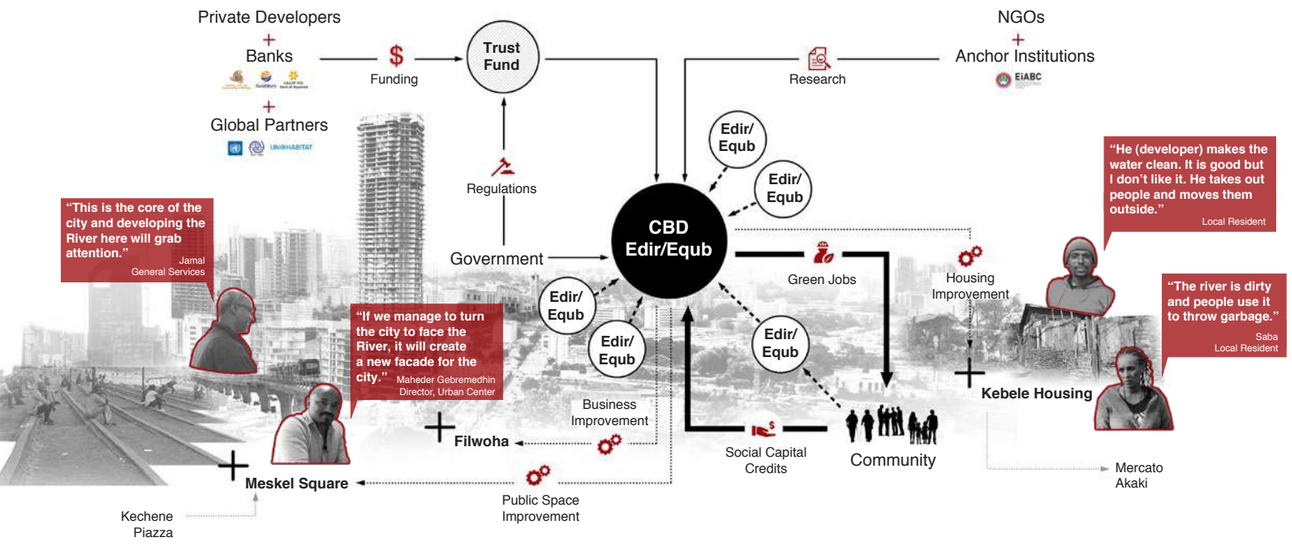
## Improving connectivity and flexibility of spaces

1. Activate vacant lot
2. Road diet
3. Bike lanes
4. Cultural path connection

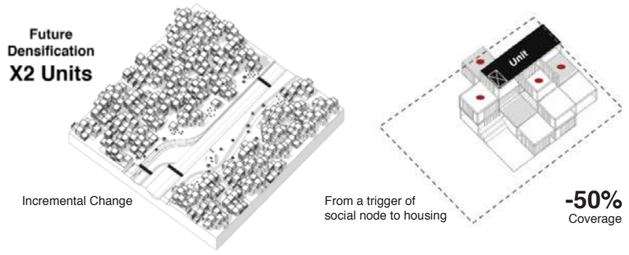





## Strengthening existing social organizations



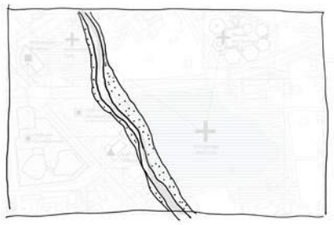

## Improving housing conditions through social and ecological networks



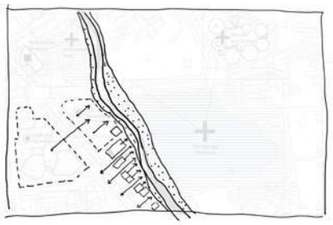

# Integrating Ecological Capital to the development of the city

**Social Capital**

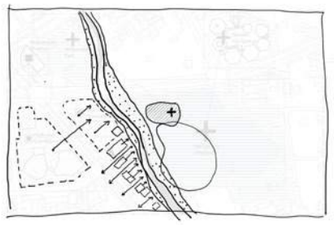
**Ecological Capital**



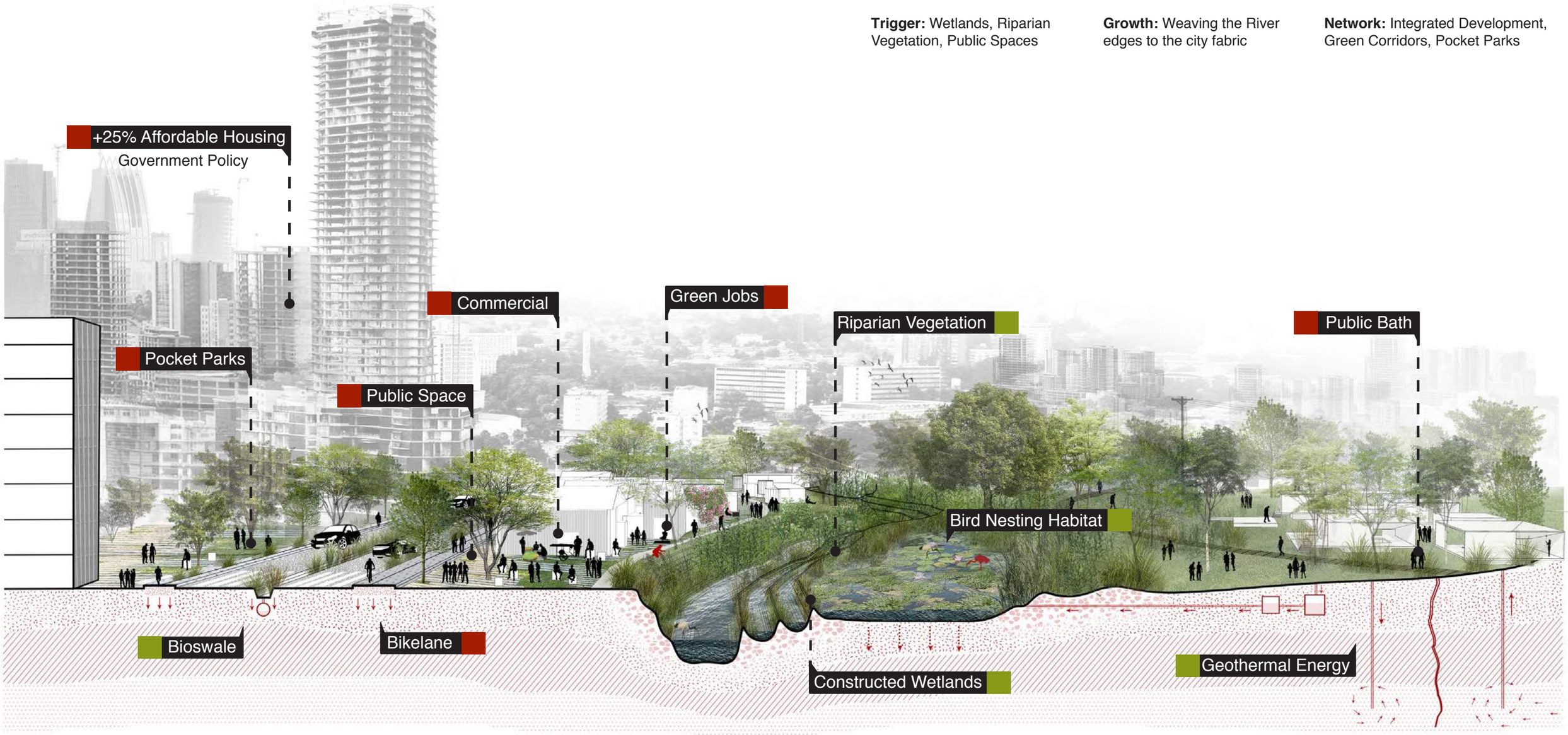
**Trigger:** Wetlands, Riparian Vegetation, Public Spaces



**Growth:** Weaving the River edges to the city fabric



**Network:** Integrated Development, Green Corridors, Pocket Parks




**Integrated Development**

**Permeable Surfaces**

**Improved Connectivity**

**Flood Mitigation Retention Ponds**

**Constructed Wetlands**

**Inclusive Public Facilities**

**Geothermal Energy**

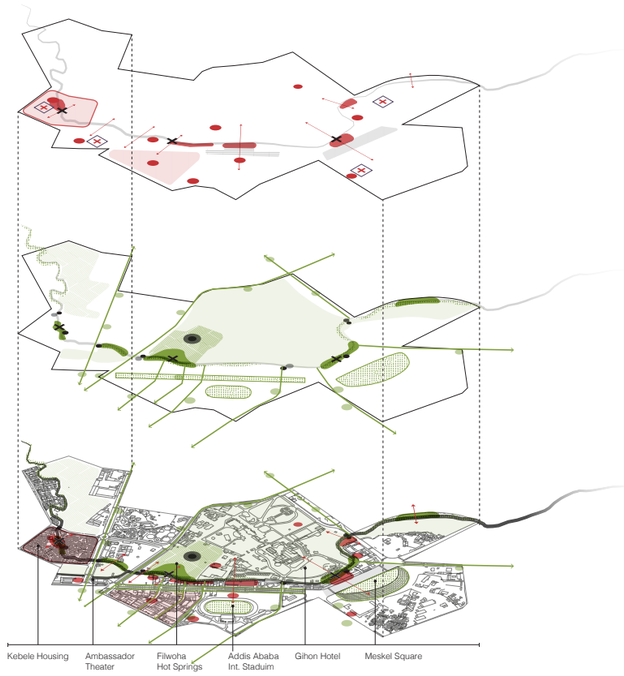
# Plan for sustainability through social and ecological systems

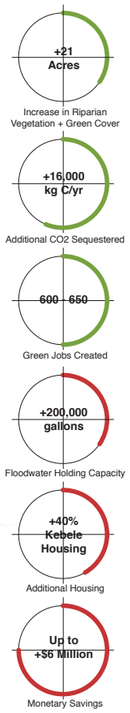
**Connectivity.**
Cultural & Social **Network**.
**Economic** Programes.
**Incremental** Housing & **Integrated** Development.

Accessibility to the river
Pedestrian zones
Community centers
Active recreational Spaces
Markets
Incremental housing
Integrated development

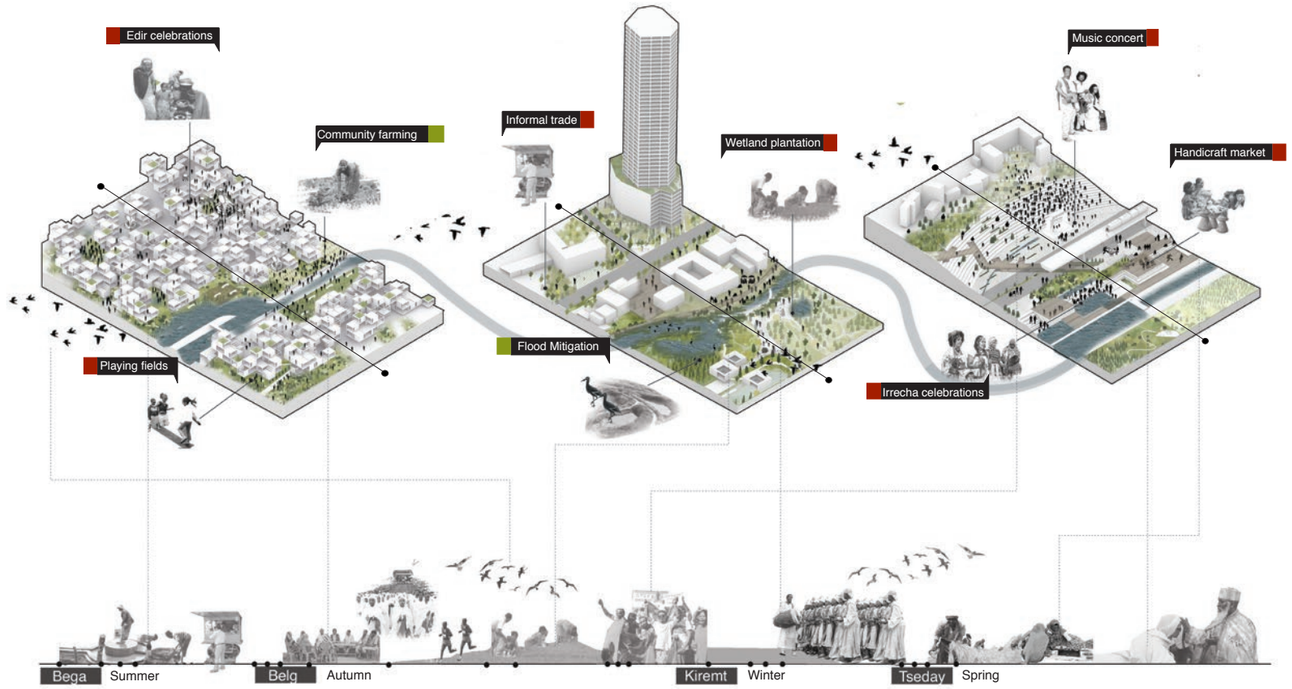
Ecological **restoration** and **expansion.**
Water **cleaning**, **collection** & **recharge**.
Sewage **infrastructure**.

Green avenues
Pocket parks
Ecological
Riparian vegetation
Retention ponds
Permeable surfaces
Geothermal
STPs
Trash collectors

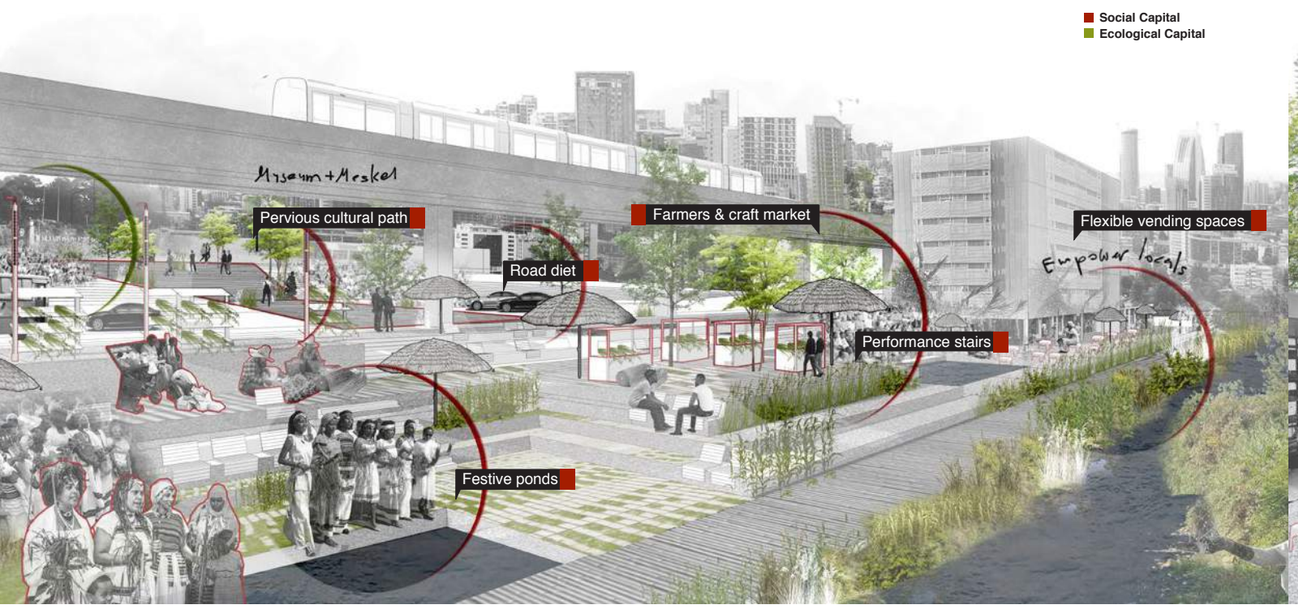


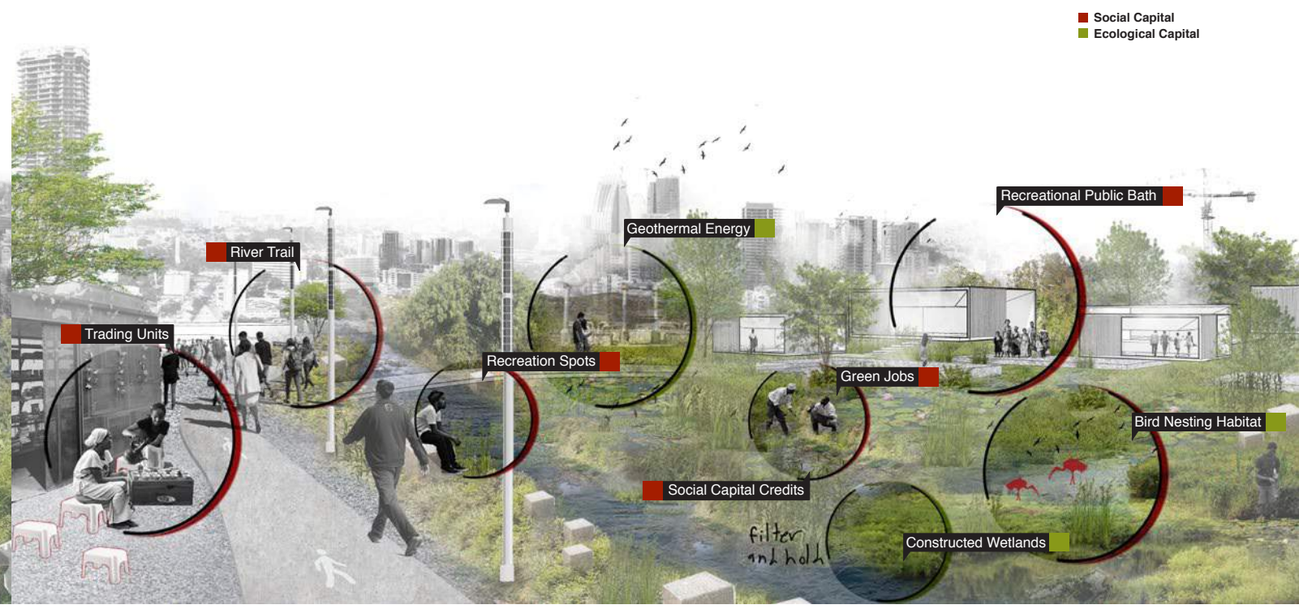

# Flexible design solutions that are resilient and adaptive to growth




# Enabling the River as a cultural asset




# Utilizing the recreational and ecosystem service potential of the River



# Green It, Clean It!

Urban Design Studio II - Hudson Valley Region
Fall 2019

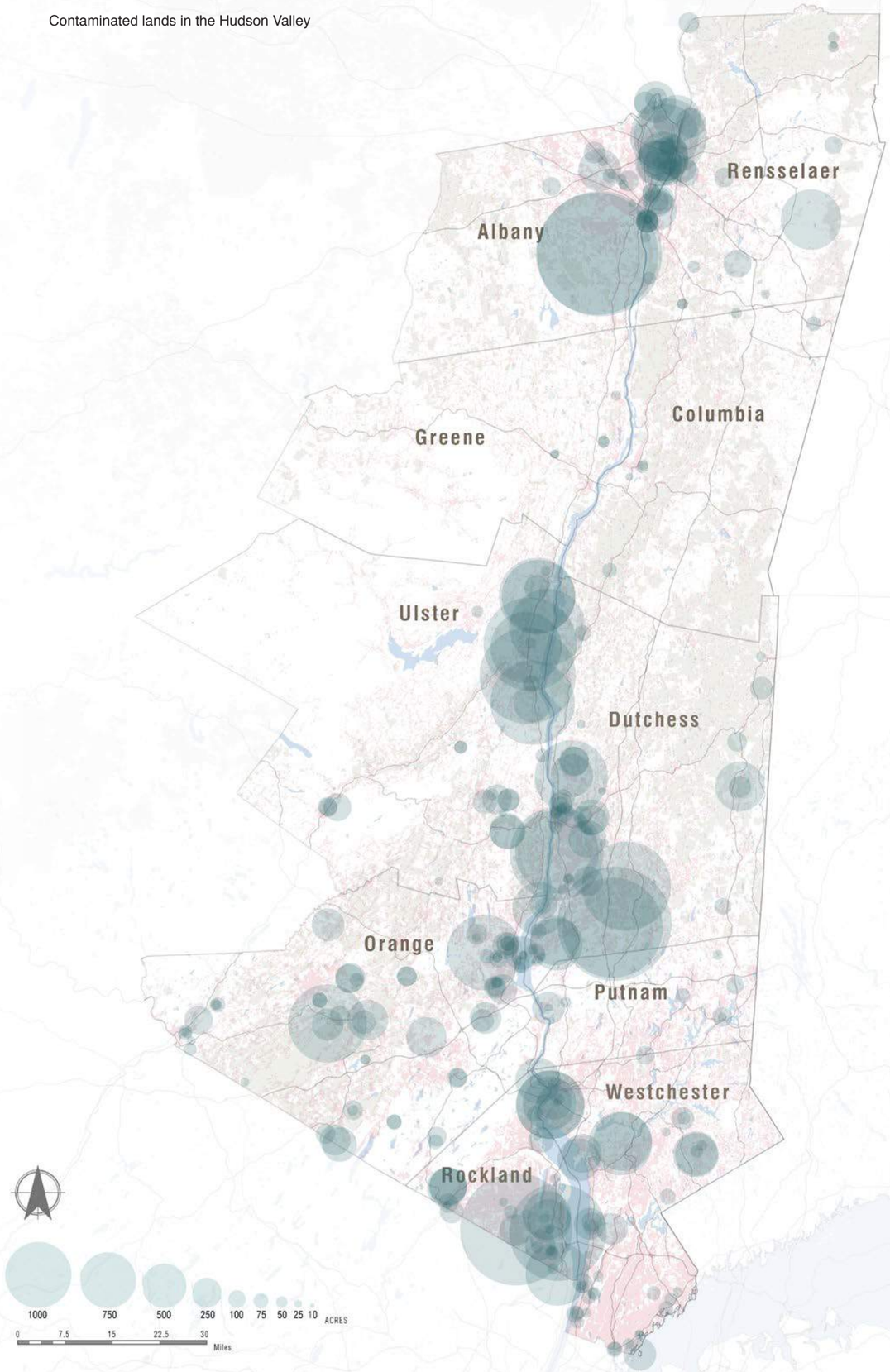
Team: Anai Perez, Danwei Pan, Zixuan Zhang

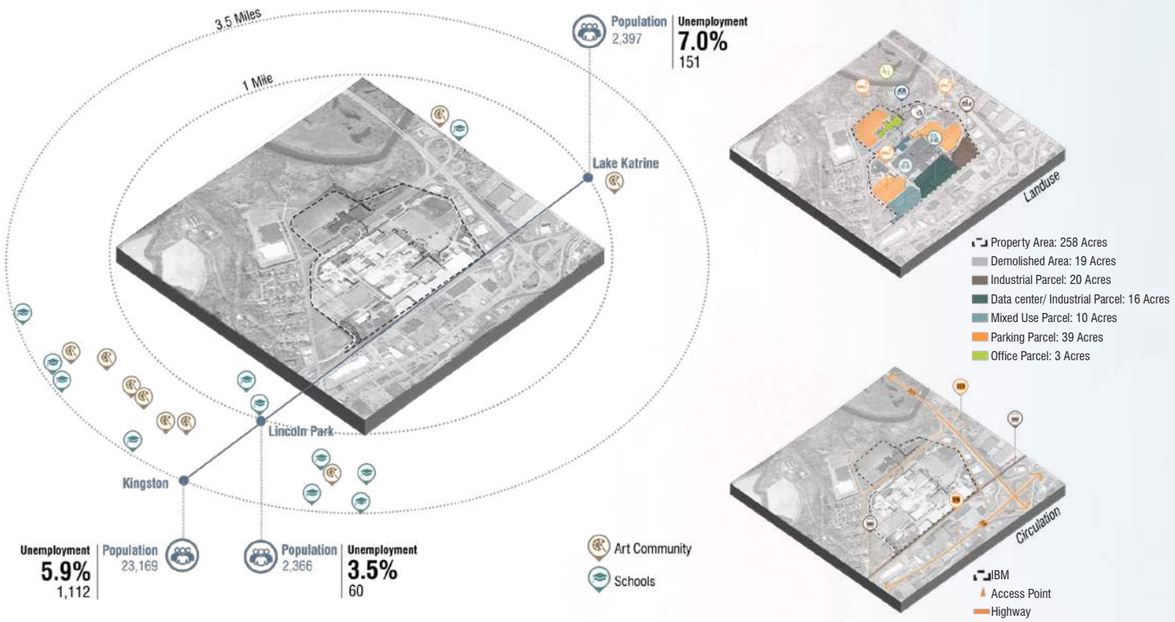
Around 130,000 acres of land in the Hudson Valley have been contaminated by the direct and indirect influence of industries. Our project proposes to transform these wastelands into community assets that can tackle contamination, while improving soil health, sequestering carbon and restoring the productivity of the land.

This process enables us to open up the site to the people and develop further relationships with the surroundings, providing recreational and economic benefits for the community.

The programs generate a wide range of jobs in research and manufacturing sectors, as well as low skilled maintenance jobs, supporting the low income and de-industrialized communities and strengthening the local economy. These sites become places for continued research and education about nature as an enabling infrastructure.

Contaminated lands in the Hudson Valley














Sectional timeline, policies and phasing on the site

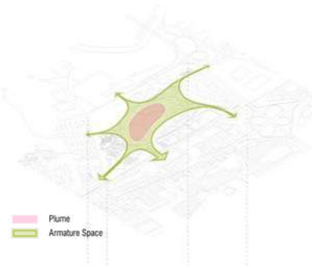
**LEGEND**

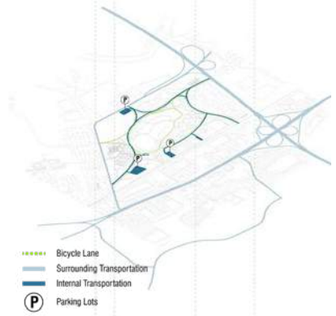
1 - Research Center
2 - Phytoremediation Garden
3 - Winter Garden
4 - Pollinator Garden
5 - Greenhouse
6 - Farm to Table Copackers
7 - Food Processing Center
8 - Indoor soccer fields
9 - Affordable Housing
10 - Incubators
11 - Playfields
12 - Playground
13 - Trail

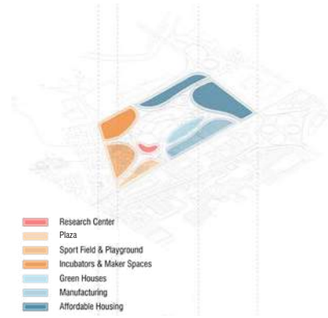
N

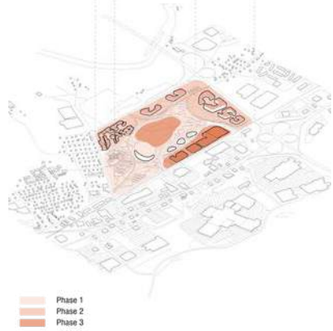
0 25M 50M 100M 200M



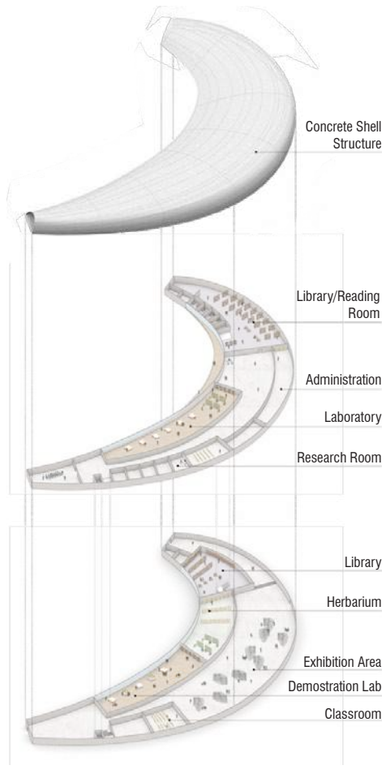



## Research Center








**Trees**

- Canadian Serviceberry *Amelanchier canadensis*
- Red Maple *Acer rubrum*
- White Birch *Betula populifolia*

**Shrubs**

- Wild Rhododendron *Rhododendron maximum*
- Sweet Viburnum *Viburnum lentago*
- Lowbush Blueberry *Vaccinium angustifolium*

**Perennials**

- Marsh Blazing Star *Liatris scariosa*
- Black-eyed Susan *Rudbeckia hirta*
- Butterfly Milkweed *Asclepias tuberosa*

**Trees**

- Eastern Red Cedar *Juniperus virginiana*
- Green Hawthorn *Crataegus viridis*
- American Holly *Ilex opaca*

**Shrubs**

- False Cypress *Chamaecyparis obtusa*
- Inkberry *Ilex glabra*
- 'Jolly Red' Winterberry *Ilex verticillata*

**Perennials**

- Eastern Blazing Star *Liatris scariosa*
- Switchgrass *Panicum virgatum*

**Trees**

- Willow *Salix spp.*
- Red Mulberry *Morus rubra*
- Loblolly Pine *Pinus taeda*
- Eastern cottonwoods *Populus deltoides*
- Hybrid Poplar *Populus t. x Populus deltoides*

**Annuals**

- Alfalfa *Medicago sativa*
- Bermuda grass *Cynodon dactylon*

**Perennials**

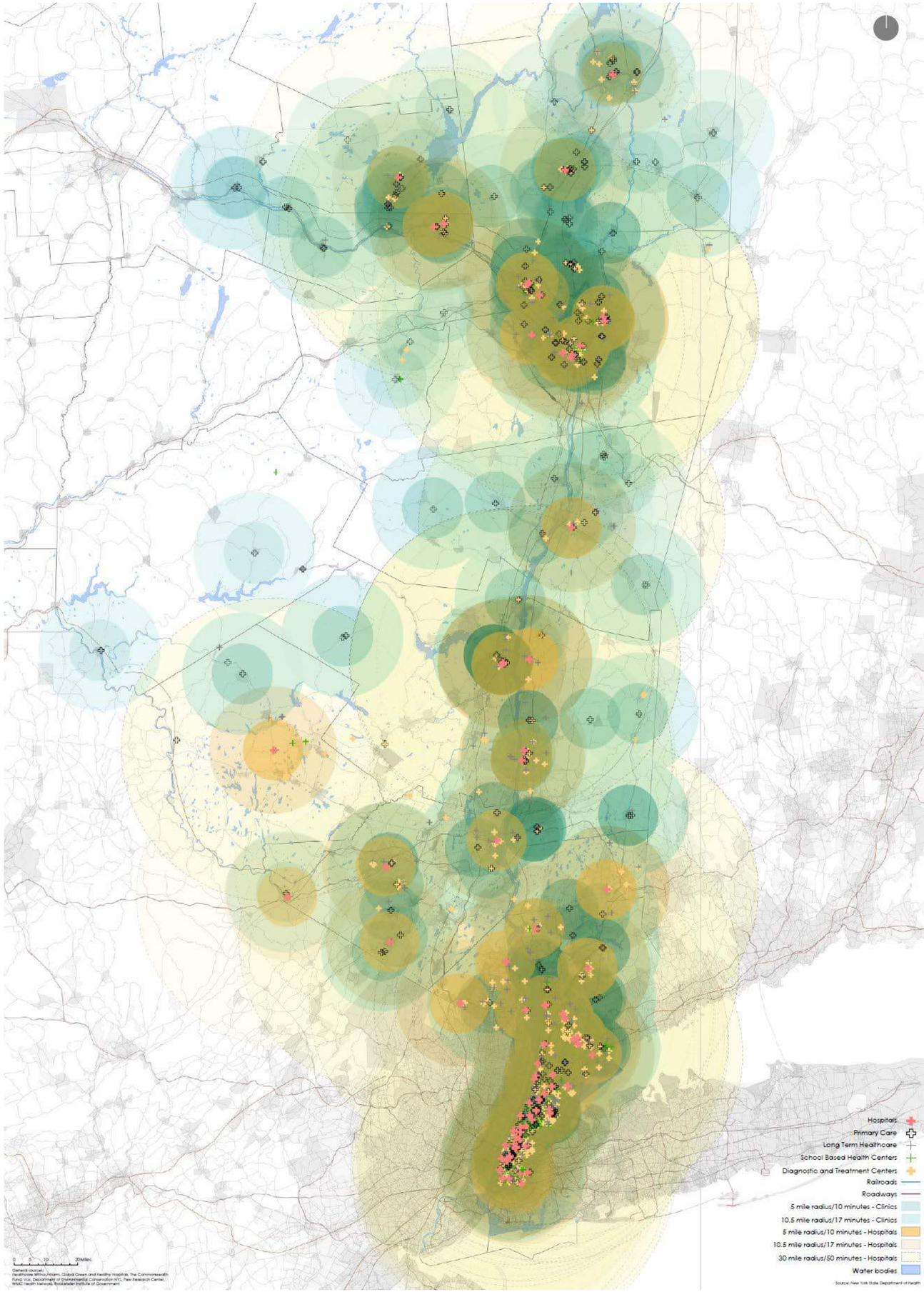
- Hairy Goldenrod *Solidago hispida*

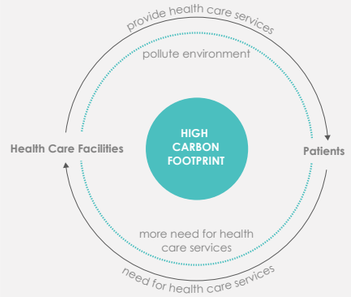
# Towards an Equitable Health care System
in the Hudson Valley

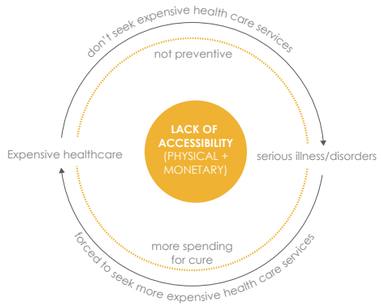
Urban Design Studio II - Hudson Valley Region
Fall 2019

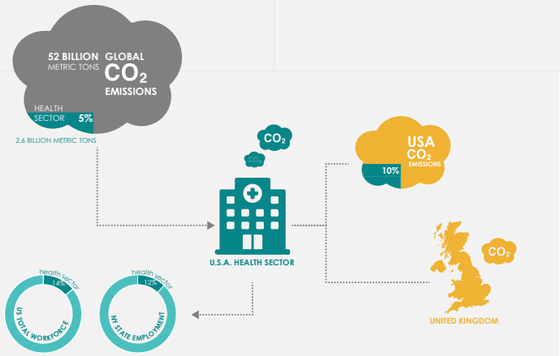
Team: Claudia Kleffmann, Niharika Shekhawat, Yi Zhang

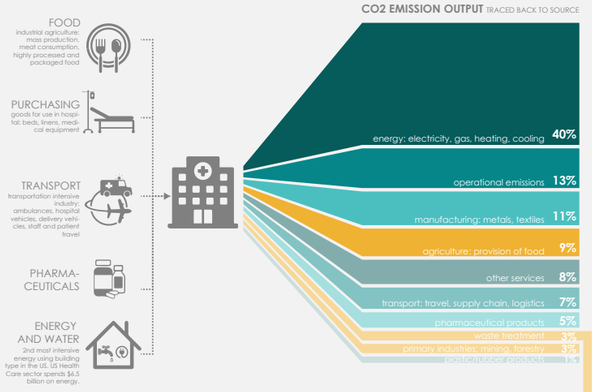
The present Health care system in the Hudson Valley lacks accessibility, both in physical and also monetary aspects. The internal structure of the private and public health care system and insurance make it hard for citizens to access and afford basic health care. This leads to a larger uninsured population and creates a vicious cycle, since unattended illnesses usually end up getting worse and therefore becoming more expensive to treat. In addition, rural areas are disconnected from basic medical care, making them more dependent on private cars, which contribute to a bad environment. Hence, another vicious cycle is created with the Carbon Footprint of the Health care sector, which represents 10% of the total Carbon Footprint of the United States. This leads to environmental pollution and climate change, eventually leading to more health issues needing health care. However, there are multiple ways of reducing this footprint, through working with local communities and retrofitting of buildings. By reducing carbon emissions, we can lower the amount of money spent, allowing for the reinvestment and proper distribution for a just and equitable health care system.

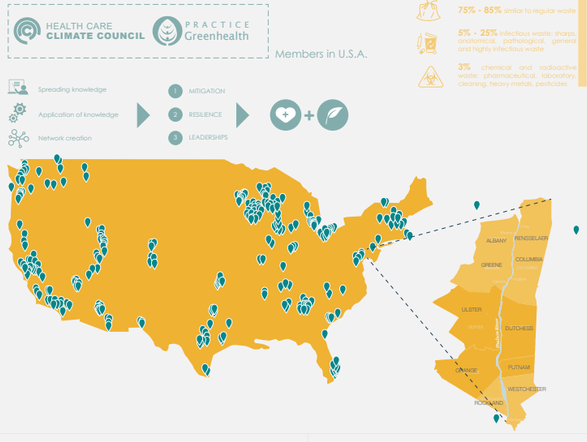


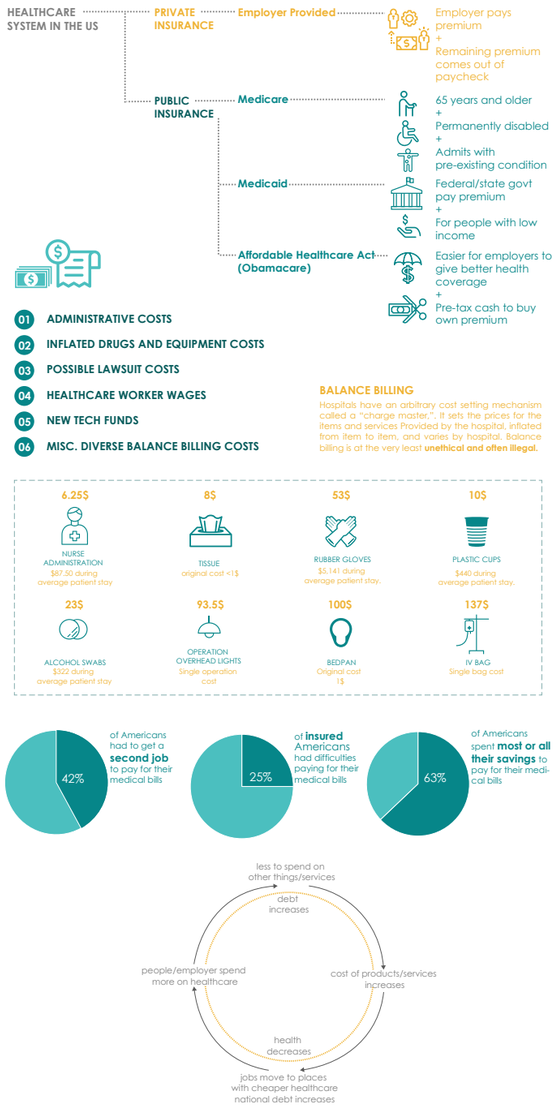

provide health care services
pollute environment
HIGH CARBON FOOTPRINT
Health Care Facilities
Patients
more need for health care services
need for health care services


don't seek expensive health care services
not preventive
LACK OF ACCESSIBILITY (PHYSICAL + MONETARY)
Expensive healthcare
serious illness/disorders
more spending for cure
forced to seek more expensive health care services

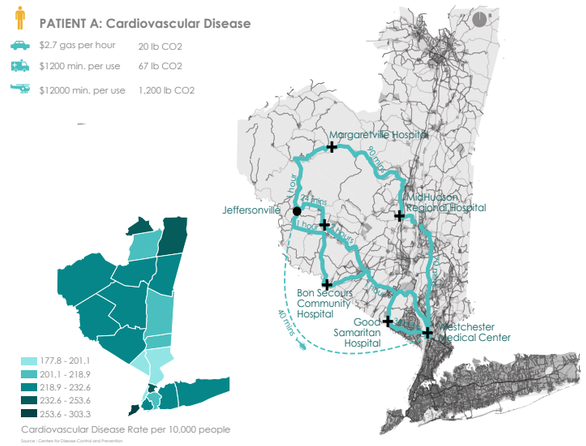

52 BILLION METRIC TONS GLOBAL $CO_2$ EMISSIONS
HEALTH SECTOR 5%
2.6 BILLION METRIC TONS
U.S.A. HEALTH SECTOR
USA $CO_2$ EMISSIONS
10%
UNITED KINGDOM
US TOTAL WORKFORCE
NY STATE EMPLOYMENT

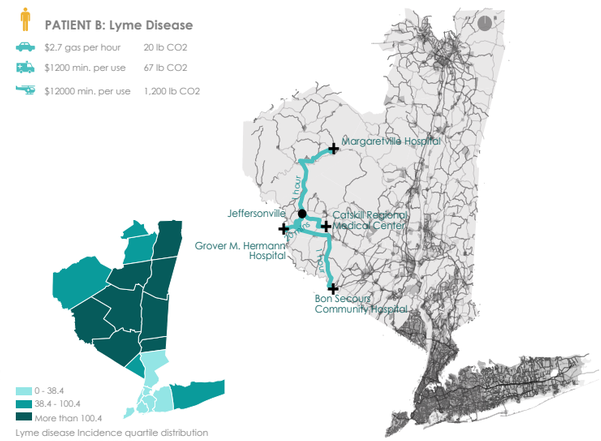

CO2 EMISSION OUTPUT TRACED BACK TO SOURCE
FOOD
PURCHASING
TRANSPORT
PHARMA-CEUTICALS
ENERGY AND WATER
energy: electricity, gas, heating, cooling 40%
operational emissions 13%
manufacturing: metals, textiles 11%
agriculture: provision of food 9%
other services 8%
transport: travel, supply chain, logistics 7%
pharmaceutical products 5%
waste treatment 3%
primary industries: mining, forestry 3%

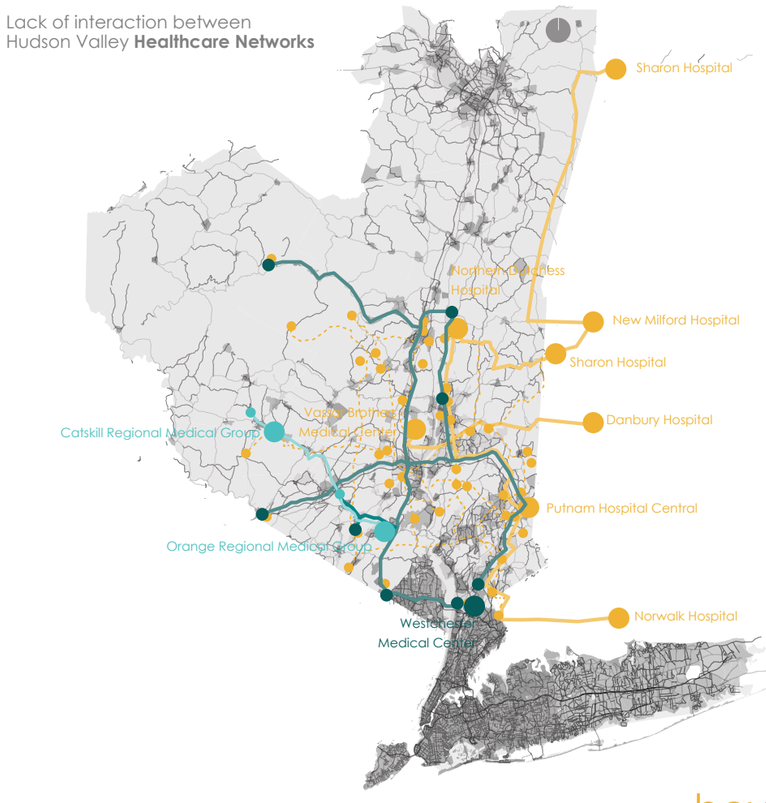

HEALTH CARE CLIMATE COUNCIL
PRACTICE Greenhealth
Members in U.S.A.
Spreading knowledge
Application of knowledge
Network creation
1 MITIGATION
2 RESILIENCE
3 LEADERSHIPS
ALBANY
RENSSELAER
GREENE
COLUMBIA
ULSTER
DUTCHESS
ORANGE
PUTNAM
WESTCHESTER
ROCKLAND

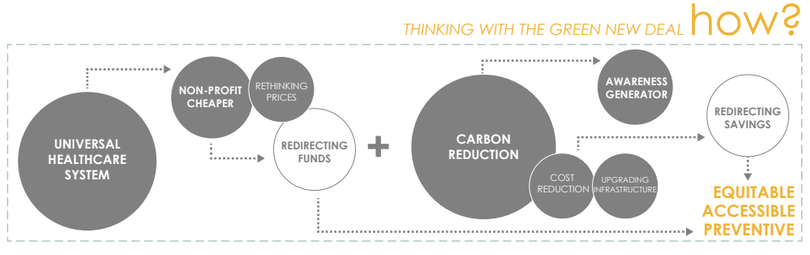

HEALTHCARE SYSTEM IN THE US
PRIVATE INSURANCE
Employer Provided
Employer pays premium + Remaining premium comes out of paycheck
PUBLIC INSURANCE
Medicare
65 years and older + Permanently disabled + Admits with pre-existing condition
Medicaid
Federal/state govt pay premium + For people with low income
Affordable Healthcare Act (Obamacare)
Easier for employers to give better health coverage + Pre-tax cash to buy own premium
01 ADMINISTRATIVE COSTS
02 INFLATED DRUGS AND EQUIPMENT COSTS
03 POSSIBLE LAWSUIT COSTS
04 HEALTHCARE WORKER WAGES
05 NEW TECH FUNDS
06 MISC. DIVERSE BALANCE BILLING COSTS
BALANCE BILLING
Hospitals have an arbitrary cost setting mechanism called a "charge master,". It sets the prices for the items and services Provided by the hospital, inflated from item to item, and varies by hospital. Balance billing is at the very least unethical and often illegal.
6.25$ NURSE ADMINISTRATION $87.50 during average patient stay
8$ TISSUE original cost <1$
53$ RUBBER GLOVES $5.141 during average patient stay.
10$ PLASTIC CUPS $440 during average patient stay.
23$ ALCOHOL SWABS $322 during average patient stay
93.5$ OPERATION OVERHEAD LIGHTS Single operation cost
100$ BEDPAN Original cost 1$
137$ IV BAG Single bag cost
42% of Americans had to get a second job to pay for their medical bills
25% of insured Americans had difficulties paying for their medical bills
63% of Americans spent most or all their savings to pay for their medical bills
less to spend on other things/services
debt increases
cost of products/services increases
health decreases
jobs move to places with cheaper healthcare national debt increases
people/employer spend more on healthcare

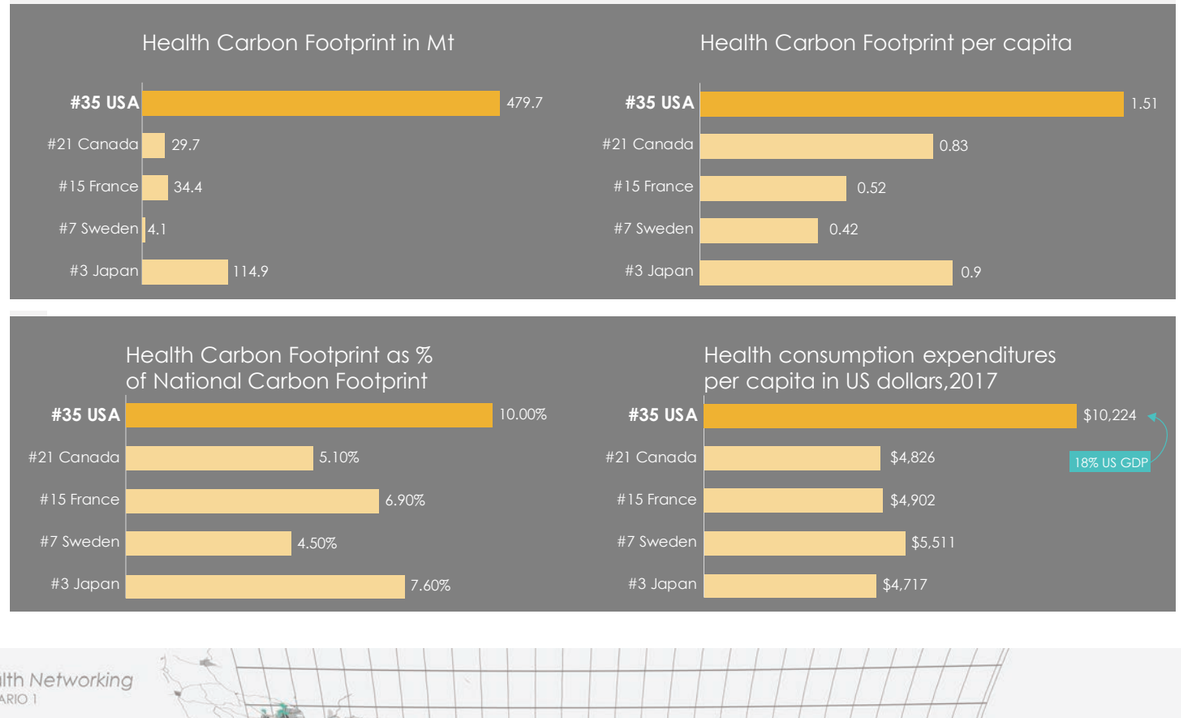


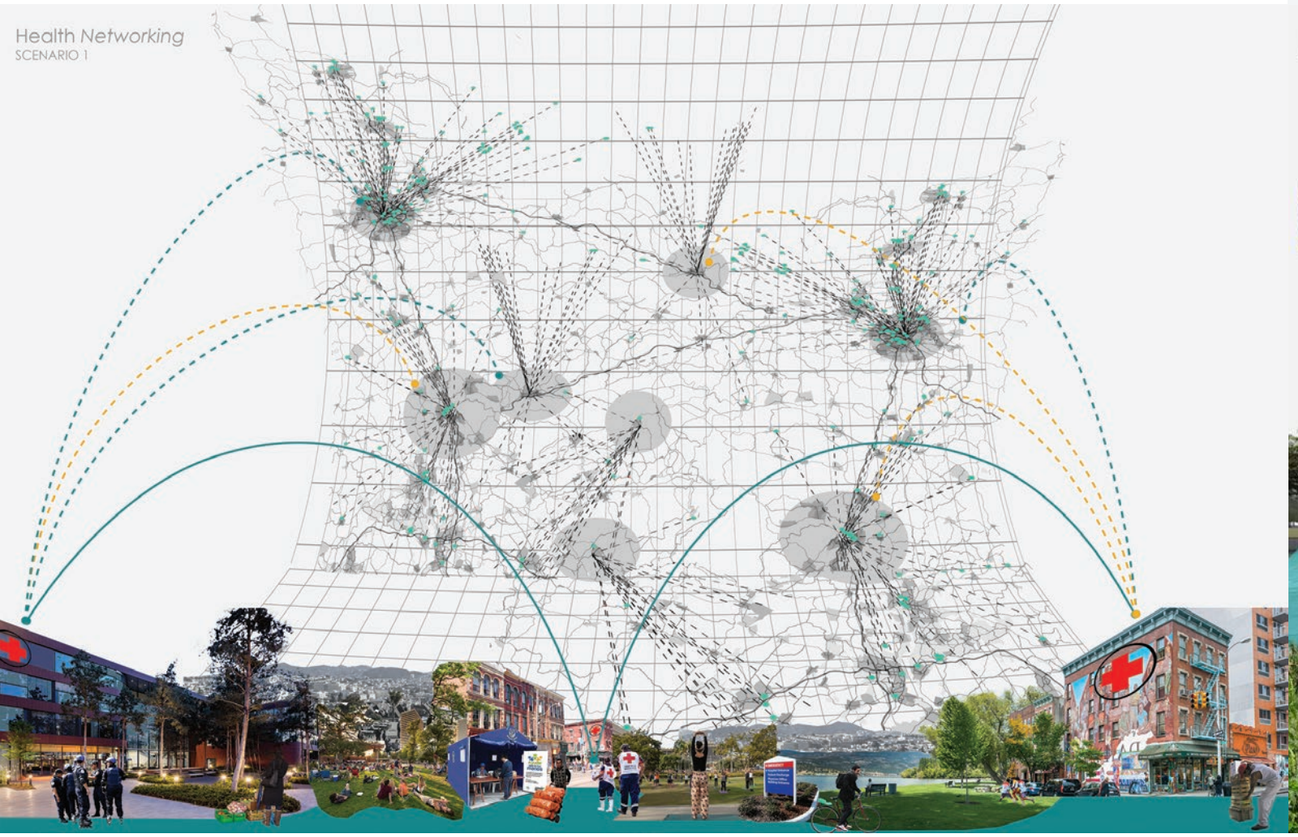

PATIENT A: Cardiovascular Disease
$2.7 gas per hour 20 lb CO2
$1200 min. per use 67 lb CO2
$12000 min. per use 1,200 lb CO2
Margaretville Hospital
Jeffersonville
Mid-Hudson Regional Hospital
Bon Secours Community Hospital
Good Samaritan Hospital
Westchester Medical Center
177.8 - 201.1
201.1 - 218.9
218.9 - 232.6
232.6 - 253.6
253.6 - 303.3
Cardiovascular Disease Rate per 10,000 people


PATIENT B: Lyme Disease
$2.7 gas per hour 20 lb CO2
$1200 min. per use 67 lb CO2
$12000 min. per use 1,200 lb CO2
Margaretville Hospital
Jeffersonville
Catskill Regional Medical Center
Grover M. Hermann Hospital
Bon Secours Community Hospital
0 - 38.4
38.4 - 100.4
More than 100.4
Lyme disease incidence quartile distribution


Lack of interaction between Hudson Valley Healthcare Networks
Sharon Hospital
Northern Dutchess Hospital
New Milford Hospital
Sharon Hospital
Danbury Hospital
Vassar Brothers Medical Center
Catskill Regional Medical Group
Putnam Hospital Central
Orange Regional Medical Group
Westchester Medical Center
Norwalk Hospital


THINKING WITH THE GREEN NEW DEAL how?
UNIVERSAL HEALTHCARE SYSTEM
NON-PROFIT CHEAPER
RETHINKING PRICES
REDIRECTING FUNDS
CARBON REDUCTION
AWARENESS GENERATOR
REDIRECTING SAVINGS
COST REDUCTION
UPGRADING INFRASTRUCTURE
EQUITABLE ACCESSIBLE PREVENTIVE


Health Carbon Footprint in Mt
#35 USA 479.7
#21 Canada 29.7
#15 France 34.4
#7 Sweden 4.1
#3 Japan 114.9
Health Carbon Footprint per capita
#35 USA 1.51
#21 Canada 0.83
#15 France 0.52
#7 Sweden 0.42
#3 Japan 0.9
Health Carbon Footprint as % of National Carbon Footprint
#35 USA 10.00%
#21 Canada 5.10%
#15 France 6.90%
#7 Sweden 4.50%
#3 Japan 7.60%
Health consumption expenditures per capita in US dollars,2017
#35 USA $10,224
#21 Canada $4,826
#15 France $4,902
#7 Sweden $5,511
#3 Japan $4,717
18% US GDP


Health Networking
SCENARIO 1


Easily accessible existing social infrastructure such as schools could be used in their off-time as primary care centres for the public
Local police can be trained for primary care and contacted during medical emergencies
Physical activities guided by the locals/ teachers promote well-being
Working with local farmers and community gardens to procure fresh food supply while boosting the local economy
Engaging students and youth in first-aid training and medical awareness programs
Retrofitting for Health
SCENARIO 2
Public Transport | Connectivity
TeleHealth | Technology
Energy Efficiency | Heat reduction
Waste Management
Community Engagement

# The Break Space

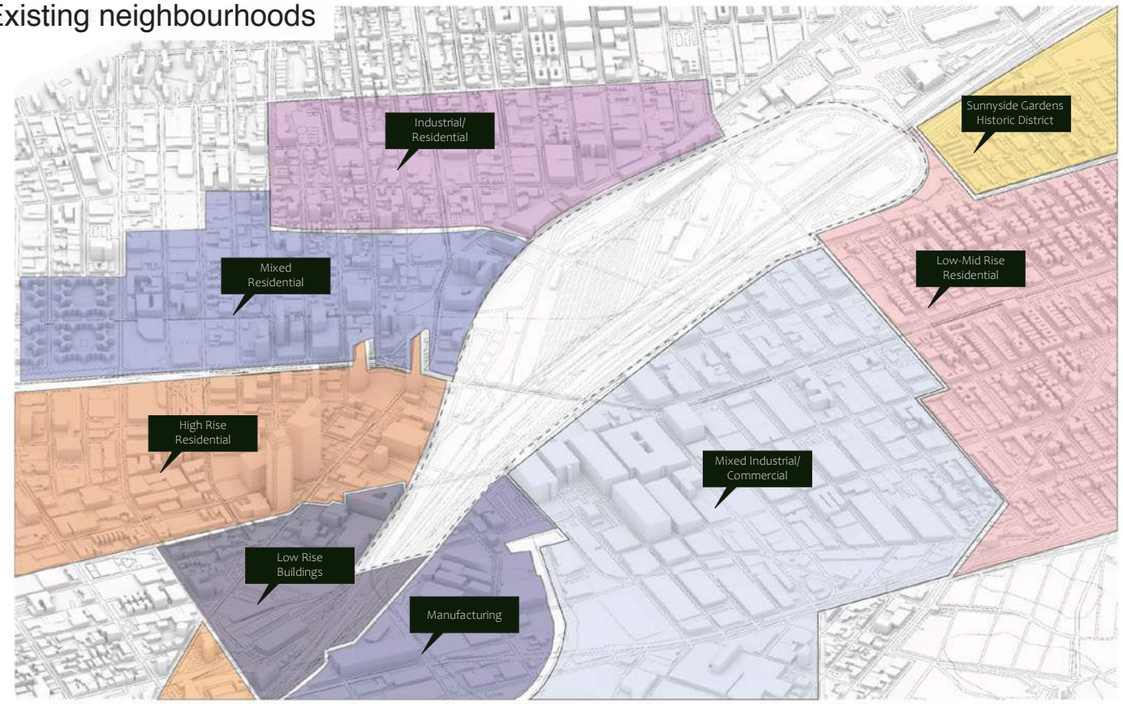
## Designing the Sunnyside Yards Edge

Urban Design Studio I: Long Island City, Queens
Summer 2019

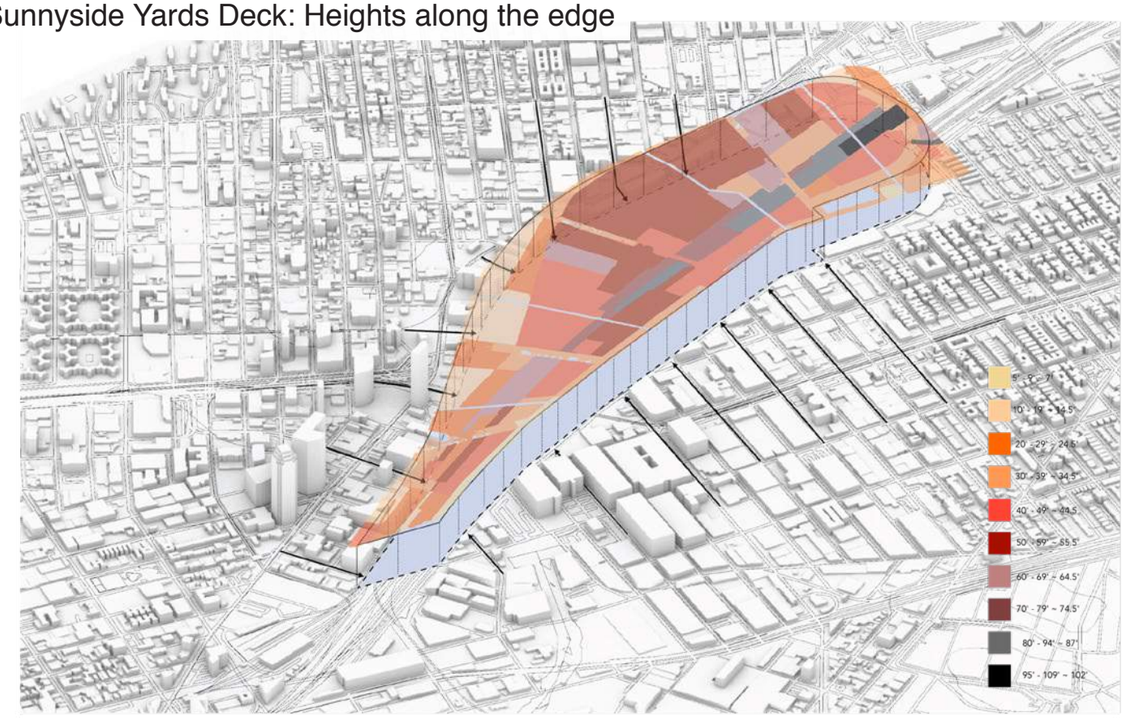
Team: Nina Ndichu, Shuo Han

The Sunnyside Yards development, set to come into the center of Long Island City is proposing to build a deck above the existing railyard, having varying heights with respect to the adjacent streets. The existing community around this development lack or require certain programs such as open spaces, pedestrian friendly walkways and shared work spaces. We attempt to create a human experience through design of this transition space along the edge of Sunnyside Yards Development.

## Existing neighbourhoods

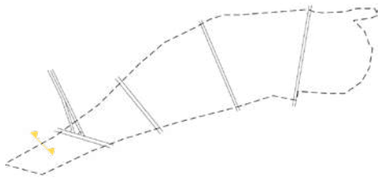


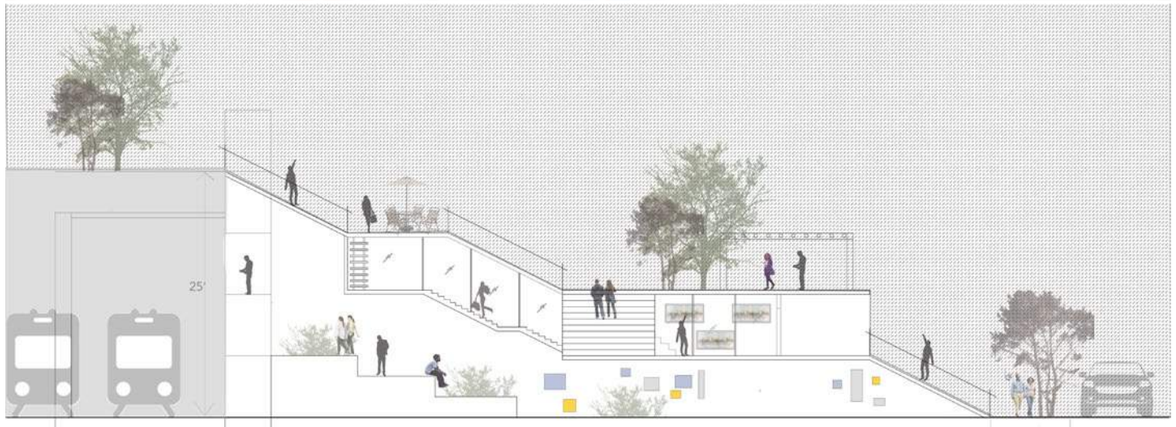

## Sunnyside Yards Deck: Heights along the edge



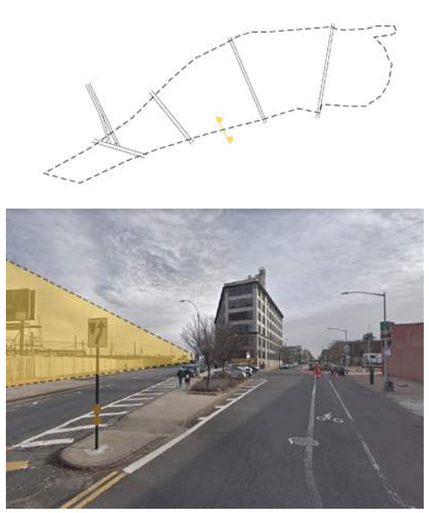


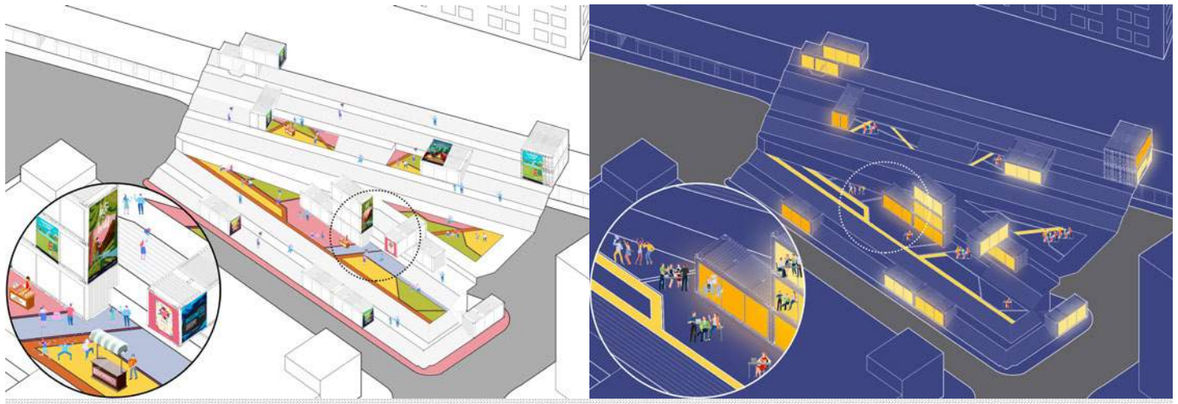

## Queens Boulevard Node

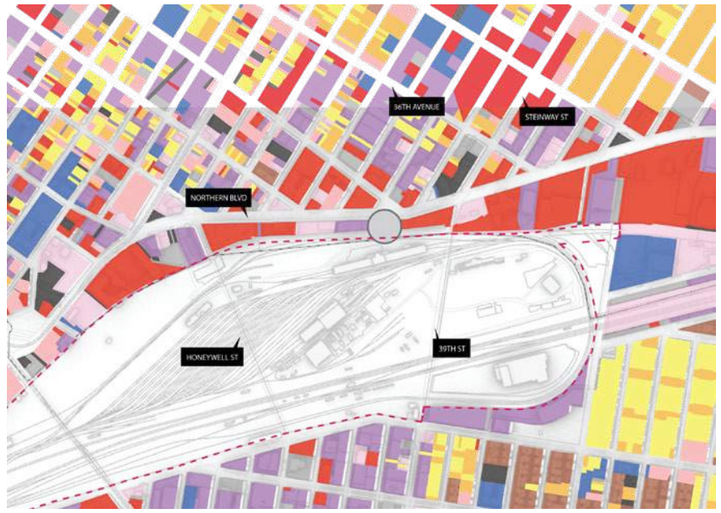


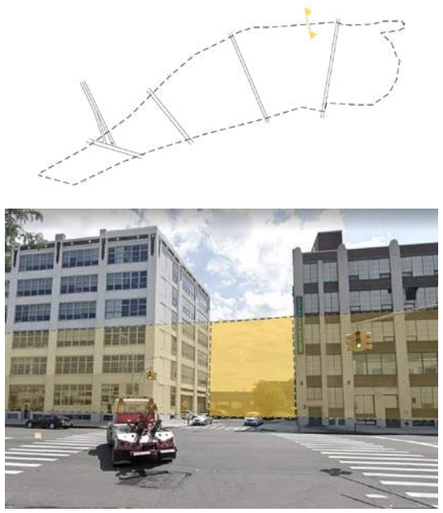

## IBZ Node

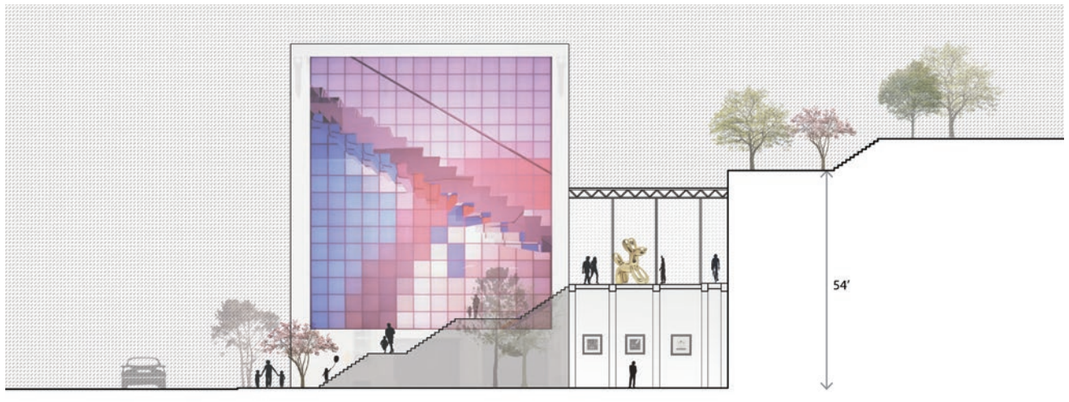



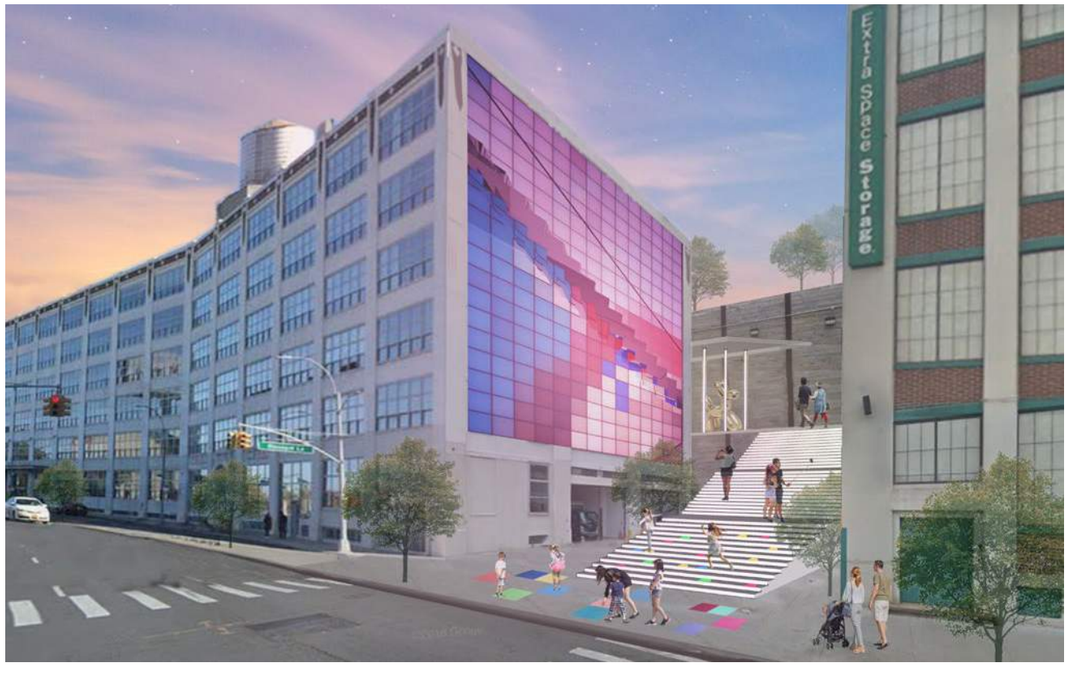



## Standard building Node



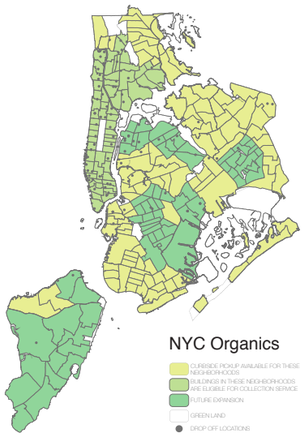


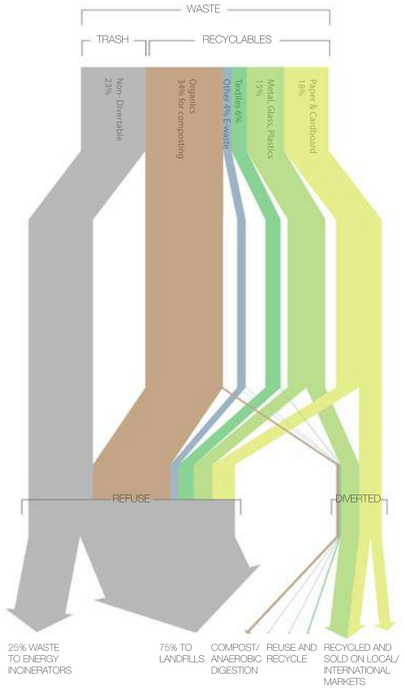



# Organic Waste, NYC
## Systems Research

Urban Design Studio I
Summer 2019

Team: Moneerah AlAjaji, Yuan Qin




ZERO WASTE DESIGN GUIDELINES

**$2.5 Billion**
ANNUAL COST OF COLLECTING AND DISPOSING NYC WASTE

**7558**
PERSONNEL EMPLOYED

**2230**
COLLECTION TRUCKS

NYC DEPARTMENT OF SANITATION ANNUAL REPORT 2017

**18%**
PRODUCTS USED ONCE THEN THROWN AWAY

DIESEL TRUCKS CARRY GARBAGE OVER
**7.8 Million Miles**
EVERY YEAR, ADDING TO TRAFFIC AND POLLUTION

**148,000**
STORM DRAINS TRAP THE STREET LITTER BEFORE IT REACHES THE SEWER LINE



**24,000** TONS/DAY
ZERO WASTE DESIGN GUIDELINES

**75%** ORGANIC WASTE ENDS UP IN LANDFILLS

**15%** ORGANIC WASTE GETS COMPOSTED

**10%** ORGANICS ARE USED TO GENERATE ENERGY

NYC WASTE CHARACTERIZATION STUDY 2017

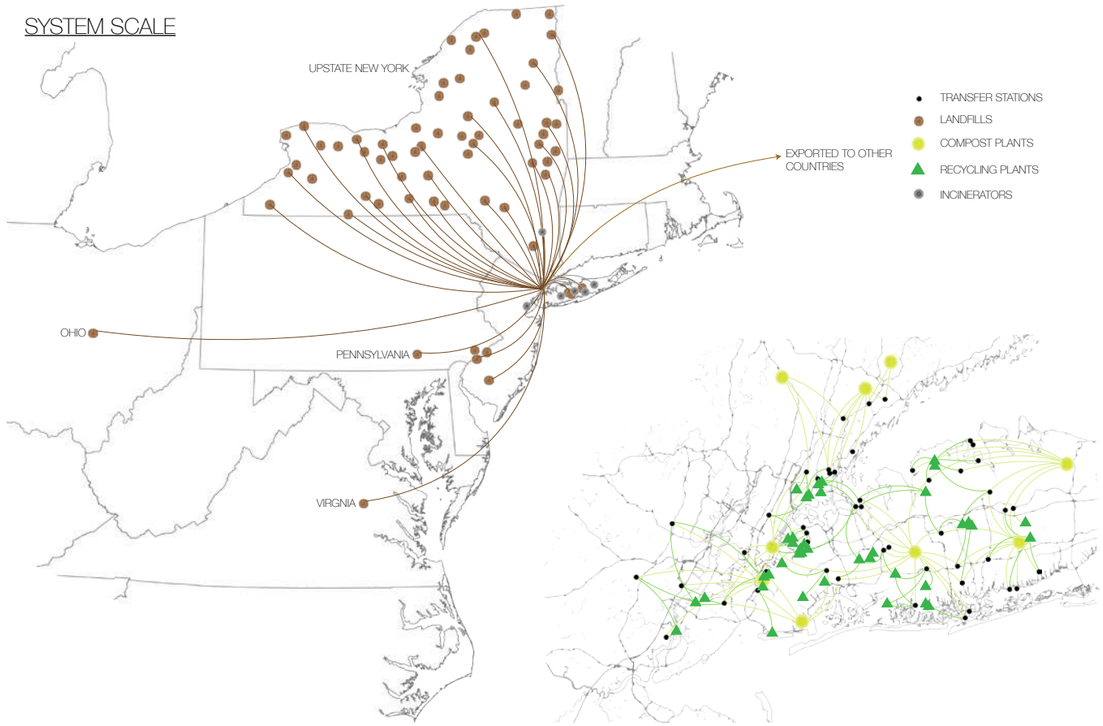
**34%** ORGANICS
FOOD SCRAPS, YARD WASTE FOOD-SOILED PAPER

**34%** RECYCLABLES
PAPER, CARDBOARD, METAL, GLASS, PLASTIC

**9%** DIVERTABLES
E-WASTE, TEXTILES, PLASTIC SHOPPING BAGS

**23%** OTHER
CONSTRUCTION/ DEMOLITION MATERIAL

SYSTEM SCALE




NEW YORK

THE NEW YORK CITY DEPARTMENT OF STREET CLEANING (NOW CALLED THE DEPARTMENT OF SANITATION) IS FORMED. THIS DEPARTMENT WAS TASKED WITH TAKING OVER THE RESPONSIBILITY OF WASTE COLLECTION AND STREET CLEANING PREVIOUSLY HELD BY THE POLICE DEPARTMENT.

1881

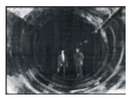
STREETS WERE SITES FOR DISPOSAL OF HOUSEHOLD GARBAGE AND ANIMAL CARCASSES. THE CONTENTS OF CHAMBER POTS OFTEN WERE DUMPED FROM WINDOWS, SOMETIMES LANDING ON PEDESTRIANS PASSING BELOW.

1800s

AMERICA'S FIRST INCINERATOR IS BUILT ON GOVERNOR'S ISLAND. THROUGHOUT THE NEXT CENTURY, INCINERATORS WOULD BE THE MAIN SOURCE OF WASTE MANAGEMENT IN NEW YORK CITY, BURNING ALMOST 1/3 OF THE CITY'S TRASH

1885

IN THE 1850S, NEWARK STARTED BUILDING ITS FIRST UNDERGROUND SEWERS SERVING THE CITY CENTER, WITH THEIR OUTFALL DUMPING UNTREATED HUMAN WASTE INTO THE PASSAIC RIVER, WHICH WAS ALREADY HEAVILY POLLUTED BY THE DISPOSAL OF WASTE FROM UPSTREAM FACTORIES.



1850s

GEORGE WARING BECAME THE COMMISSIONER OF THE DEPARTMENT OF STREET CLEANING (NOW DEPT. OF SANITATION) AND PUT INTO ACTION A WASTE MANAGEMENT PLAN THAT MADE OCEAN DUMPING ILLEGAL AND MANDATED RECYCLING EFFORTS. PRIOR TO WARING, 75% OF NEW YORK CITY'S WASTE WAS DUMPED INTO THE ATLANTIC OCEAN.

1895

ALTHOUGH IN 1877 THE LEGISLATURE CREATED THE STATE BOARD OF HEALTH TO ADOPT A SANITARY CODE, THE IMPLEMENTATION OF WASTE DISPOSAL PROGRAMS REMAINED PRIMARILY A LOCAL RESPONSIBILITY OF MUNICIPAL GOVERNMENTS AND THEIR BOARDS OF HEALTH. THIS LED TO FRAGMENTED EFFORTS TO FIND SUITABLE GARBAGE DISPOSAL SITES, WITH THE STATE ESTIMATED AT ONE TIME TO HAVE OVER 400 SEPARATE LANDFILLS.

1877

WORLD WAR I LED TO A HALT IN NEW YORK'S RECYCLING PROGRAMS, AS THE FEDERAL GOVERNMENT STARTED THE WASTE RECLAMATION SERVICE. DURING THE NEXT COUPLE DECADES, THE DEPARTMENT OF SANITATION BUILT AND OPERATED 22 INCINERATORS AND 89 LANDFILLS.

1918

IN 1925, NEW JERSEY, PENNSYLVANIA AND NEW YORK SIGNED A COMPACT PROHIBITING THE DISCHARGE OF UNTREATED SEWAGE AND INDUSTRIAL WASTE INTO THE DELAWARE RIVER OR ITS TRIBUTARIES.
AS EARLY AS 1934, NEW JERSEY FILED A LAWSUIT SEEKING TO BLOCK THE OCEAN DUMPING OF WASTE BY NEW YORK CITY; THE CASE ULTIMATELY WAS DENIED BY THE US SUPREME COURT.

1930s

THE FEDERAL CLEAN AIR ACT IS ENACTED, LEADING TO INCINERATOR SHUTDOWNS BECAUSE THEY DID NOT MEET NEW EMISSION GUIDELINES.
THE SUPREME COURT RULED THAT WASTE IS PROTECTED BY THE INTERSTATE COMMERCE CLAUSE AND THEREFORE ONE STATE CANNOT BAN SHIPMENTS OF WASTE FROM ANOTHER.

1970s

THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION WAS CREATED IN 1970. THE LEGISLATURE ALSO ENACTED THE SOLID WASTE MANAGEMENT ACT AND THE SOLID WASTE UTILITIES CONTROL ACT.
IN RESPONSE TO THE STRICTER REGULATORY STANDARDS, NEW, MORE ADVANCED SEWAGE TREATMENT PLANTS BEGAN TO UTILIZE SECONDARY TREATMENT OF SEWAGE

1970

FRESH KILLS, THE LAST REMAINING LANDFILL IN NEW YORK CITY WAS CLOSED. THIS WAS THE FIRST TIME THAT NEW YORK CITY HAD NO PLACE WITHIN THE FIVE BOROUGHS TO BURY OR BURN IT'S GARBAGE. THE CITY BEGAN SENDING MOST OF ITS WASTE TO PRIVATE TRANSFER STATIONS IN NEIGHBORHOODS IN BROOKLYN,

2001

BY THE LATE 1980S, STATE REGULATIONS REQUIRED THE CLOSING OF MANY LANDFILLS AND INCINERATORS, CAUSING THE AMOUNT OF WASTE DISPOSED OF IN NEW JERSEY TO DECLINE SHARPLY, WITH SOME BUSINESSES AND LOCAL GOVERNMENTS CONTRACTING TO SHIP WASTE TO OUT-OF-STATE LANDFILLS AND OTHER DISPOSAL SITES

1930s

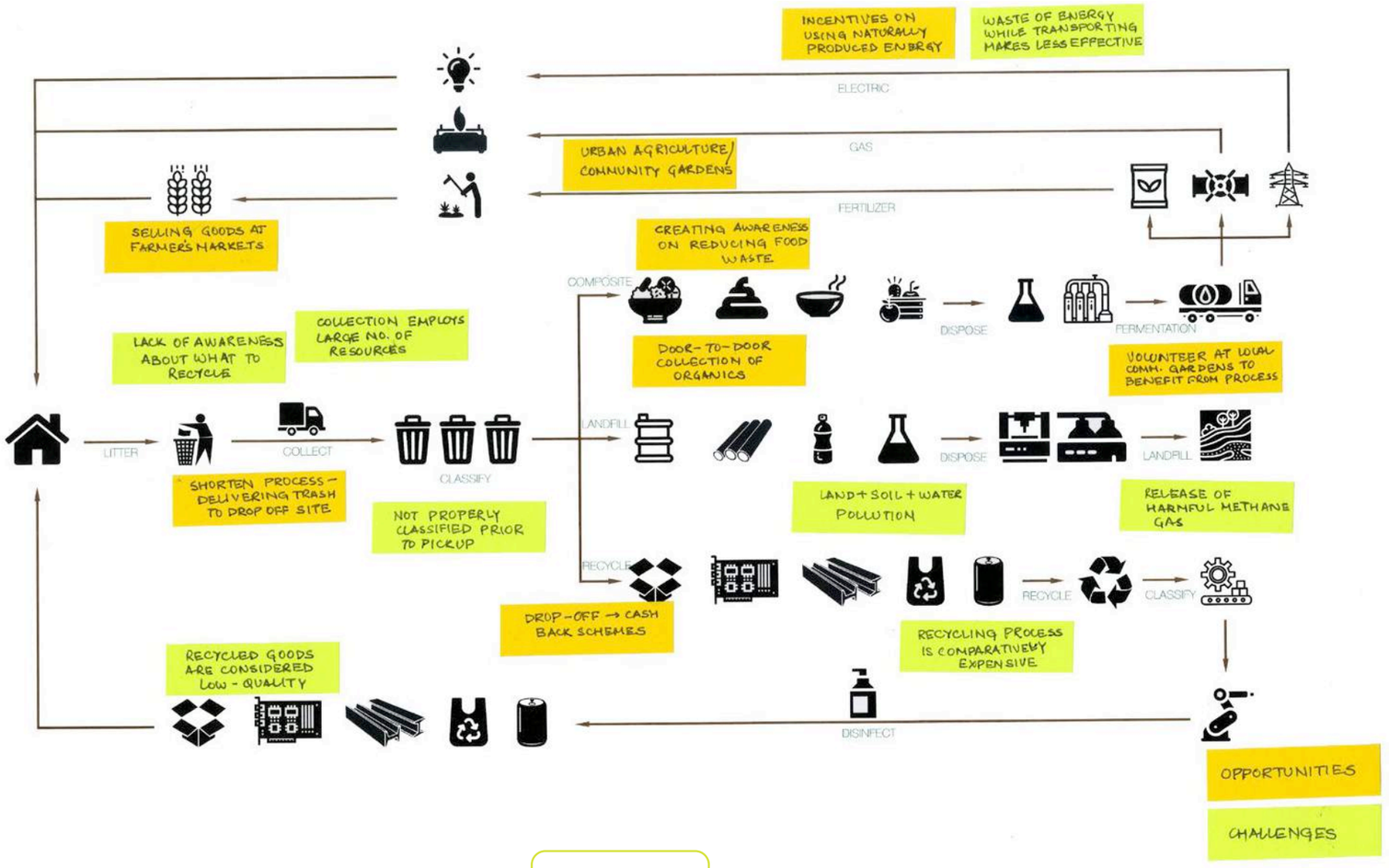

MAYOR BLOOMBERG RELEASES THE COMPREHENSIVE PLANYC, A SUSTAINABILITY EFFORT LOOKING AHEAD TO 2030 AND AIMED AT PREPARING NEW YORK CITY FOR FUTURE POPULATION GROWTH, CLIMATE CHANGE, ETC. THE PLAN INCLUDES A NUMBER OF INITIATIVES THAT INCLUDE TARGETING RECYCLING INCENTIVES, CREATING OPPORTUNITIES TO RECOVER ORGANIC MATERIALS FROM WASTE.

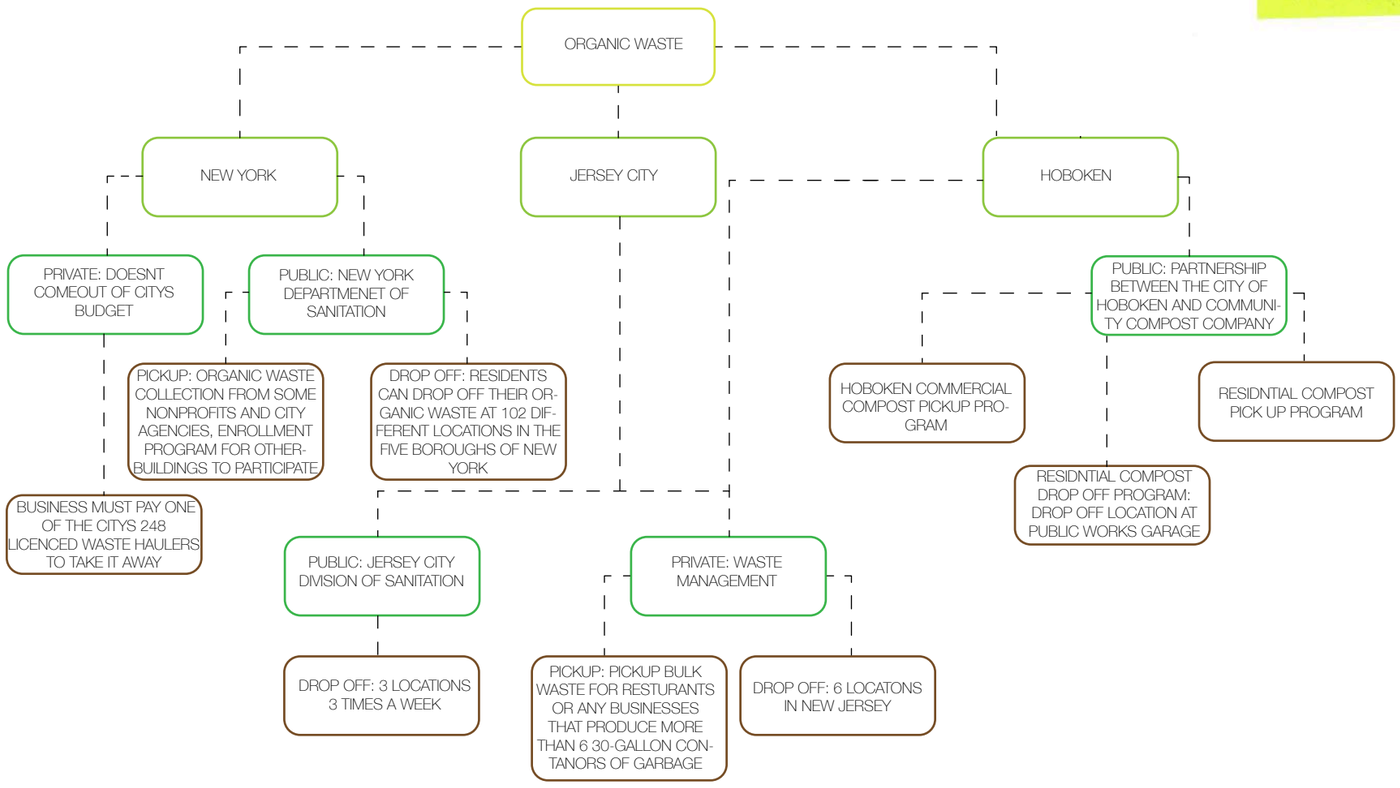
2007

IN 2008 APPROVED THE RECYCLING ENHANCEMENT ACT, IMPOSING A TAX OF THREE DOLLARS PER TON OF WASTE, WITH A PORTION OF THE REVENUE PROVIDED TO SUPPORT RECYCLING PROGRAMS OF COUNTIES AND MUNICIPALITIES.


2007

NEW JERSEY





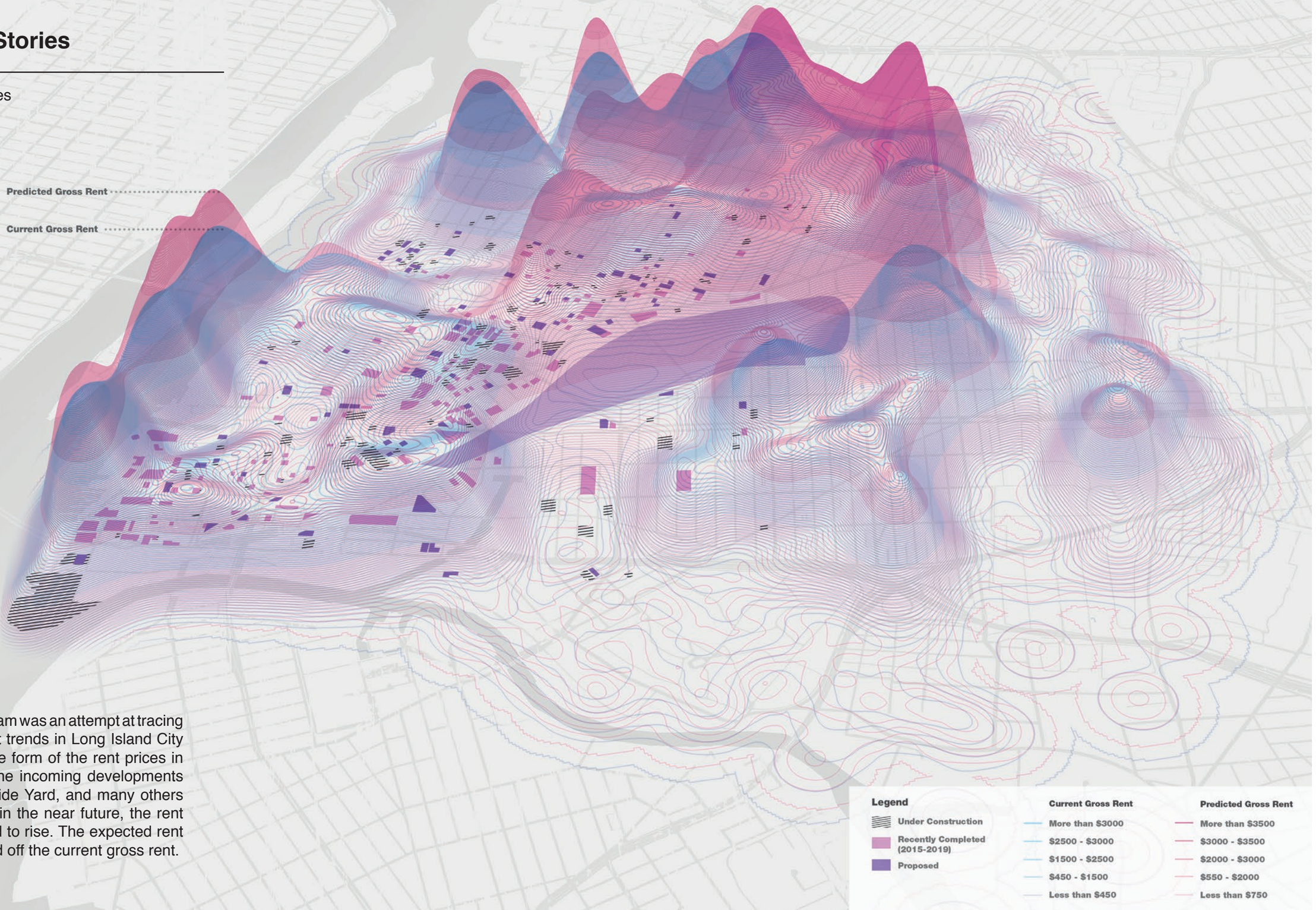

VISION: NEW JERSEY


VISION: SUNSET PARK


VISION: LONG ISLAND CITY

# The Rent Stories

Digital Techniques
Summer 2019

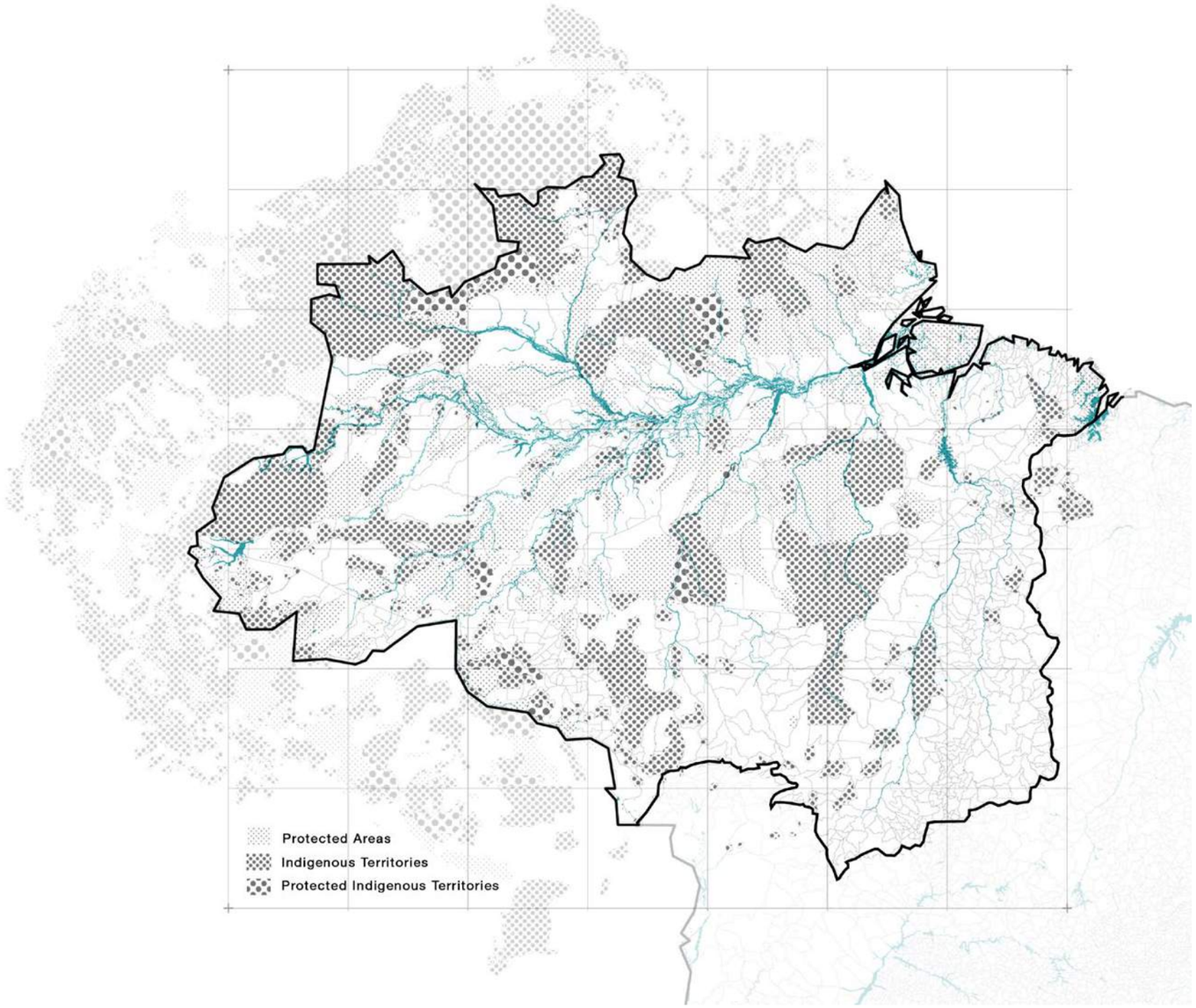



The diagram was an attempt at tracing the development trends in Long Island City in Queens, in the form of the rent prices in the area. With the incoming developments such as Sunnyside Yard, and many others set to complete in the near future, the rent prices are bound to rise. The expected rent was extrapolated off the current gross rent.

# Silver Lining: Imagining Circular Bio-economies at the Amazonian Frontier

Speculative City: Crisis, Turmoil, and Projections in Architecture
Spring 2020

The Amazon is the world's largest rainforest, home to about 34 million residents[1] spread over an expanse of 6.7 million sq. km over nine rapidly developing countries in South America. For centuries the Amazon has existed in a reciprocal relationship with its inhabitants in a slow and continuous process of anthropogenic exchange. Recently, however, "inside the crucible of this ancient forest, relentless colonization is combining with environmental vandalism and a warming climate to create a crisis."[2] This paper looks at projected futures for the rainforest, which tend to oscillate between a spiraling collapse of the ecosystem (also referred to as a "dieback") and absolute preservation of the forest, allowing it to regrow. It seeks to suggest a third alternative which lays a framework for inhabiting the edges of the forest while responsibly co-existing at the threshold of the two dominions.




Map of the the Amazon Basin showing Indigenous territories and Protected areas

1 Sandra Charity, Nigel Dudley, Denise Oliveira, and Sue Stolton "Living Amazon Report 2016: A regional approach to conservation in the Amazon," WWF Living Amazon Initiative, Brasília and Quito, 2016.

2 Matt Sandy, "Why Is the Amazon Rain Forest Disappearing?" Time, 2019, https://time.com/amazon-rainforest-disappearing/


Circular Economy at the edge of the the Amazon Forest - Settlement section

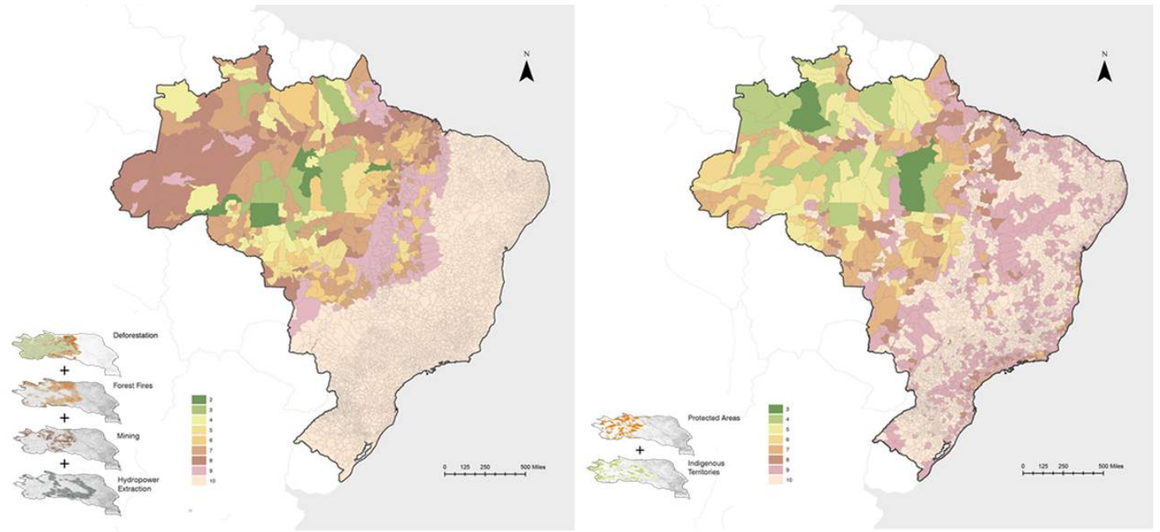
# Vulnerability Assessment in the Brazilian Amazon

Geographic Information Systems
Fall 2019

Team: Nikita, Vasanth Mayilvahanan

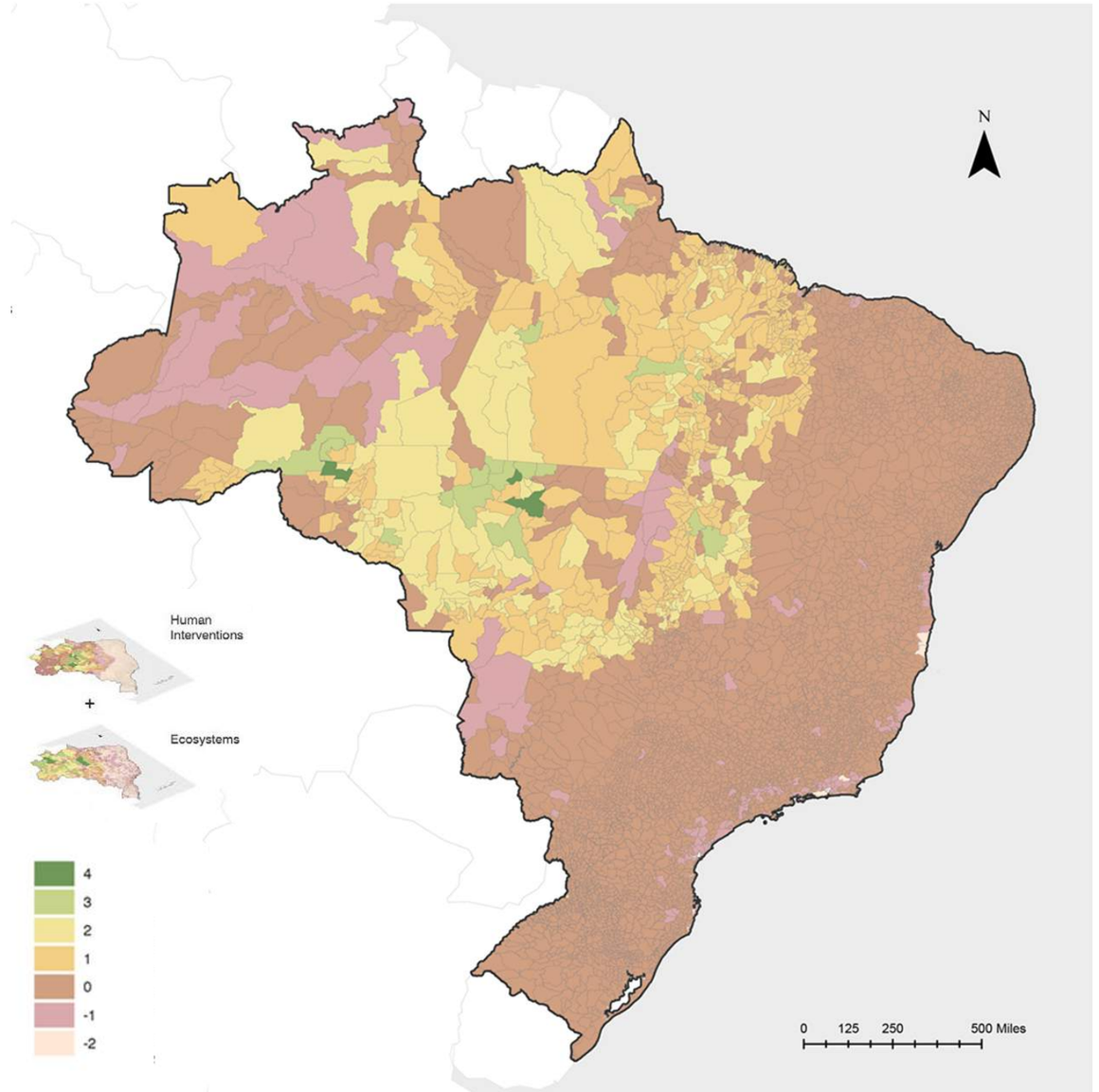
The project sought to understand the impacts of various human activities on the protected areas and indigenous territories in the Amazon forest. Analyzing the overlaps of impacts of various human interventions (deforestation, mining, hydropower extraction, and forest fires) on the ecosystem, a ranked model was created which classifies ares based on various hierarchies of impact levels from most to least vulnerable.

A weighted overlay operation was performed combining the human intervention and ecosystem layers. A positive weightage of 8 to 0 was assigned to the human interventions. Similarly, a negative weightage of -7 to 0 is assigned to the ecosystem layer. When overlaid, the more positive resultant value, the more vulnerable the area. The ranking of the resultant map is based on values from -2 to 4 where -2 is the least vulnerable and 4 is the most vulnerable area.









# Cyprus Buffer Zone

## Peacemaking Operation or Scar of Division?

Difference and Design Seminar
Fall 2019

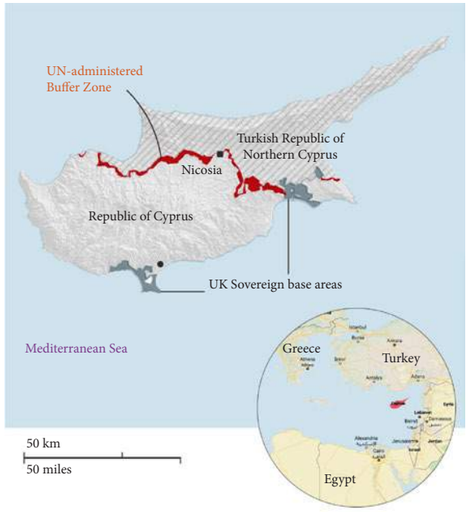



**Fig:** The divided island of Cyprus and its location between East Europe, Middle East and Northern Africa

A small island country in the Mediterranean, Cyprus is uniquely located between Eastern Europe, the Middle East and Africa. This strategic location ensued that the island was occupied by the Assyrian, Egyptian, Persian, Byzantine, Venetian, Ottoman and British Empires, resulting in layers of history that have assimilated over the years to create the urban fabric that exists in Cyprus today. The island is home to two distinct ethno-religious communities namely the Greek Cypriots (that form about 78% of the island's population) and the Turkish Cypriots (9.8% of the population).

The country was administered by the British until they gained independence in 1960. Differences in visions for the country amongst the two communities and tensions over political representation in the Constitution led to inter-communal violence. This led to the establishment of a demilitarized zone, monitored by the United Nations Peacekeeping Force in Cyprus, known as the 'buffer zone' or the green line'. Following the Greek coup d'état in 1974', and a responding Turkish invasion of Cyprus, the Buffer zone was extended to create a de-facto partition of the island in to the Republic of Cyprus in the south and the internationally unrecognized Turkish Republic of Northern Cyprus in the North. Hundreds of thousands were forced to displace to the side of their respective ethnicity.

The buffer zone stretches for 180km varying in width from 20m to more than 7kms. There are several small villages and special areas within the buffer zone where people can enter freely and more than 10,000 people are living or employed. Everywhere else, civilian movement requires UN authorization.

In Nicosia, the capital city of Cyprus, the historic walled city was divided in half, right along where the prosperous neighborhoods and commercial activities were located, forcing them to be abandoned overnight. Over time the areas adjacent to the buffer zone faced steep decline and some had to evacuate. Light industries and workshops moved in to areas which used to have high commercial value, turning the core of the city inside out, while uncontrolled centrifugal development continued on the outskirts of the city. The physical decay of the urban core of Nicosia is starkly evident in contrast to the thriving city on either side and has prompted a number of civil interventions in the area.

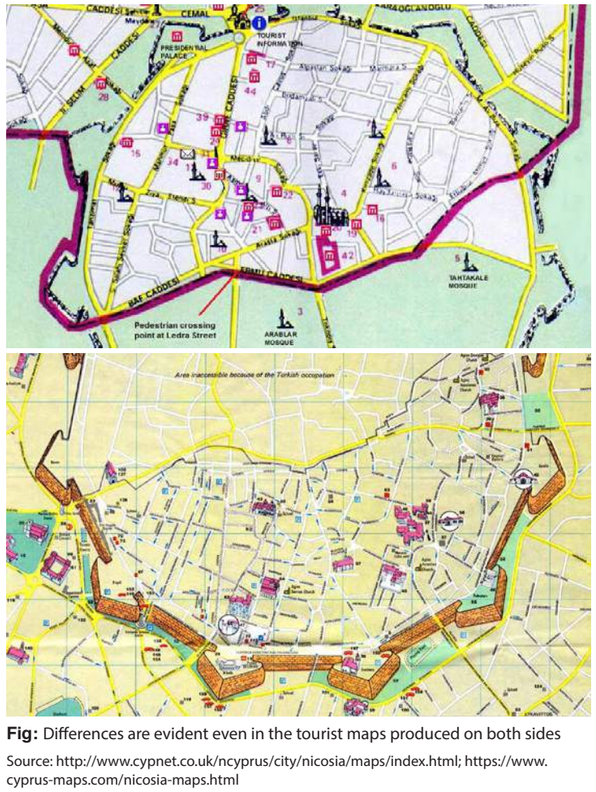



**Fig:** Differences are evident even in the tourist maps produced on both sides

Source: http://www.cypnet.co.uk/ncyprus/city/nicosia/maps/index.html; https://www.cyprus-maps.com/nicosia-maps.html

**Fig:** Comparison of the built fabric of Nicosia (left) and the deteriorated condition of structures within the buffer zone (right).

Source: http://cyprusconferences.org/clc6/about-nicosia/; cyprus-mail.com/2018/10/28/a-rare-view-from-inside-nicosias-buffer-zone/

The Nicosia Masterplan was a successful planning instrument that brought together people from both communities to protect their shared heritage within and around the buffer zone.

## THE CYPRUS PROBLEM

The geography, culture, politics and daily life of the people continues to be characterized by the 'Cyprus Problem'.[1] People are 'tired of the political maneuvering' and desire reunification. Lack of interaction between the two communities had led to conflicting visions and prejudices that are projected in the education systems on both sides.

The Greek children are taught that the island belongs to Greece and should be returned, while the Turkish side teaches them that the island is inherently Turkish and should become a part of Turkey. The general consensus amongst the two groups with regards to the events of the past also varies. While Greek Cypriots believe that the Turkish invasion was a catastrophic intervention for the country, the Turkish population tends to celebrate it as 'Peace and Freedom Day'.[2]

The animosity between the two groups, however, is based in "nationalism and arguments over political representation, not religion or culture. The majority blame the errors committed by leadership and intervention of foreign states for creation and perpetuation of the conflict."[3]

## LOOKING FOR A SOLUTION

Both sides have agreed on a "bi-communal, bi-zonal federation" in principle, but their ideas of how this works are very different.[4] Turkish Cypriots demand political equality but Greek Cypriots, however, are not that keen on the idea of sharing power.

Disagreements have stalled talks of reunification, with issues such as rotating presidency terms, territorial boundaries, return of displaced Cypriots and the scope of rights to their property, demilitarization of the island, repatriation of Turkish immigrants, and the role of Greece, Turkey and Britain being major points of discussion.

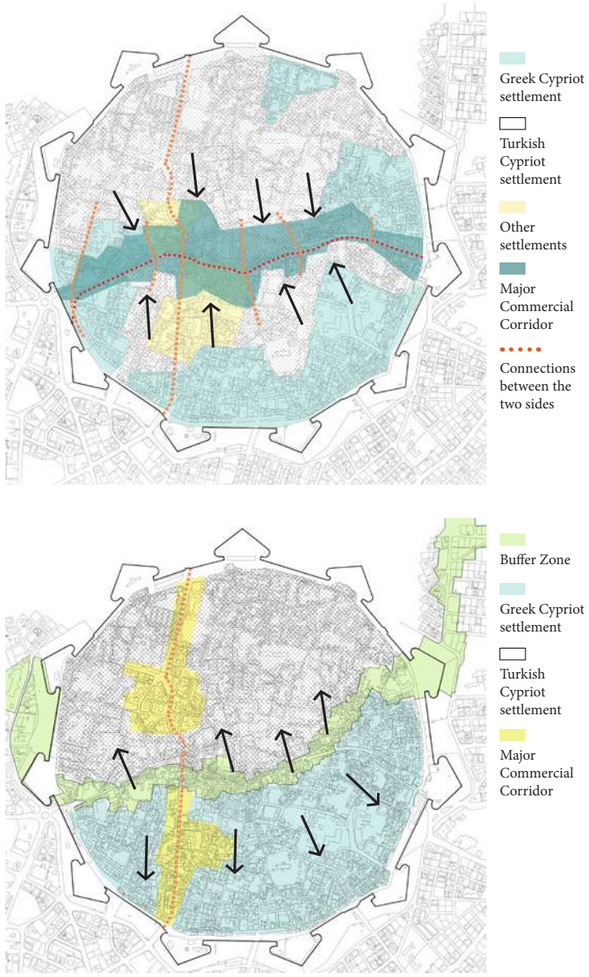



**Fig:** Impact of the Buffer Zone on the center of the city of Nicosia

**Fig:** Nature has reclaimed parts of the buffer zone over the 45 year period that it has been empty.
Source: Google Maps; https://petapixel.com/2018/10/24/rare-photos-inside-the-united-nations-buffer-zone-in-cyprus/

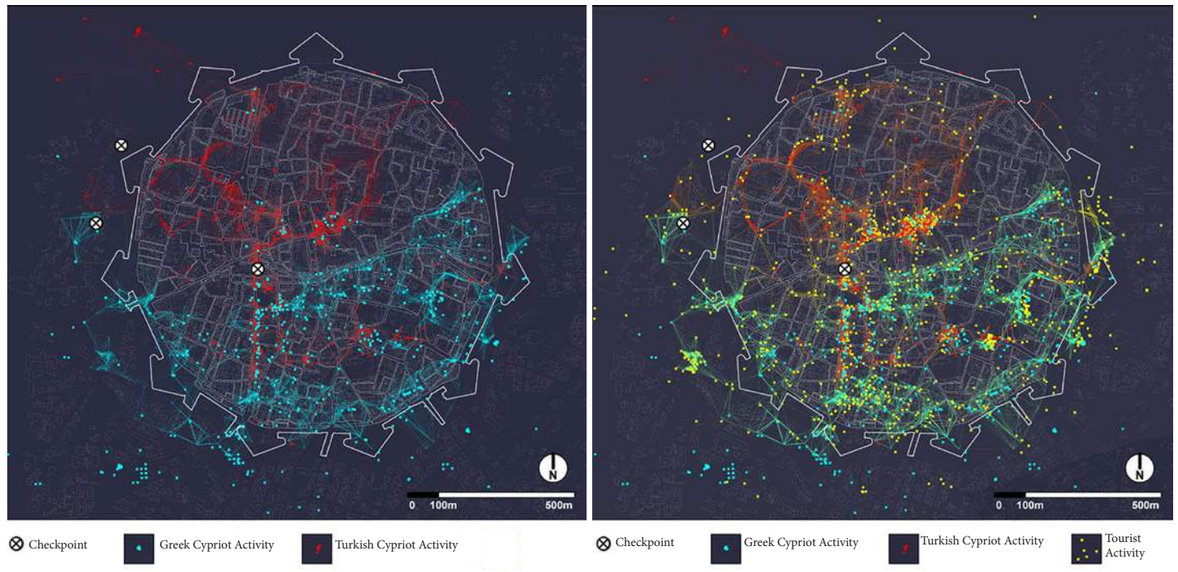



**Fig:** Social media mapping of Greek and Turkish Cypriots, overlapped with tourist activity indicating that there are areas of communal overlap that occur, and these are mostly concentrated in commercial, religious and cultural areas.
Source: Andreas Papallas, "Terra Nullius", July 2015, http://cargocollective.com/cdrspapallas/Nicosia-Social-Media-Mapping

1. https://culturalatlas.sbs.com.au/cypriot-culture/core-concepts-5cd3c52c-722d-40fe-9477-a519daf858b1
2. https://culturalatlas.sbs.com.au/cypriot-culture/core-concepts-5cd3c52c-722d-40fe-9477-a519daf858b1
3. https://culturalatlas.sbs.com.au/cypriot-culture/core-concepts-5cd3c52c-722d-40fe-9477-a519daf858b1
4. https://www.turkheritage.org/en/publications/issue-briefs/the-cyprus-dispute-at-a-glance-3300

## DESIGN

The buffer zone can become a place where differences can be forgotten and people can unite under a shared heritage and memory of the place.

Buildings with environmental value will be left as they are with no interference. On the other hand, buildings that are of architectural value will be retrofitted and made accessible to children and young people. We can invite institutions like schools, NGOs, etc. that play an influential role in shaping young minds to accommodate structures right next to the buffer zone.

In times of inter-communal conflict, the children can be gathered in safe environments and given a space where they can mingle and interact with each other. This will allow them to have a dialogue free from communal biases, and contribute to a more harmonious society.

In case there are buildings that have deteriorated to an extent that does not permit retrofitting to be done, a walking trail can be built around them. Using technologies like VR, people can be shown a simulated version of what these buildings may have looked like in better times. This will help them connect with their shared heritage.

Trails can be proposed based on areas that are most frequented by people of either community and include areas of communal overlap, that mostly occur in commercial streets, religious complexes and areas of shared heritage such as museums. Allowing walking trails through a part of the buffer zone will help bind the two sides in a stronger manner and lead to development in shared ownership of the place. A tourism boom is expected to follow, bringing back life and economy to the center of the city, and make it a cohesive whole.


**Fig:** Mapping of heritage buildings in and around the buffer zone. Structures of architectural value could be utilized as spaces for institutional uses.
Source: "Designing a Difference: Social Sustainability in Cyprus", 2016, Pantheon Cultural Association, Nicosia, Cyprus



## CONCLUSION

Shared ownership and acknowledgment of the multicultural past of the city as well as the scars of the conflict that came with it; is necessary in moving forward.

The best chance at reconciliation is through allowing children and the youth to experience the other side of the city, and mingle with the other community, so that they realize that in spite of the differences, they essentially belong to the same nation.

The buffer zone can act as a middle ground here, considering that it has been detached from any communal differences that occurred after 1974, while it preserves the memory of the history of Cyprus.

The buffer zone could become a place for education and intermingling for kids of both communities while they are at an impressionable stage. They can also gradually be informed of the memory and importance of the place for the country.

COLUMBIA
GSAPP

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