



# Verena Krappitz

## Portfolio

GSAPP MSAUD 2022/23  
MAY 2023

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## Urban Design

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Consejo Comunitarios

Guardians of the Jarillon

Solar-Powered Access Point

Currulao

Paseo de Olla

Permaculture

Floating Wetland



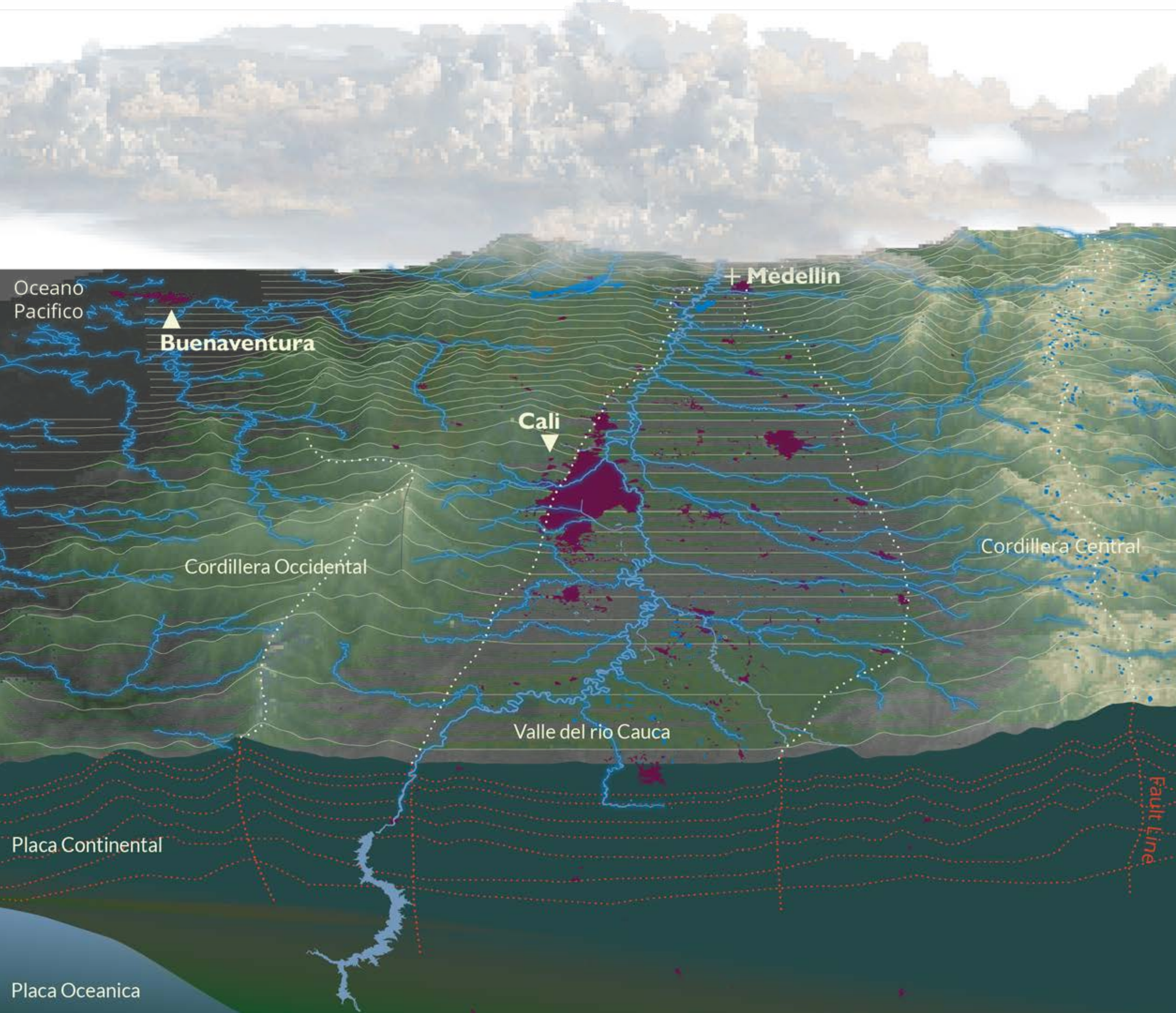
# #1 River Culture in Cali

Spring 2023

Team: John Grunewald, Naumika Hejib, Verena Krappitz, Caroline Wineburg

 [Please visit the full storymap here!](#)

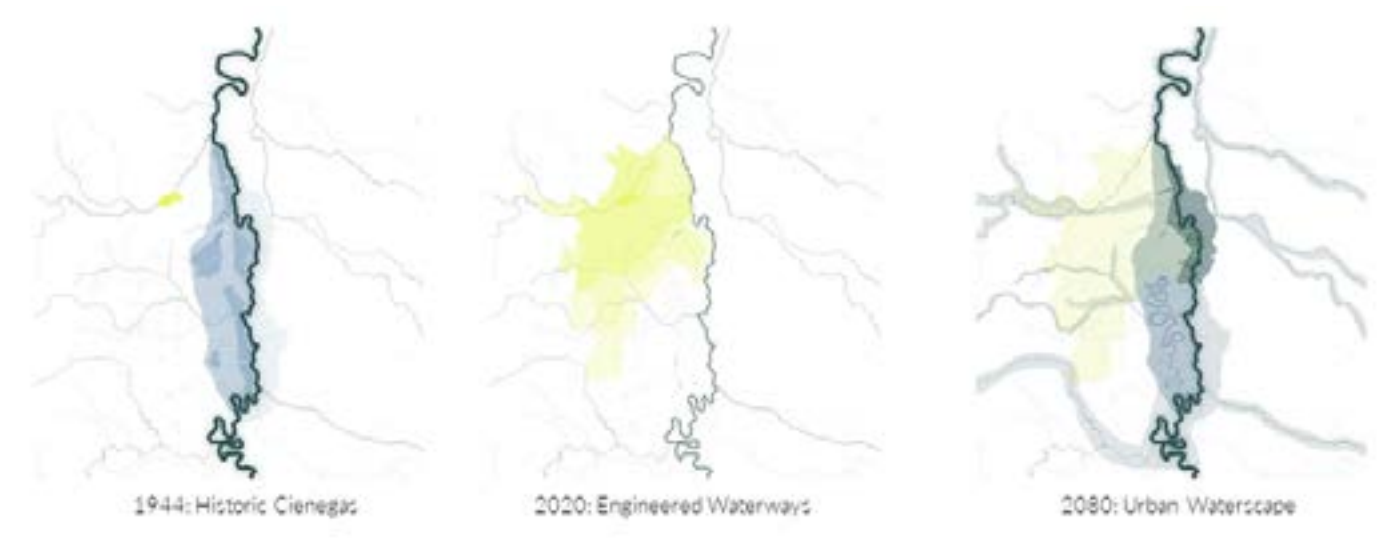
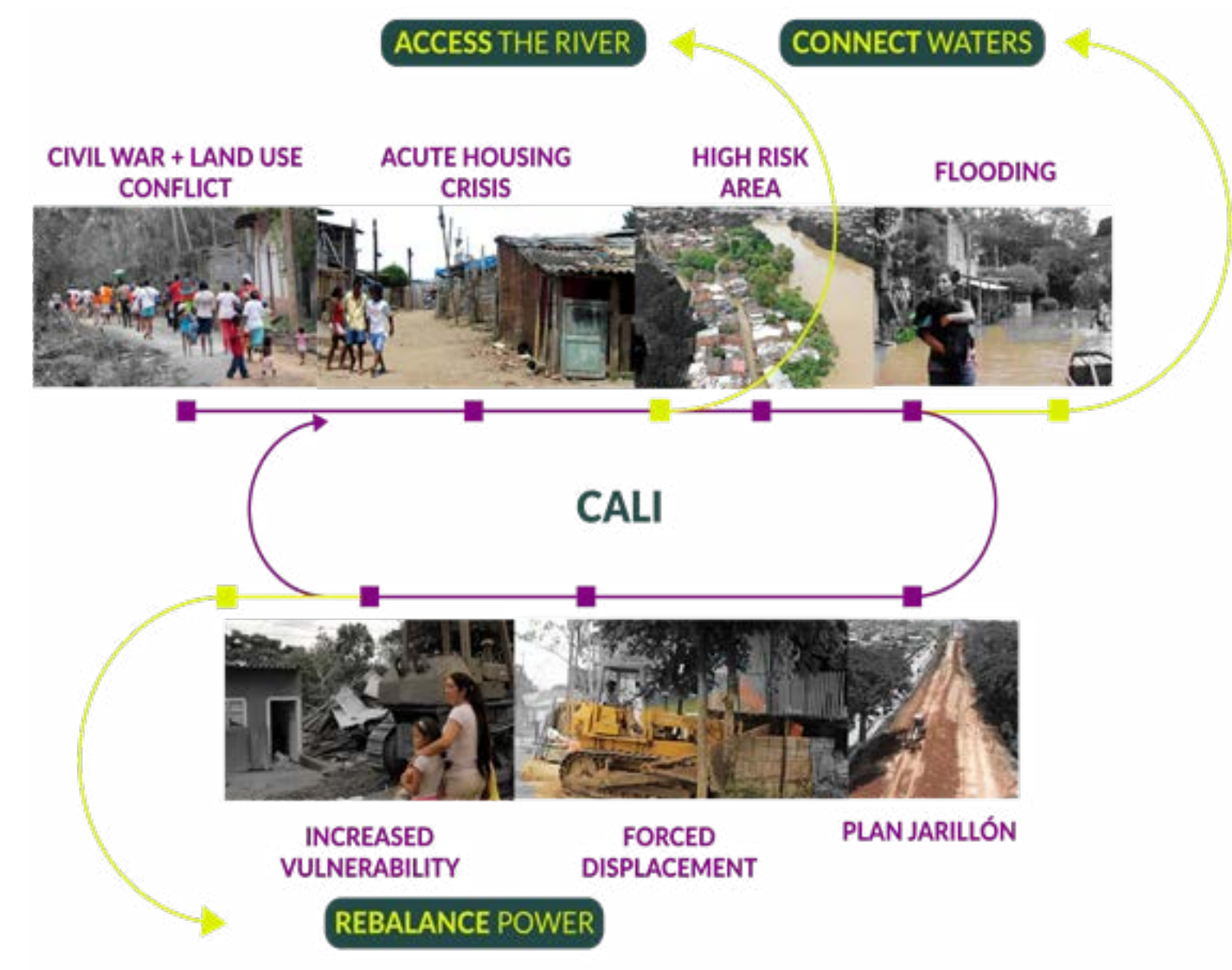
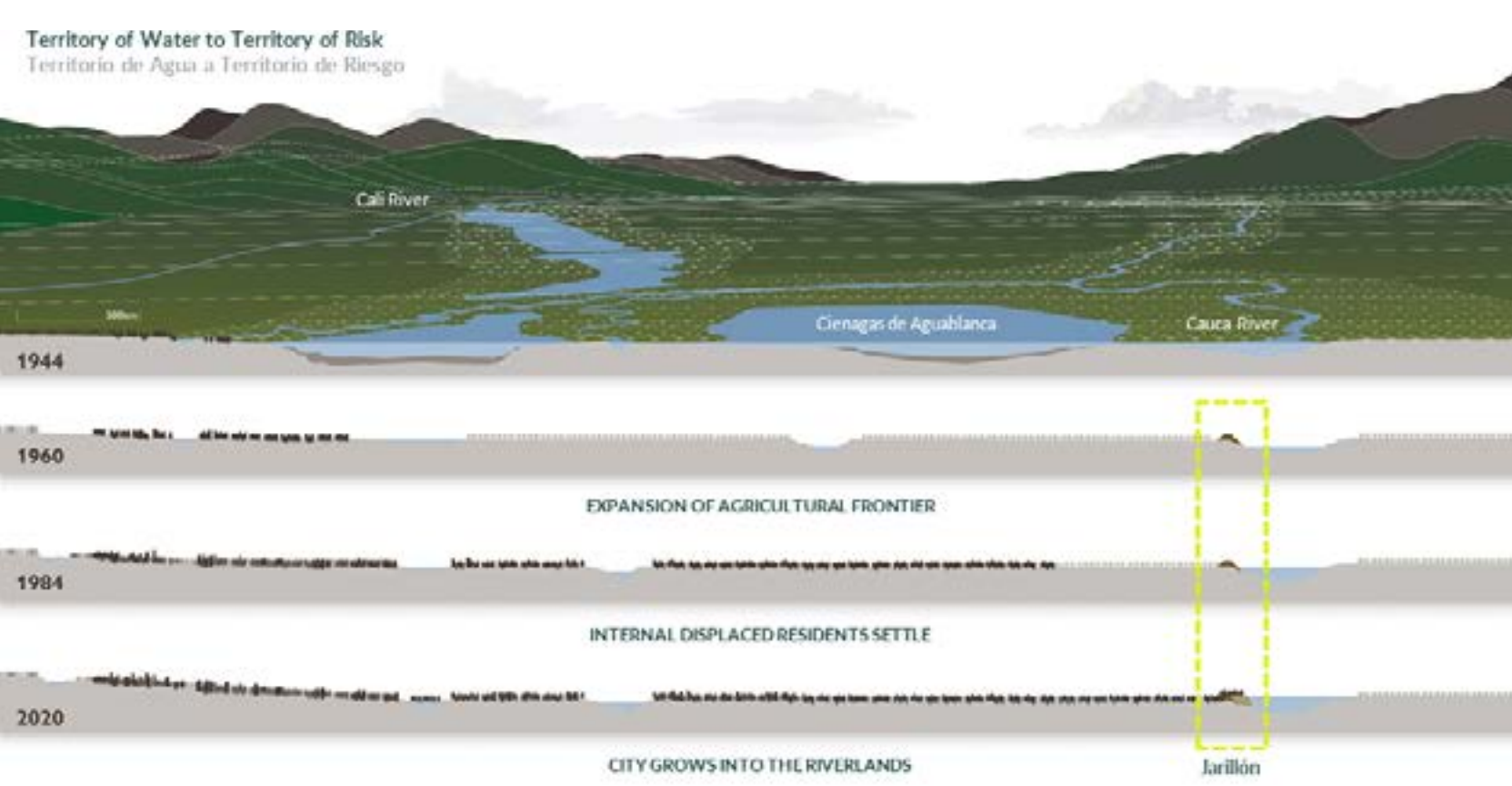
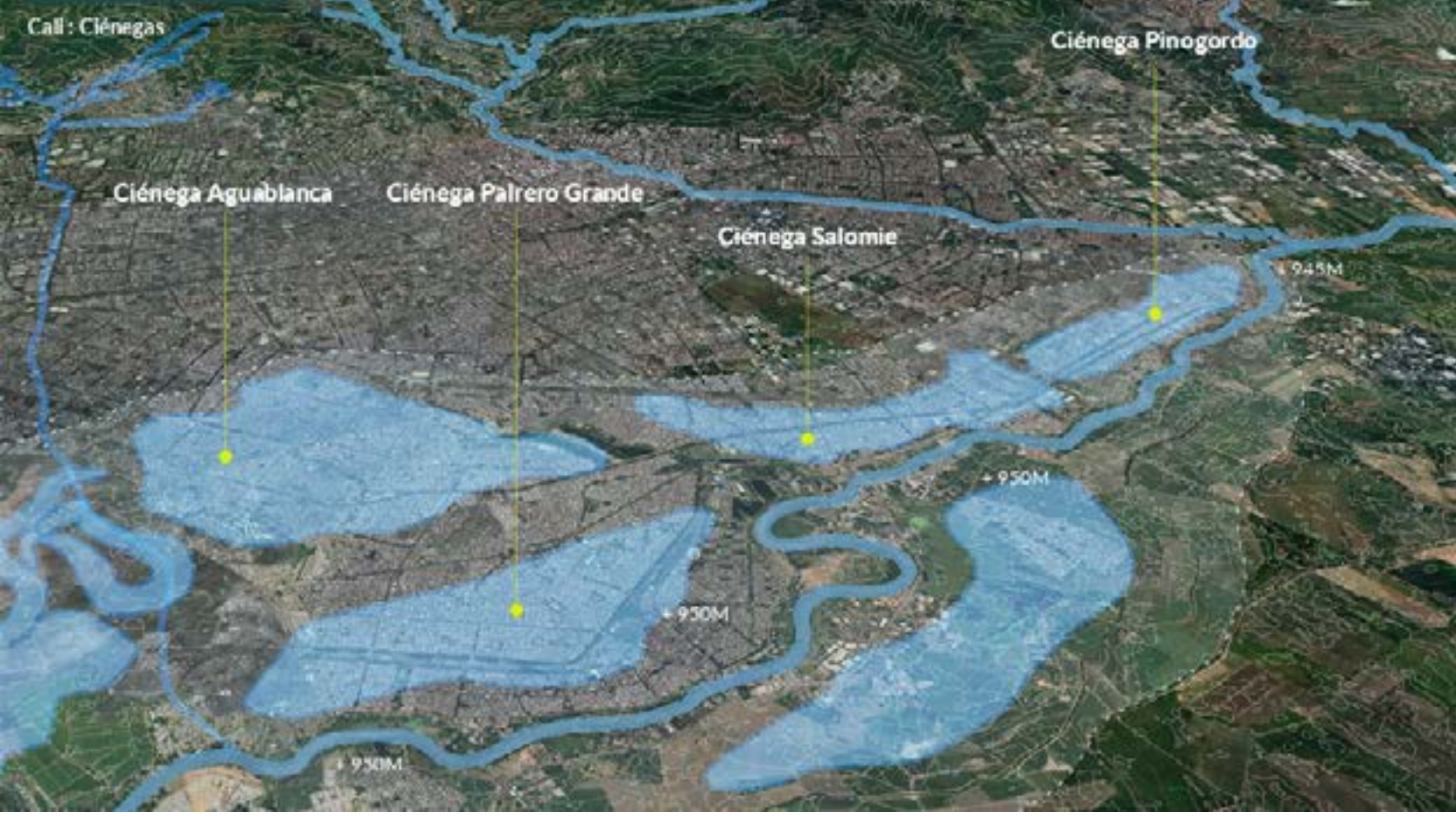
Our project embraces the long legacy of river culture in Cali and proposes strategies to leverage this culture to counter cycles of injustice and build community capacities through productive urban waterscapes. By bringing equitable access at strategic locations along the Cauca River, we challenge the land use of the 30 meter setback to strengthen communal land rights for Afro-Colombians living in the riverlands and reward care for critical ecosystems. By connecting existing waterways, we propose retrofitting strategies for housing for future climate adaptation and weaving social, ecological, and hydrological systems within the existing urban fabric. We envision a scalable, resilient framework for communities to expand river culture in Cali.



River or water culture in Cali is influenced by its proximity to the Pacific coast and extends throughout the valley. The Cauca River receives water from two cordilleras, Cordillera Occidental and the Cordillera Central, creating a complex hydrological cycle.

The oceanic and the continental plate meet right at the Pacific coast, making it prone to earthquakes. The Rain and Dry Season are strongly influenced by the global phenomenon El Niño and La Niña. While El Niño tends to lead to dry periods, La Niña increases the amount of rainfall. The waterways running through the city are fed by the run-off of two large mountain ranges, making it la Ciudad de Siete Ríos.

The hydrological cycle of assimilation, infiltration and evapotranspiration nourishes diverse ecological habitats. But urban development and extreme agrarian activity in the valley cut through these migratory corridors and puts it at risk.



During the six decades of Colombia's civil war, Cali became a receptor for internally displaced people, largely Afro-Colombian communities from surrounding regions near the Pacific. An acute housing crisis unfolded as new residents were excluded from the formal housing market and settled in high risk areas along the water's edge, areas with features and economies familiar to their coastal hometowns.

Heavy flooding in 2011 resulted in the city's proposal of Plan Jarillón which led to further forced displacement of residents living in between the levee and the river. These disruptions of livelihoods and social bonds lead to increased vulnerability for marginalized communities.

In order to break the cycle of injustice, we propose strategies to provide Access to the river, Connect water bodies across the city and Rebalance power dynamics from power hoarders to riverine communities.

Water in Cali has historically been an element of social and spatial segregation. By accessing the river and connecting the waters, dynamic river culture is transformed back from its intermediate state as a controlled river into an expansive landscape of water and urban fabric.



**CONNECT WATERS**

**ACCESS THE RIVER**



Mi Casa Ya

Secretaria de Vivienda

DAGMA

Humboldt Institute

Guardians of the Jarillon

Solar and water collector

Densified urban infill

Adapt in place housing

Ground level commerce

Permeable Plaza

Agroforest

Renatured waterway

Floating wetlands

Greenway

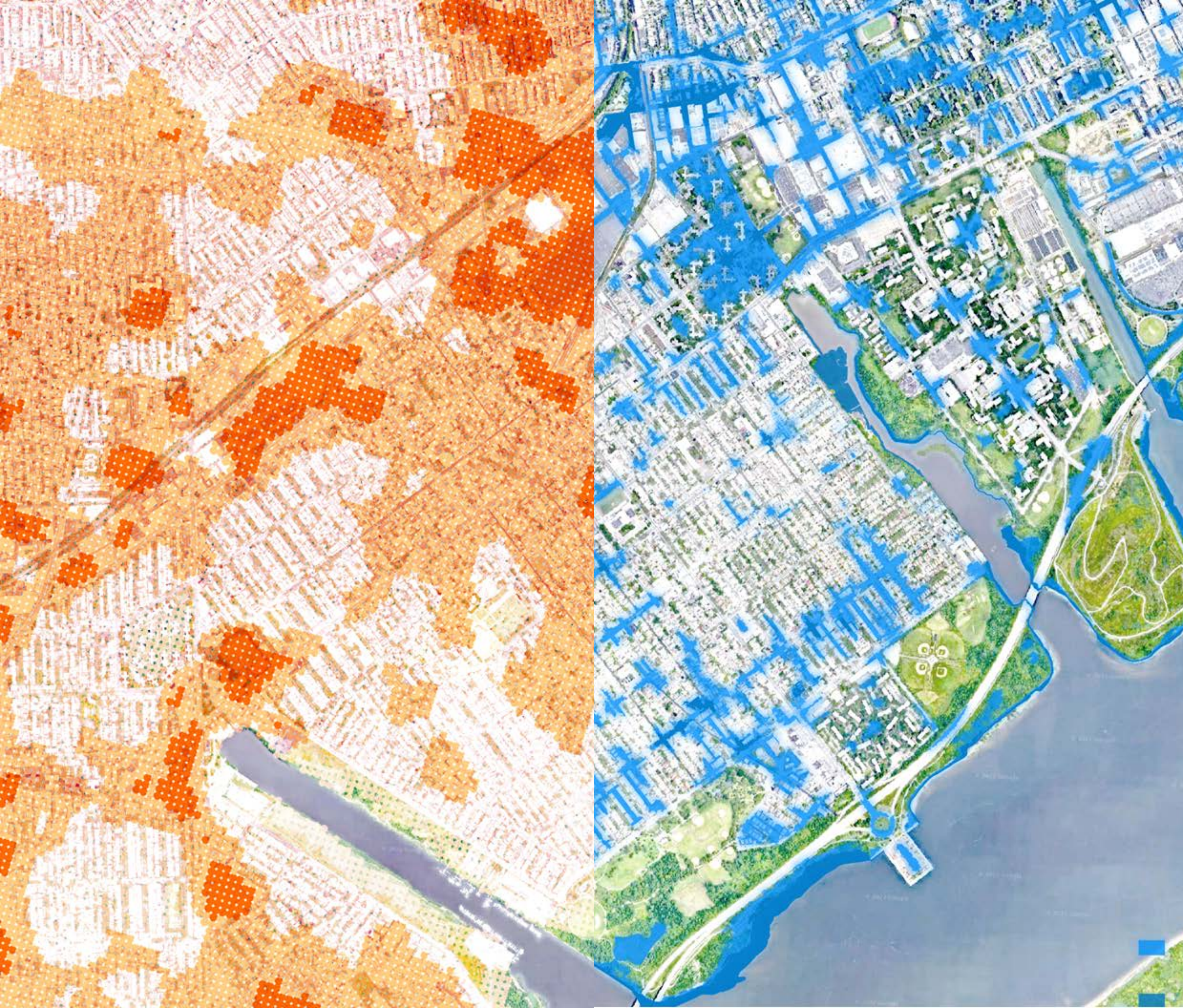


cerámica

árbol samán

moriche palm

Brachiaria humidicola



## #2 Water Works

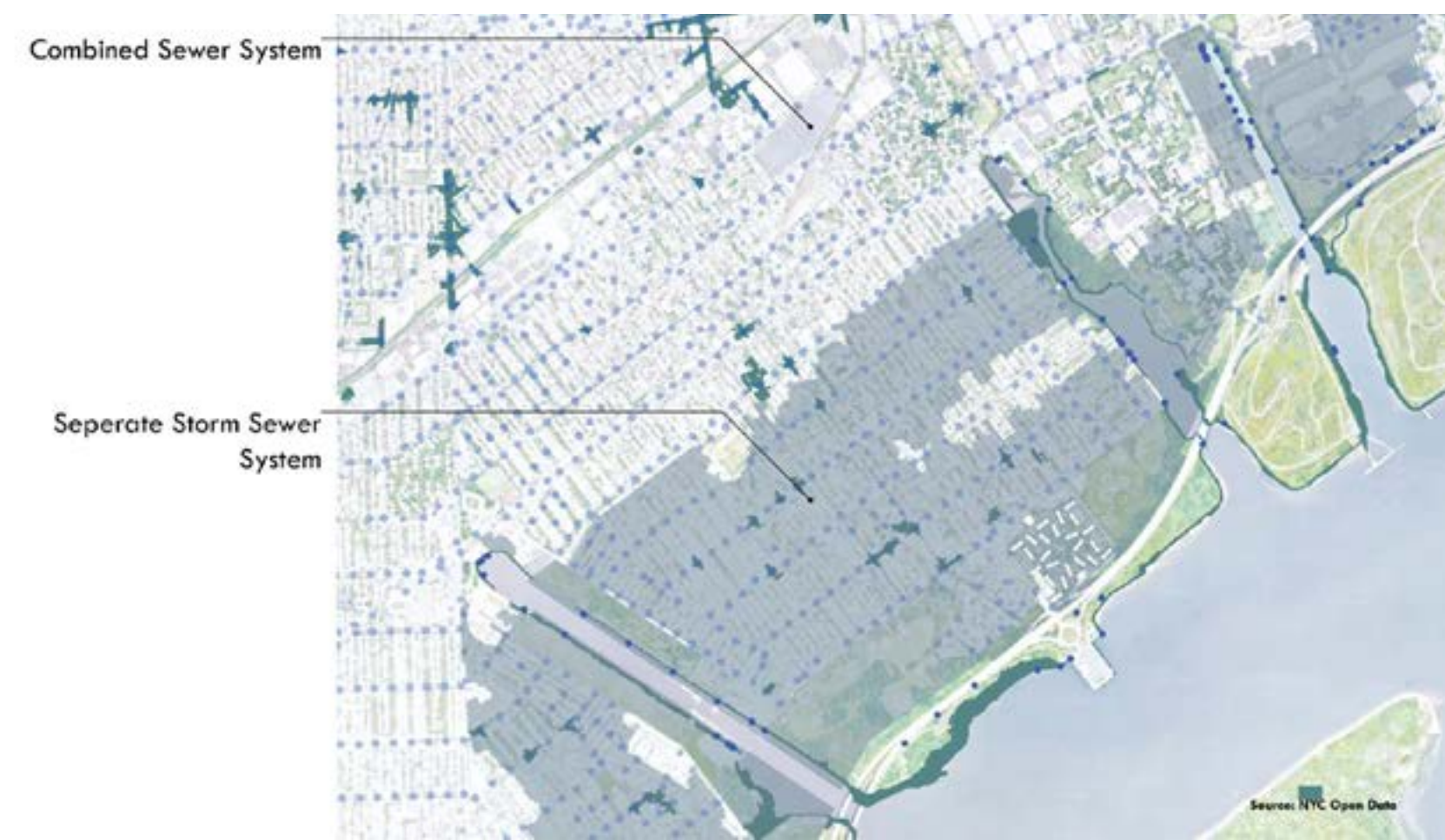
Summer 2022

Team: Vir Shah, Chongyen Ren, Verena Krappitz, Saloni Shah

Extreme weather events, such as intense heatwaves and heavy rainfall, have become increasingly common in urban cores, leading to a convergence of extreme challenges for frontline communities. In the context of New York City's neighborhood of Canarsie, this phenomenon has amplified the issue of climate injustice. The combination of extreme heat and stormwater has given rise to confluencing systems, where the urban heat island effect exacerbates the impacts of heavy precipitation, leading to increased flooding and heat-related health risks. The burden of these environmental challenges falls disproportionately on marginalized communities, compounding existing social inequalities.

Canarsie, Brooklyn





“...rain and runoff are becoming an increasing threat to us, causing damage to our infrastructure and homes!”

“...extreme weather conditions determining our everyday life!”

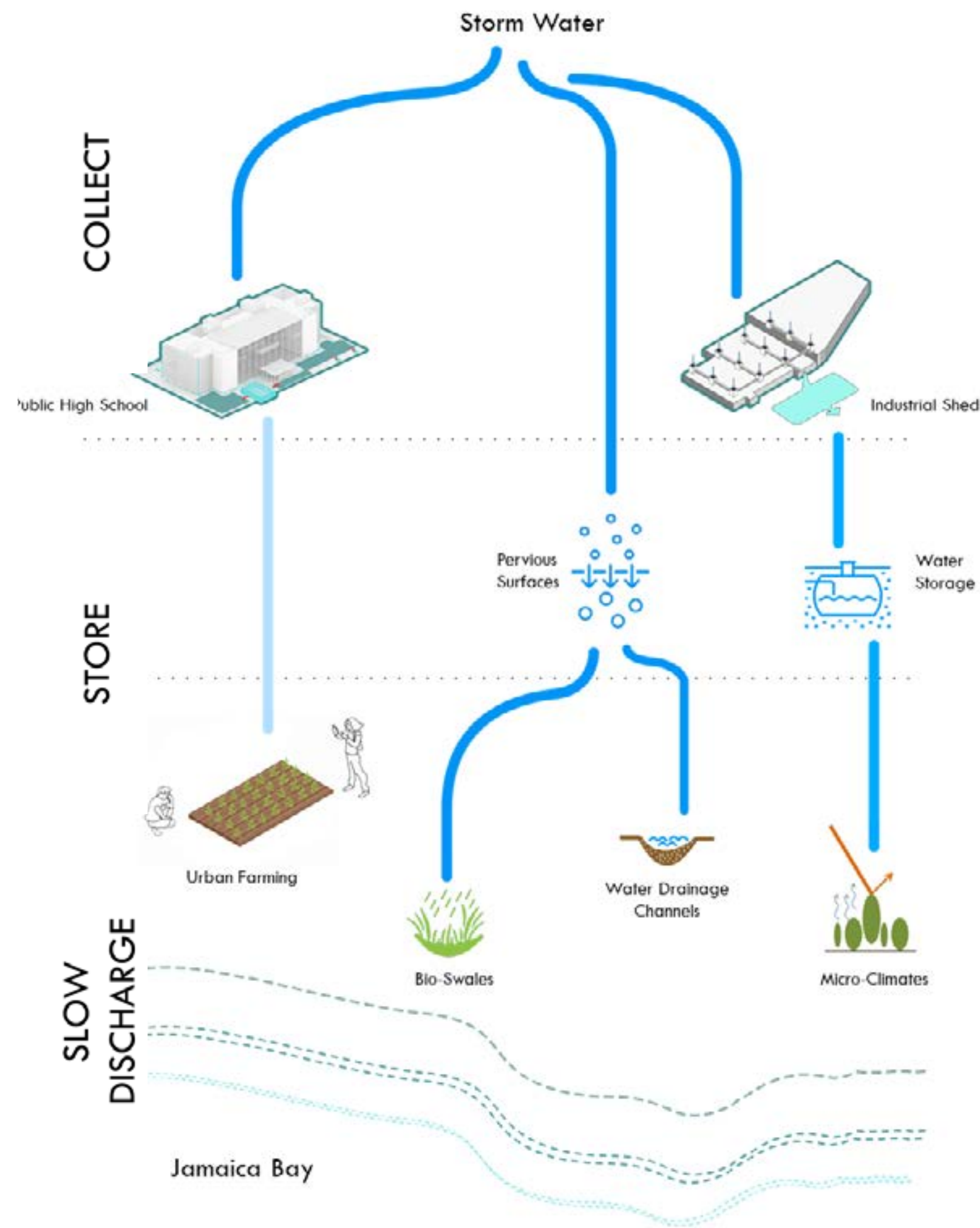
“...heat outrages harming the ones most vulnerable in our communities!”

“...our streets and sidewalks being flooded several times a month!”

As stormwater and urban heat islands continue to intersect, addressing climate injustice in Canarsie and other urban areas becomes crucial to ensure the well-being and resilience of all residents. In response to the challenges posed by stormwater and its impacts on urban cores, design strategies are being implemented to transform stormwater from a potential problem into a valuable community resource.



# ...transforming water into a community resource!



The design aims to mitigate future climate risks while simultaneously supporting community habitats. By implementing green infrastructure, such as permeable pavement, bioswales, rain gardens, and rooftop gardens, stormwater is managed at the source, reducing the strain on drainage systems and minimizing the risk of flooding and provide cooling during extreme heat. Additionally, these features capture and filter stormwater, allowing it to recharge groundwater and replenish aquifers. The transformed stormwater also serves as a vital resource for supporting urban ecosystems, providing water for plants, trees, and wildlife habitats.

This holistic approach to stormwater management not only enhances the resilience of urban areas in the face of climate change but also fosters the creation of green spaces that improve the quality of life for communities, promoting social and environmental sustainability. By recognizing the potential of stormwater as a resource and incorporating it into urban design, we can create a more resilient future for both nature and communities.

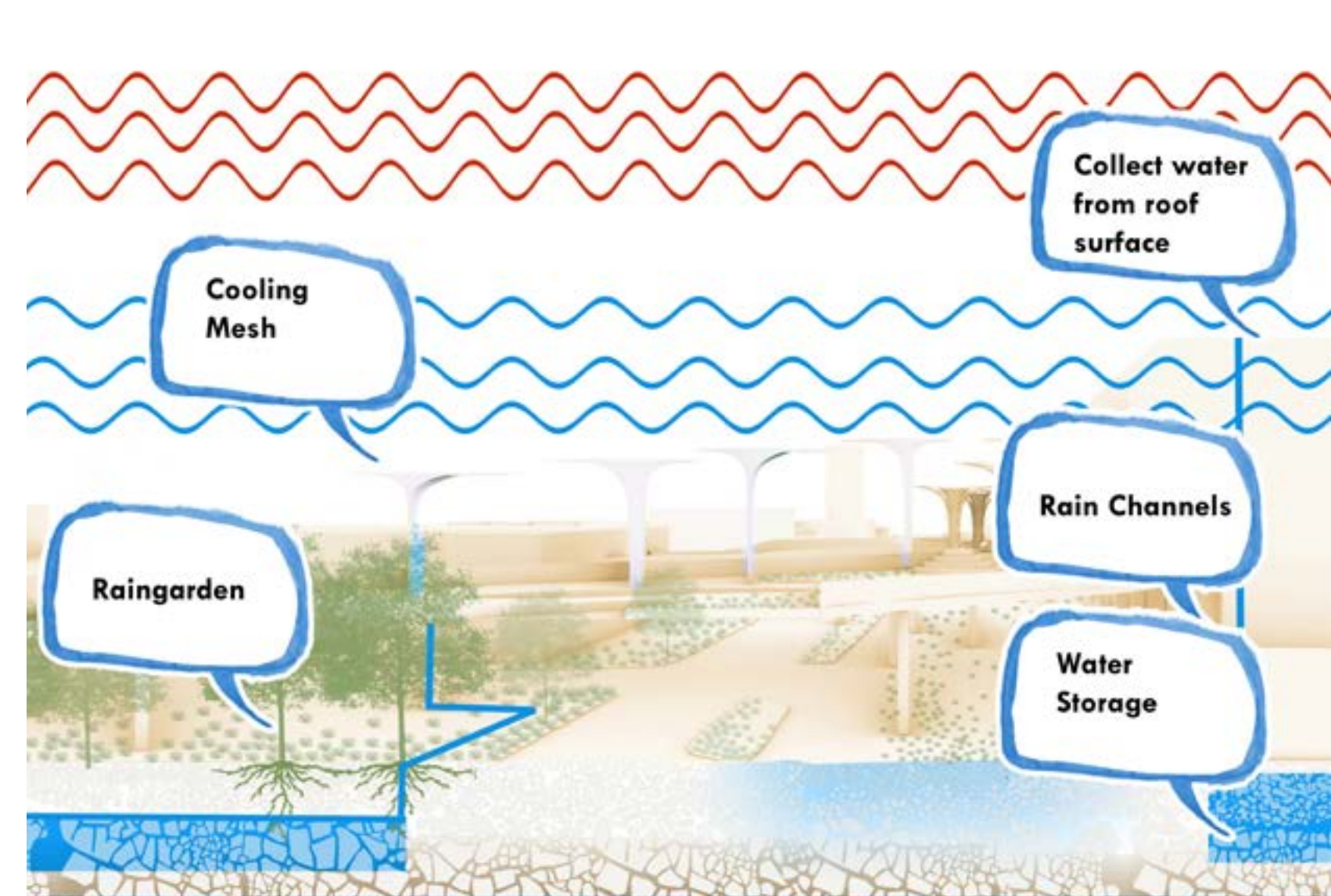
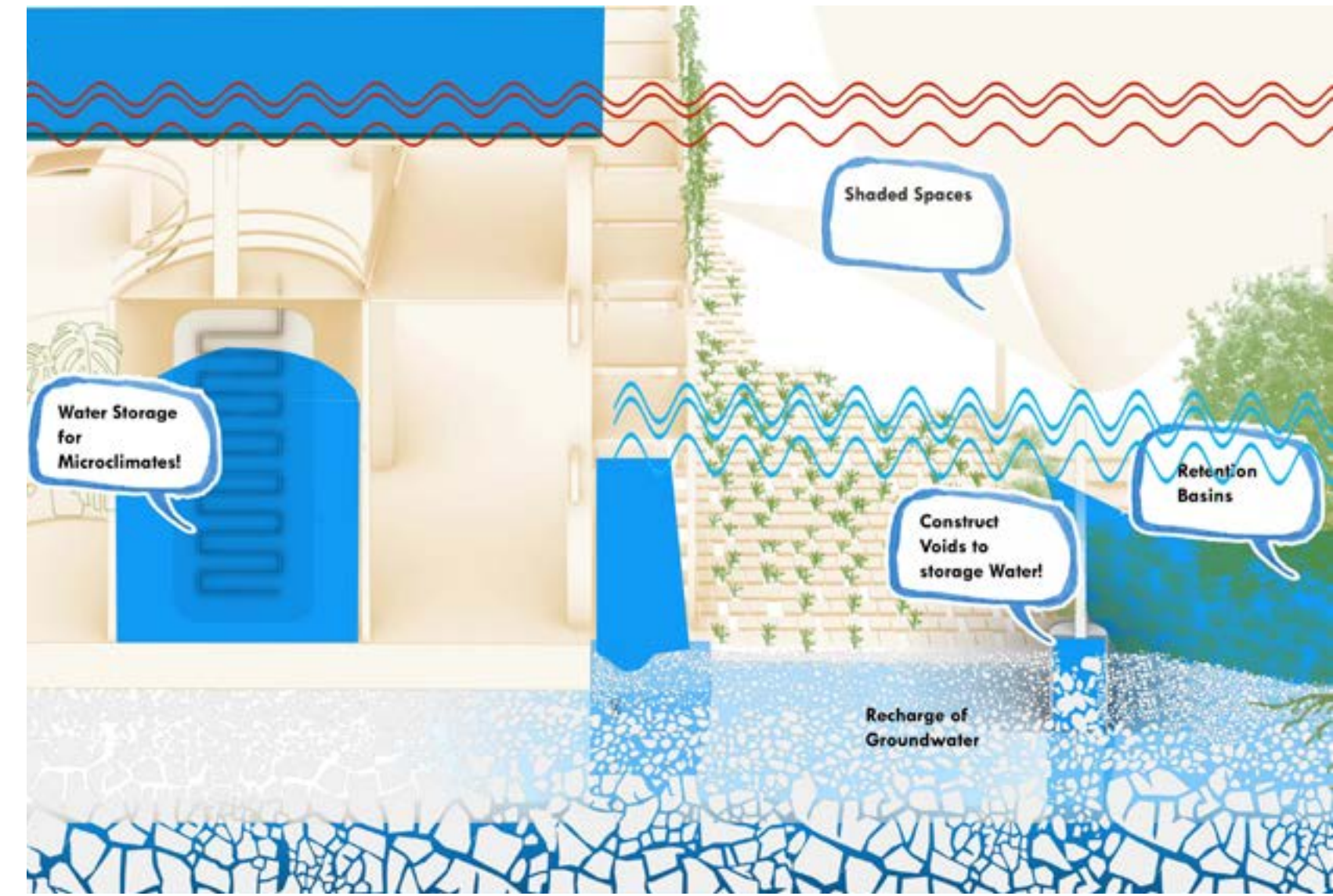
Storing Water at the industrial shed



Slow discharge at the South Shore Highschool



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## #3 Tracing Roots

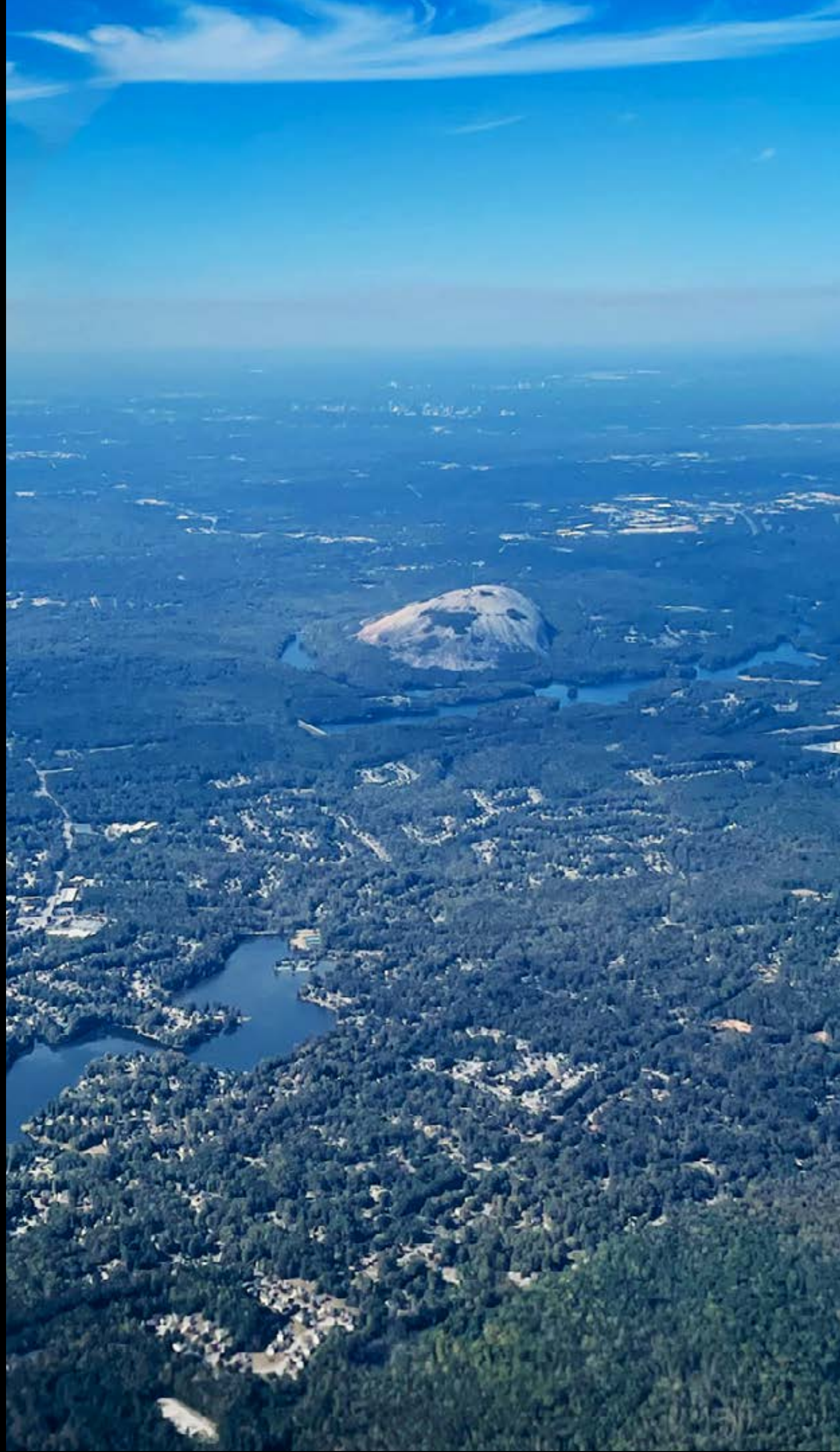
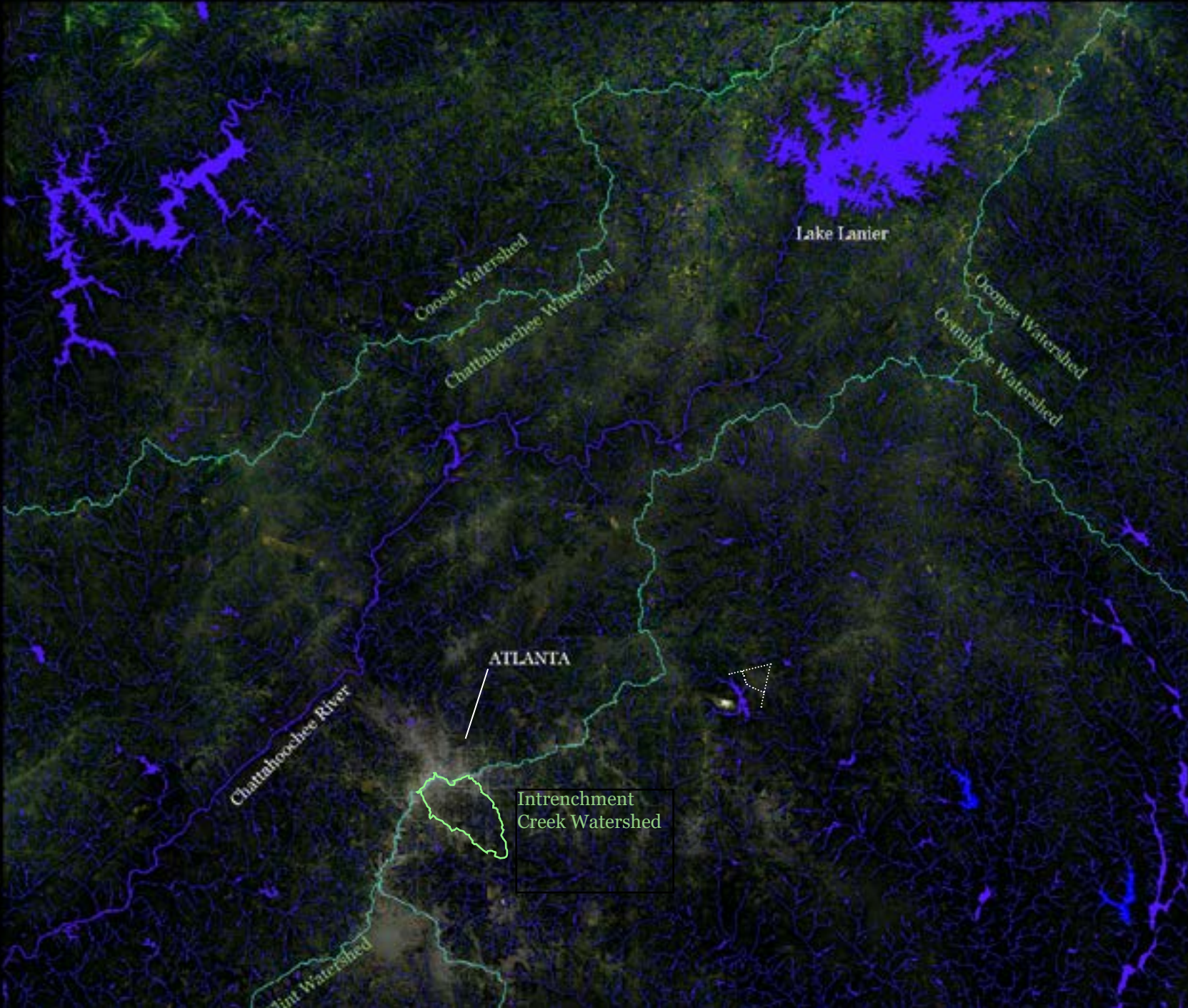
Fall 2022

Team: Devanshi Gajjar, Yashita Khanna, Naumika Hejib, Verena Krappitz

The way current planning practices respond to water is defensive and results in impervious soils that redirect water somewhere else, destroying resilient networks and causing harm to the ones most vulnerable. This is consequence of a white governed property structure that works steadily towards dispossession of people for the sake of western economy.

"Tracing roots" acknowledges the presence of water and re-imagines new conditions along sealed grounds in the watershed. Water is multi scalar and immeasurable and as such destabilizing conventional planning practices.

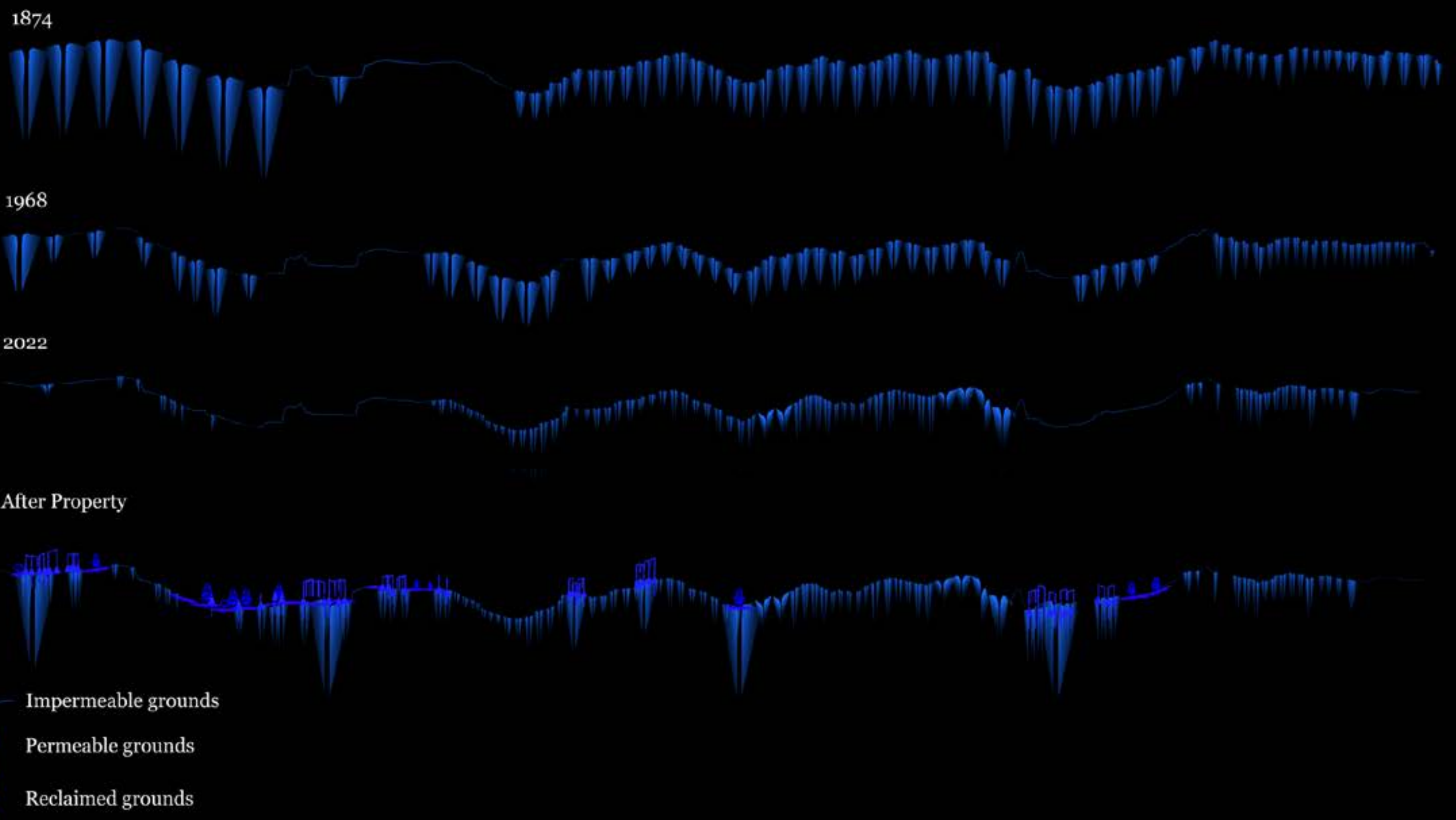
The diagram on the left shows a series of sections through the Intrenchment Creek Watershed in Atlanta. The existing built environment is marked in white. The water flow is decentralized through increased permeable grounds of vegetation marked in green, along with a water sensitive and over-generational, domestic typology. Over time this relieves lower lying areas as well as the existing gray infrastructure,

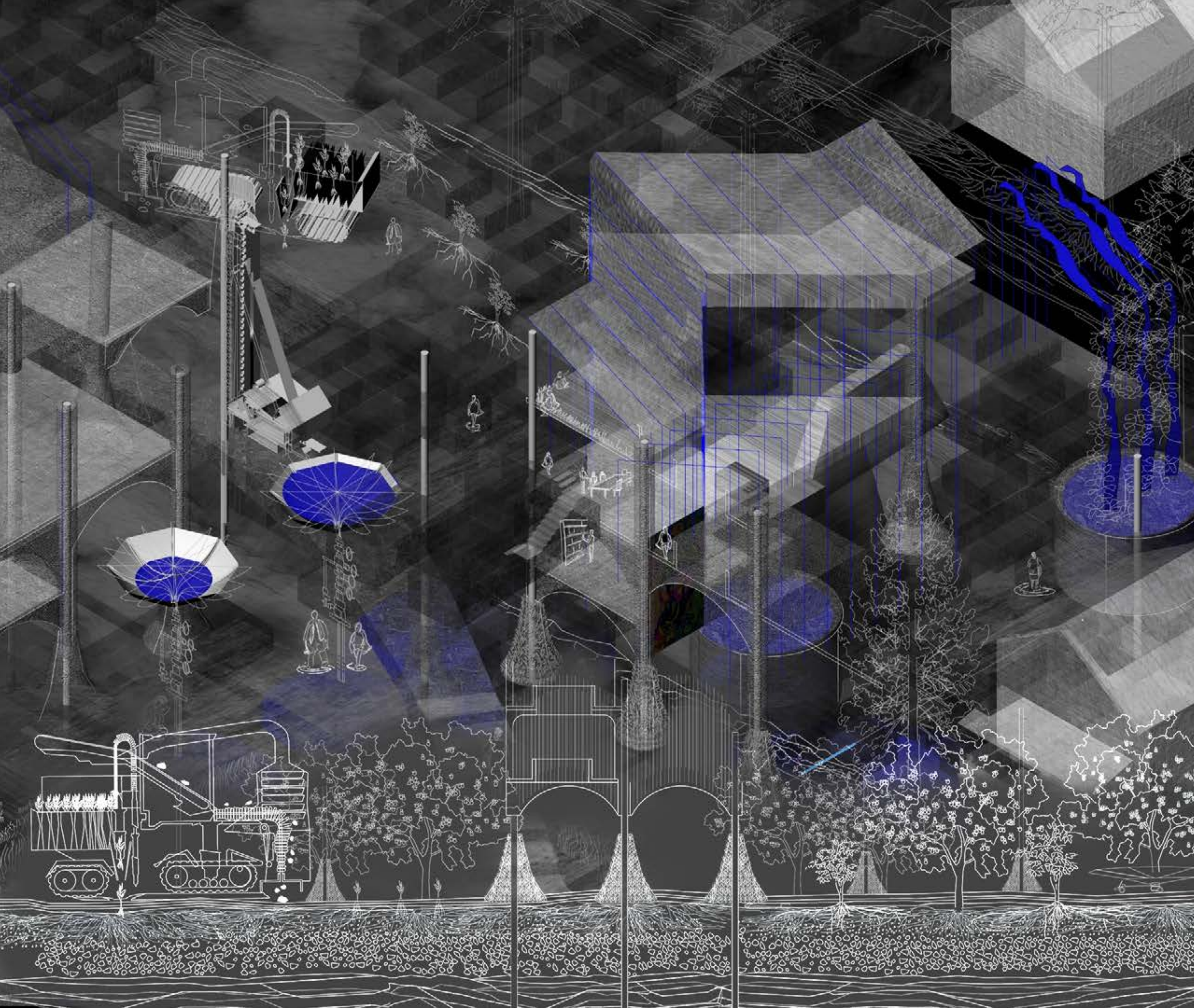


Atlanta is a city of water, sourced from ranges of the Appalachian Mountains. It sits on the Mountain ridge of two watersheds. It resides on a thick granite foundation which holds rich groundwater reservoirs. Yet the water table sometimes is less than one feet below ground. Atlanta's soil contains a lot of hard clay, which makes the infiltration of water difficult. Instead, the water tends to quickly run off to lower grounds. But these soils nourish an immense forest and rich vegetation that handle rainfall, allowing the water to percolate into the ground.



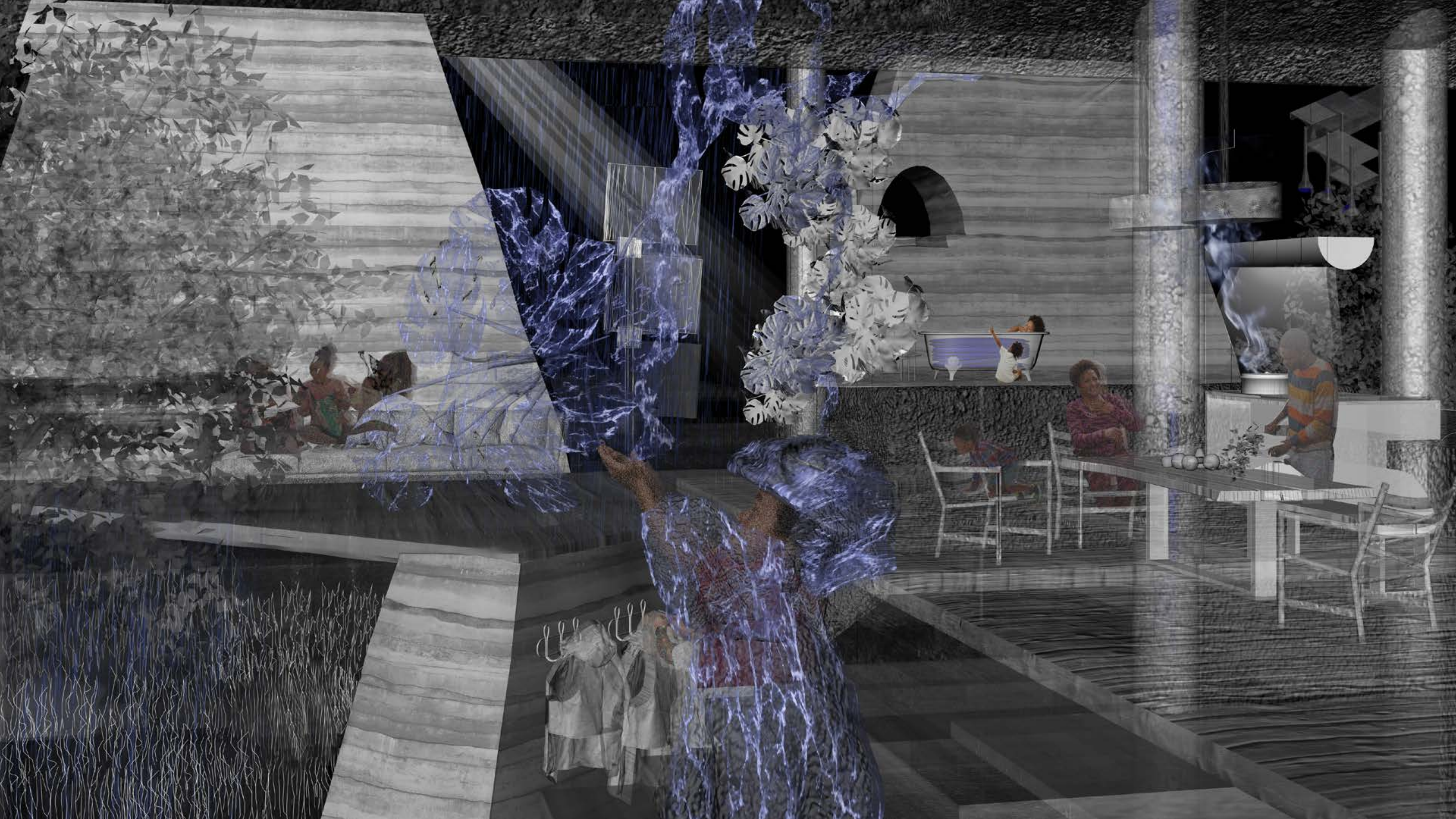
Atlanta's land has been experiencing constant development and infrastructure projects. With it comes a long history of displacement of African American Communities. This constant re-shaping of land re-embodies power structures in action and can be seen in the Intramural Creek Watershed of Atlanta. Constructions throughout the decade led to the demolition of over 9000 thousand houses resulting in over 1/3 of the watershed's area being sealed. These developments result in the loss of vegetation and soil permeability. Today these impervious surfaces lead to high water pressures on the gray infrastructure below and flooding in low lying areas.





Cracks in asphalt are evidence that the land is already pushing back. We take advantage of asphalt's characteristic to crack. In a world after property these seeds grow into full grown orchards where people collectively care for land and water. In a communal effort the structure evolves. Simultaneous field operations happen over time building a foundation for community growth in a co-constitutive relationship with water. The collective care of water builds a new foundation. In addition, the rebar is anchored into the bedrock surrounded by a continuously hardening mycelium layer, which supports the topsoil. Additional support comes from several layers of rammed earth which have different absorbency levels. They incubate the grounds and are constantly rebuilt and reshaped. Over time, these foundations evolve into domestic spaces. They are home to multiple forms of creating, sharing, caring and living where water is embraced as a communal value to collect, nourish, filter and recharge.











In order to locate and coordinate projects across the larger region of Atlanta, we embarked on the development of a large-scale print map utilizing GIS Data.



1938-1943 Mosaic



1968

# #4 Demographic Shift in South Central Atlanta

Fall 2022

Team: Maria Gabriela Flores, Verena Krappitz

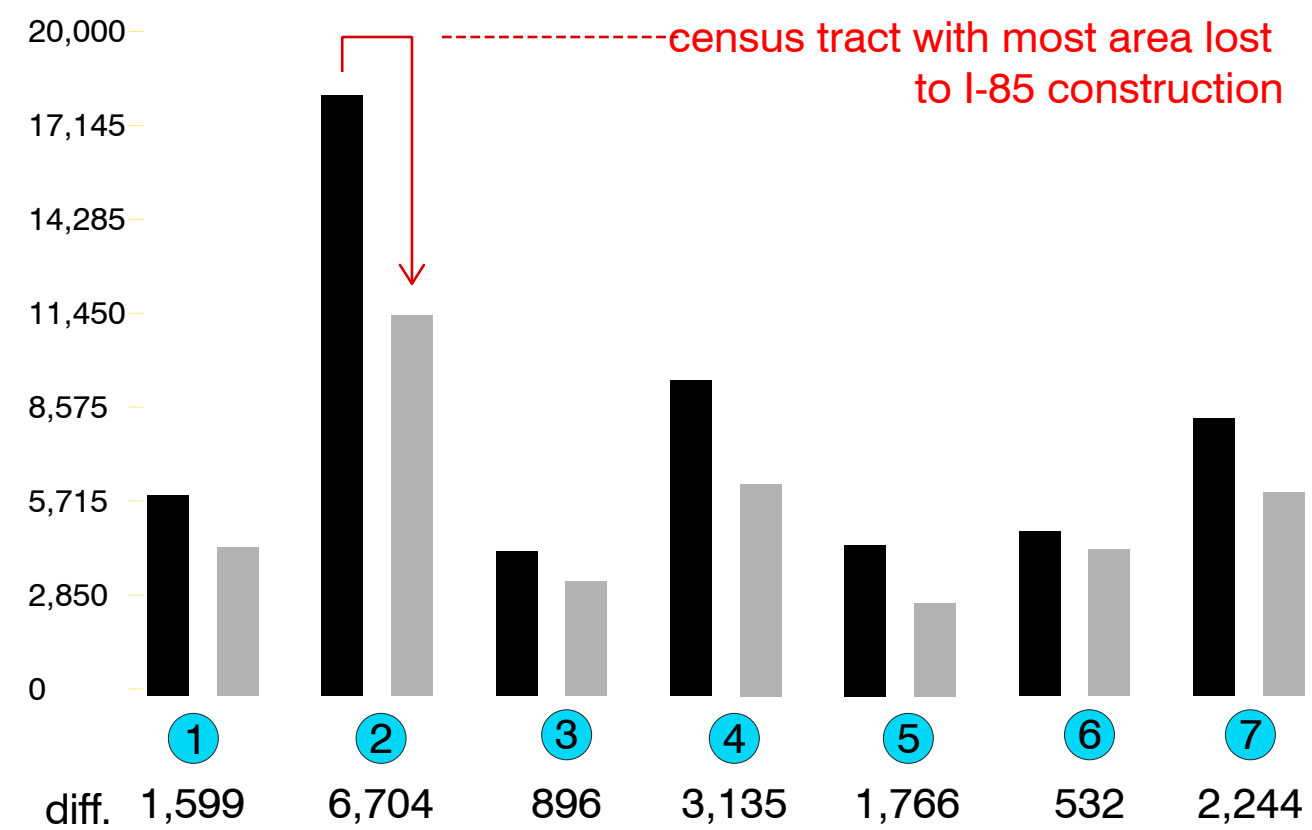
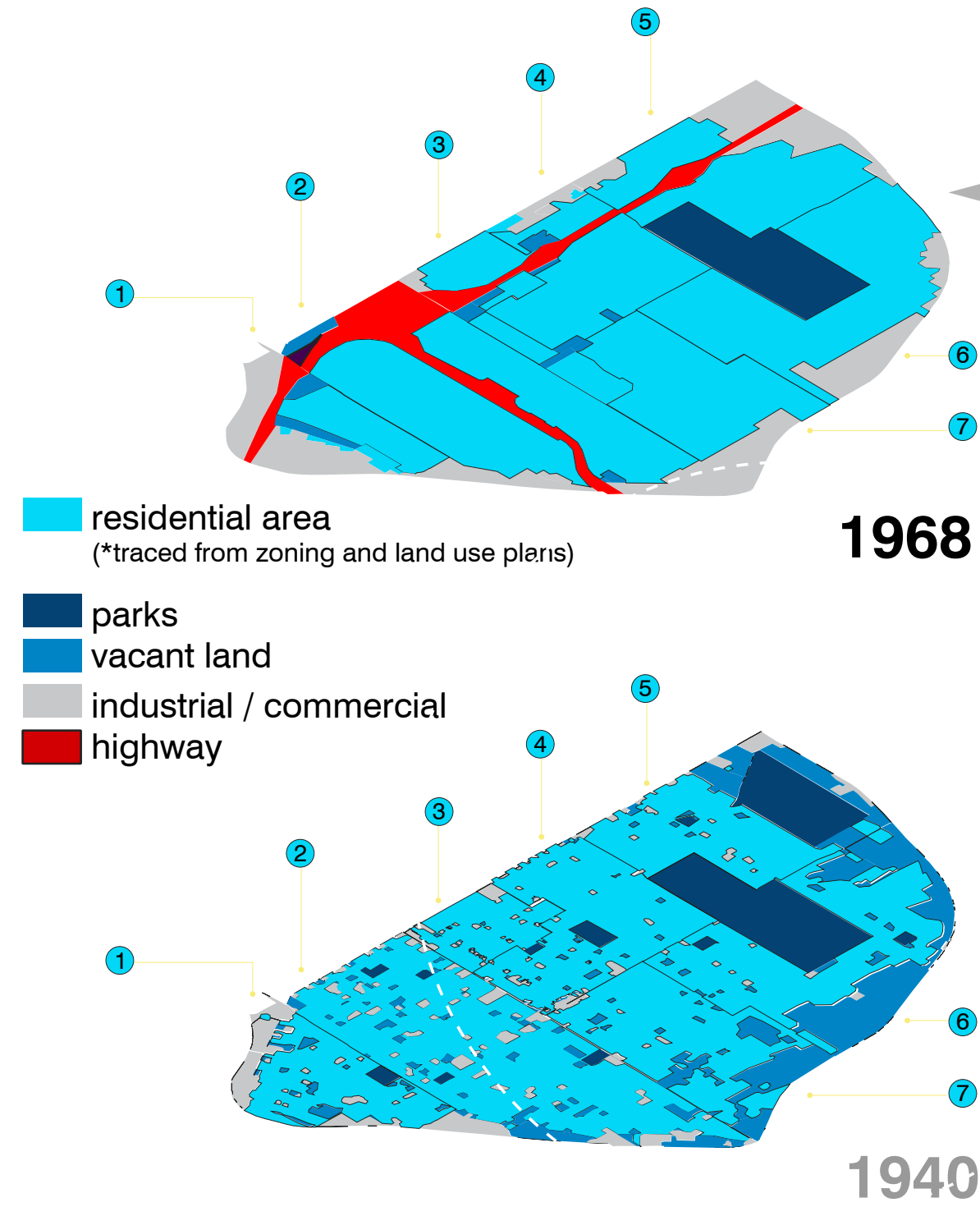
The Federal Highway Act of 1956 created the interstate system of highways prevalent in American cities today. At the time, the implementation of this planning vision was equivalent to progress, national defense and the immediate creation of jobs. In Atlanta, interstate highway I-85 was conceived as a part of this program. Its history is deeply intertwined with the discussion around racial inequality and displacement in the United States.

We know today that the creation of large-scale transportation infrastructure had contentious effects on future land use and demographic change in the city, especially in the southern portions of metropolitan Atlanta where population is predominantly composed of Black, Indigenous and people of color. We believe there is a correlation between the geographic areas selected for eminent domain to be used for the purposes of green and gray infrastructural acts and the racial qualities of the people affected by these actions. We begin the investigation with the assumption that the highway system had huge impacts on the residential racial pattern of the directly impacted and adjacent neighborhoods.

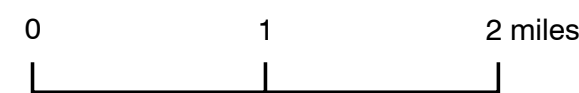
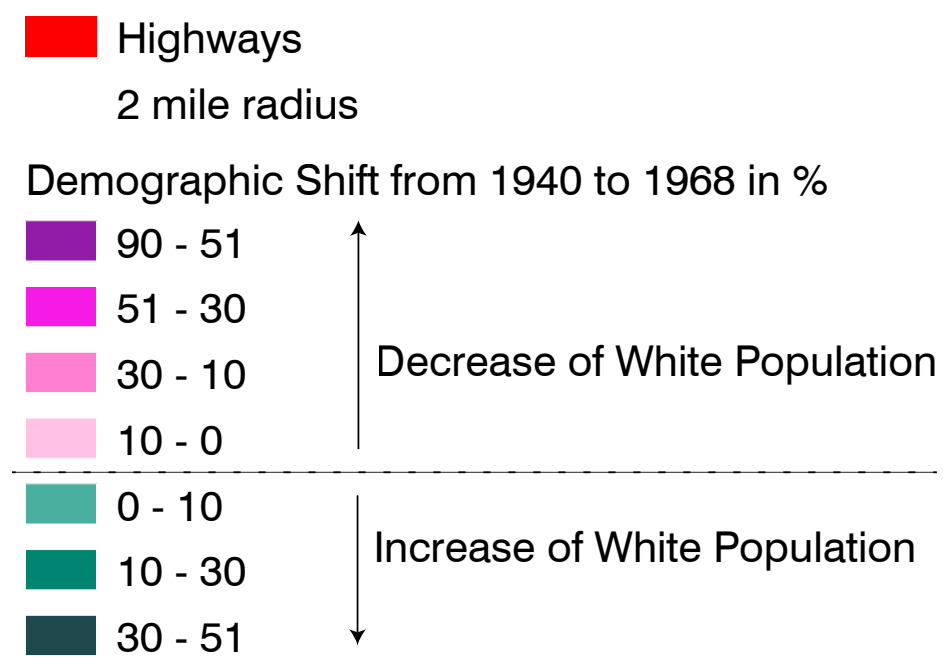
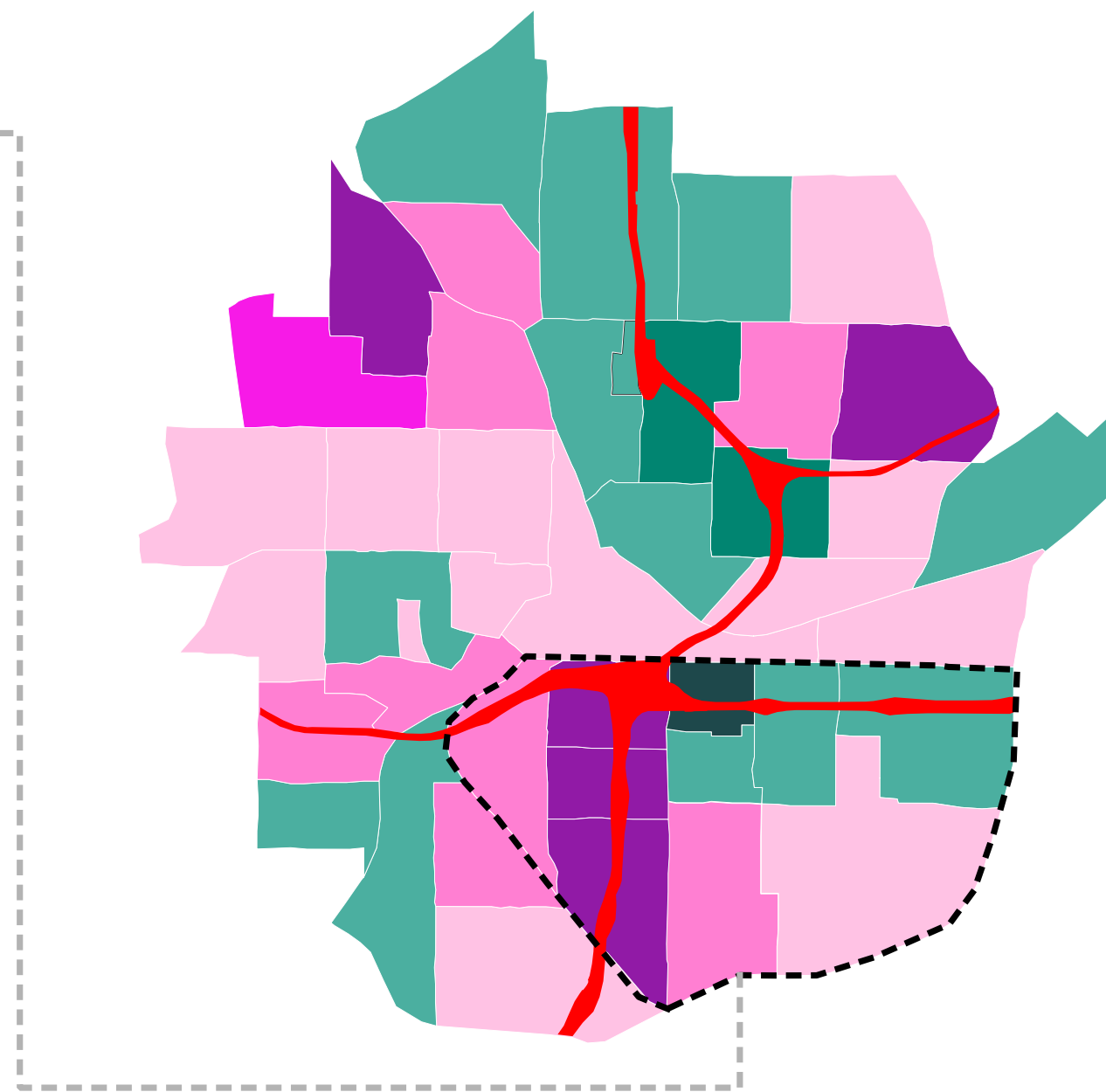
**Research Question:**

Where were clusters of African American communities in 1940? Which census tracts lost the most residential area to transport/ highway infrastructure between 1940 and 1968 in South Central Atlanta? To what degree is the construction of highways a driver for neighborhood change?

Land Use Change in Southern Central Atlanta, 1940-1968



Demographic Shift in Central Atlanta, 1940-1968



CRS: UTF 8  
EPSG:26767 - NAD27 / Georgia West

In the analysis on the left we isolated the areas near to the census tract with most land use change due to transportation infrastructure resulting from the construction of I-85 between 1940 and 1968.

By generating trace polygons according to common attributes or categories of land use such as residential, industrial and commercial, parks, vacant, and new highway, this analysis demonstrates the area of residential units in relation to total population for the selected seven census tracts.

The map shown at right overlays geo-referenced US Census data between 1940 and 1968 in order to analyze the shifts in racial composition in the time following construction of highways in Atlanta. Demographic shifts are compared per census tract in order to closely follow these changes and their relation to the patches of new highway.

In South Central Atlanta, we can see that there was a very high shift in racial composition, with decreases in White populations coinciding with the course of the highway. Likewise, we see an accumulation of White population start to form towards the north.

For the purposes of clarification, the changes shown at left are relative to the percent population for each group within each individual census tract. Increase or decrease is relative to the share of that racial demographic in that particular tract.

The map also includes the geographic reference of interstate highway (in red) and the outline of a 2-mile radius from the Five Points, generally considered to be the center of town.

Typology:

◆ Residential ◆ Educational ◆ Religious ◆ Civic

Site	Music School
Region	Donetsk
Address	Svyatohirs'k, Donetsk Oblast, Ukraine, 84130
City	Sviatohirsk, Donetsk
Category	Educational
Typology	
Date of Constructed	no data found
Date of Destruction	21.05.2022
Website	
Sources	<a href="https://classicfm.com/music-...ukraine">classicfm.com/music-...ukraine</a> <a href="https://kyvindependent.com/unc...last">kyvindependent.com/unc...last</a>

# #5 The Destruction of Ukrainian Cultural Heritage

Spring 2023

Team: Anna Kim, Maria Berger, and Verena Krappitz

 [Please see the full work here!](#)

 [Please see the web map here!](#)

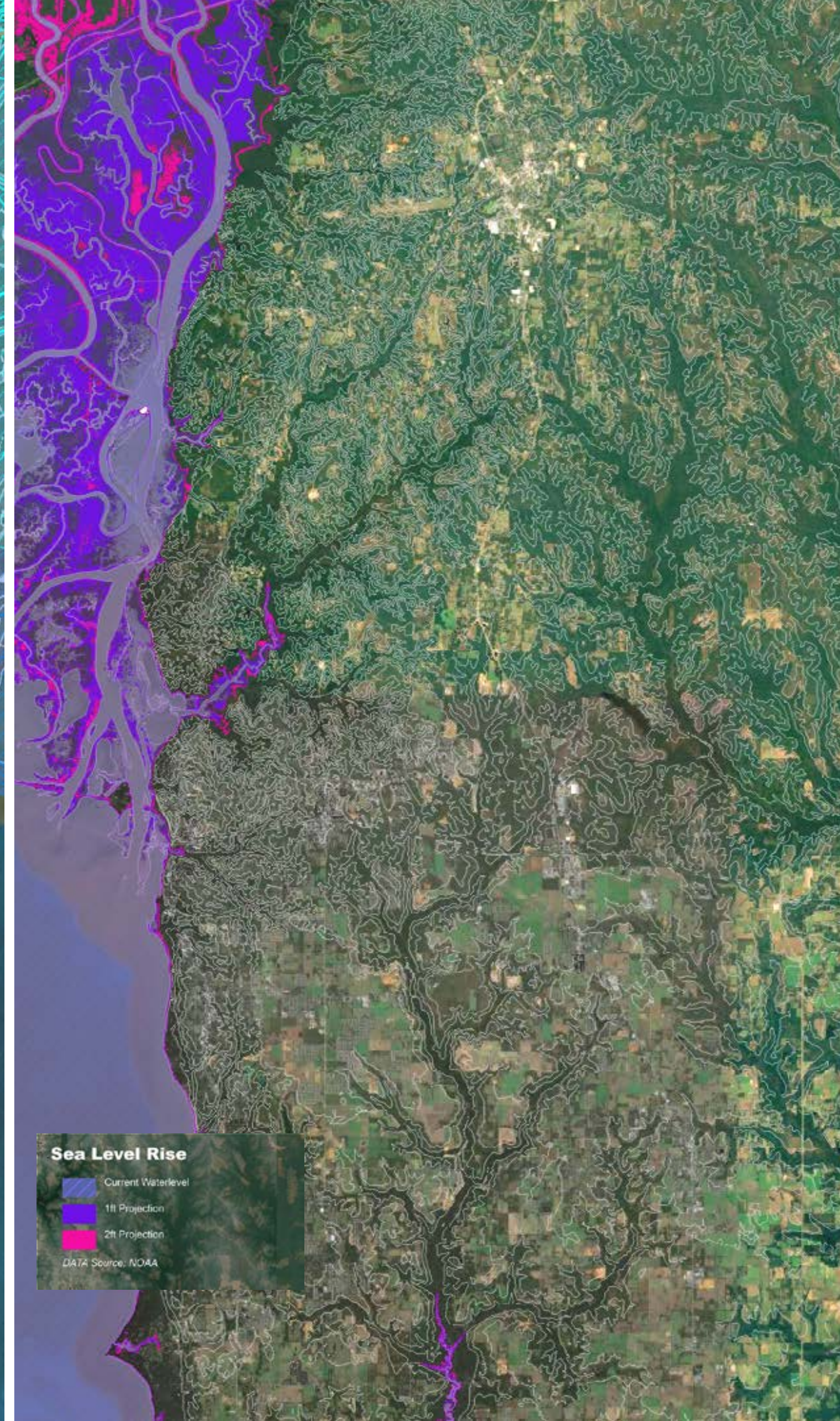
With Ukraine at the forefront of the international geopolitical discourse, the project committed to investigate on how the Russian invasion has systematically targeted Ukrainian history, culture and identity.

UNESCO has verified damage to over 250 sites with cultural significance in Ukraine. Much of the destruction has been inflicted on religious and sacred places, representing over 50% of the confirmed cases but has extended to libraries, museums, monuments, and theaters.

The [original dataset](#) published by UNESCO provided the groundwork of our research. Building upon their preliminary damage assessment we added the following attributes to respectfully archive these places of memory to document and preserve evidence of cultural loss due to the conflict.

Site Name | Region | Address | City | Latitude | Longitude | Typology | Date of Construction | Date of Destruction | Weapon Used | Further Links





# #6 Resilient Coastlines in Mobile, Alabama

Fall 2022

Team: Aashwita Yadav, Thed Leventhal, Verena Krappitz

 [Please see the storymap here!](#)

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The case study aims to investigate and enhance coastal resilience in Mobile, Alabama, a region susceptible to the impacts of climate change and rising sea levels. How is it impacting communities and their livelihoods? We understood the existing vulnerabilities and develop sustainable strategies to mitigate the risks associated with coastal hazards. How can a Blue New Deal preserve Alabama's unique natural resources while coexisting with Mobile's industrial waterfront?

## #7 Publication

Fall 2022

Text, Layout, Editorial  
Team: Anagha Arunkumar, Donnal Baijnauth,  
Verena Krappitz

 [Please see the full publication here!](#)

