## **Submergence As Emergence Expanding Social Waterscapes In A Shrinking City**

by

Milan Outlaw Bachelor of Science, Architectural Studies University of Wisconsin - Milwaukee 2015

Submitted to the Department of Architecture in partial fulfillment of the requirements for the degree of

Masters of Science in Architecture Studies

at the

Massachusetts Institute of Technology

June 2017

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## Submergence As Emergence Expanding Social Waterscapes In A Shrinking City

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Submitted to the Department of Architecture on May 22nd 2017, in partial fulfillment of the requirements for the degree of Masters of Science in Architecture Studies

### ABSTRACT

This thesis seeks to reclaim spaces of urban disinvestment by developing alternative forms of contact and connectivity across urban water systems. Framing water as a mode of gathering, this project connects myriad urban realities, peoples, and practices. Alternative forms of linkages provide users an opportunity to disrupt systems of power and inequities that have worked to uphold decades of urban injustice, class isolation, and racial segregation. This is most necessary in socially marginalized spaces, where social cohesion is often fractured or nonexistent.

Such is the case in Milwaukee, Wisconsin, a once flourishing industrial city founded at the confluence of three rivers on the shores of Lake Michigan. The city's water network was once vital to the growth and livelihood of the city, as a port, a live blood of its vibrant industries, and for transportation and recreation. The city's seemingly public water network today is hyper-policed and inaccessible to a large demographic, due to the city's history of segregation.

In the last decades of the 20th century, as industries vanished, the city was left waning – its remaining businesses and amenities rapidly declined and urban decay spread, creating inequality, unemployment, and segregation. Those hit hardest were people of color – African Americans and Latinos, often unable to escape the unimaginable systemic conditions.

Acknowledging the existence of these communities and spaces, this thesis asks: How can design respond to inequalities created by urban systems and how might water be used a means of democratization?

Visualizing new terrains of navigating and reimagining the city, this design proposes to submerge fallows and voids within the city and create a canal network in their place. In doing so, this work offers new ways of imagining river recreation and links leftover areas via a third space – the network of water passages. Creating socially relevant third spaces allows for unstructured interaction and engagement across social and cultural differences, socially binding marginalized spaces and peoples.

Thesis Supervisor: Rafi Segal Associate Professor of Architecture and Urbanism

Thesis Supervisor: Brent Ryan Associate Professor of Urban Design and Public Policy

## Acknowledgments

I would first like to thank my thesis committee for all of their guidance and support. My advisors, Brent Ryan and Rafi Segal, for pushing me to explore my interests and encouraging me to be bold and think radically with this project and the implications it may have on the City of Milwaukee. The feedback they gave me during this process was crucial to not only shaping my project, but shape how I think and react as a designer and researcher.

My reader, Antonio Furgiuele, who has been offering me his support and encouragement since my undergraduate days in Milwaukee. He surpassed the responsibilities of a thesis reader, having hour long conversations with me reagarding thesis, and always willing to offer his help and insight.

I would like to thank my cohort, Garine Boghossian, who I joke served as the fourth person on my committee always passionately giving me feedback (whether or not I asked for it) as well as Jie Bao, Jamie Farrell, Junjiao Gan, Luisa de Lucena Schettino, Xiang Xu, and Kris Menos. You all helped me transition into life away from home by offering support and encouragement over the course of these last two years and I will always be grateful.

As well as the many other friends I've made during my time at MIT, who served as my second family.

Arijit Sen, for motivating me every step of the way.

Finally, I must express my very profound gratitude to my mom for all of her love, support, and reassurance throughout my years of study. None of my accomplishments would have been possible without you. As well as the rest of my family for their unconditional support and understanding.

Thank you all.

Sincerely, Milan Outlaw

# EMERGENCE

EXPANDING SOCIAL WATERSCAPES IN A SHRINKING CITY

> Milan Outlaw SMArchS Urbanism 2017



Submergence As Emergence Expanding Social Waterscapes In A Shrinking City

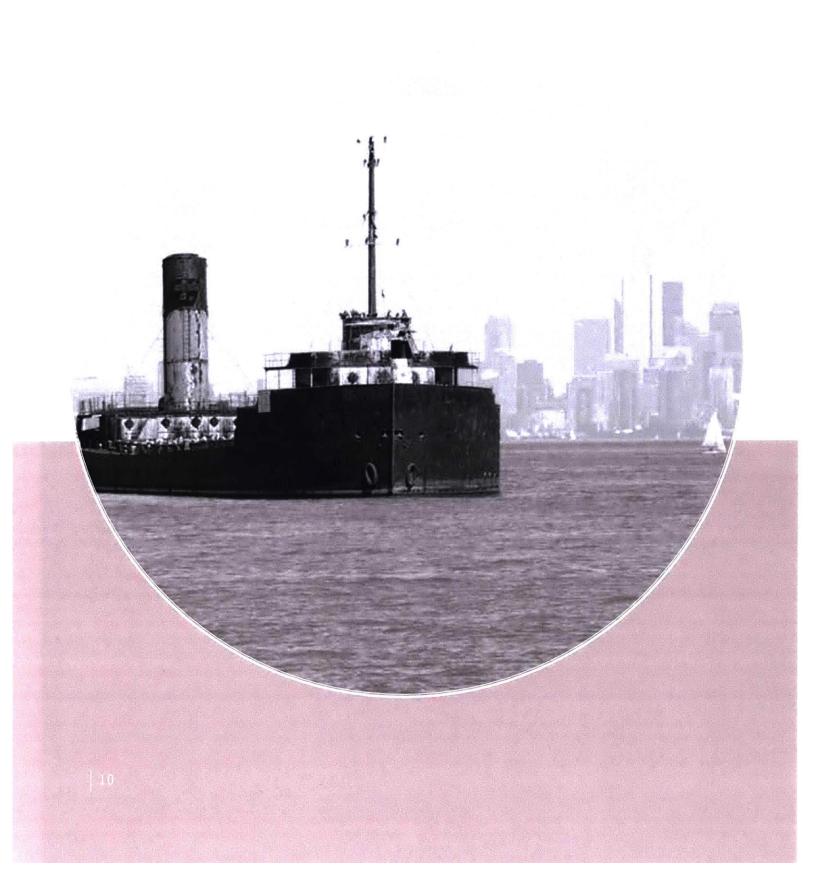
## **CONTENTS**

- **01 Great Lakes Port Cities** 10
- **02 Producing the Rust Belt** 16
- **03 Gathering Place by the Water** 26

**04 Milwaukee's Rivers** 42

## **05 Submergence As Emergence** 86

**06 Bibliography** 143

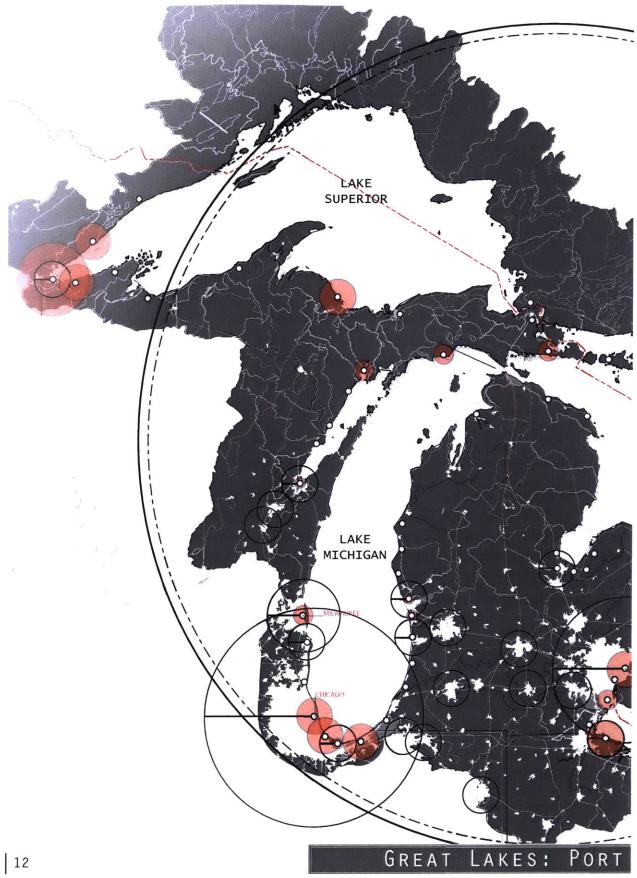


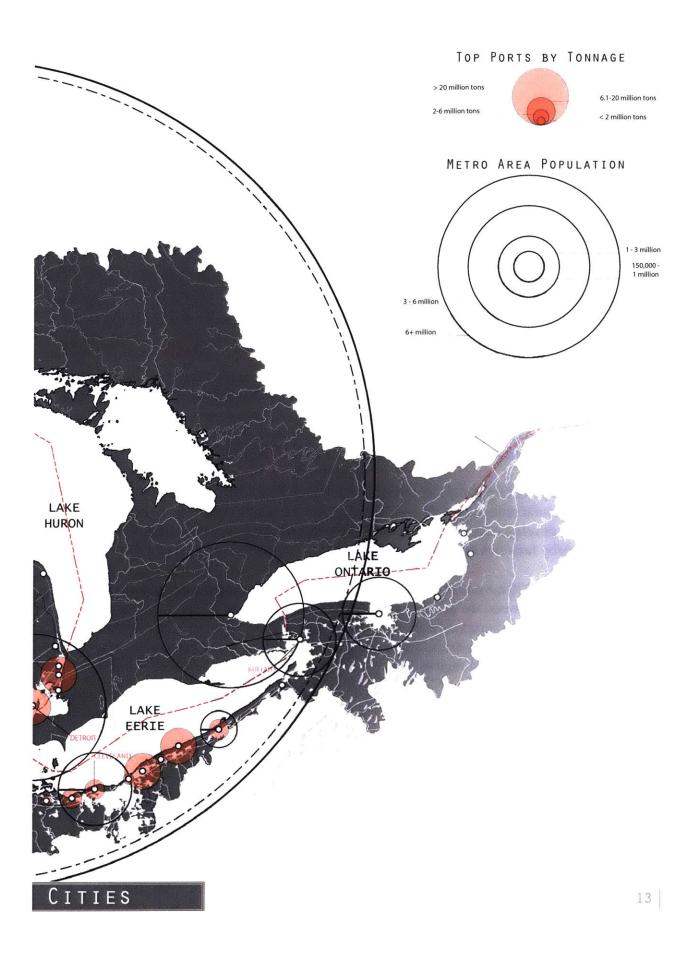
## 01 Great Lakes Port Cities

Containing approximately 20% of the world's fresh water and home to 58 million people, the Great Lakes region is quickly becoming known as the United State's fourth coast.

Consisting of lakes Huron, Ontario, Michigan, Eerie, and Superior – the Great Lakes span more than 750 miles from east to west making them the largest group of freshwater lakes in the world. Geographically, the region lies on the American-Canadian border; on the United States side the region covers the western ends of New York and Pennsylvania, and the American Midwest states of northeastern Minnesota, and Illinois, Indiana, Michigan, Ohio, and Wisconsin The region's supply of inland freshwater allow for consumption, transportation, power, recreation, and an array of other uses. Historically, the natural resources of the area, timber, coal, iron ore, soil, and fresh water, made it an attractive destination.

Serving as the highways of the 1800s, the inland waterways of the Great Lakes were best known for their ability to move people and industry. As people flowed into the region grain, lumber, iron, and other commerce poured out – creating a booming maritime industry across the Great Lakes. Fleets of ships, railroads, and skilled workers served industries around the lakes.





By the end of the 19th century Chicago had become one of the busiest ports in the world and by beginning of the 20th century, cities such as Chicago, Cleveland, Milwaukee, and Detroit had emerged as thriving manufacturing, trading, and research centers.

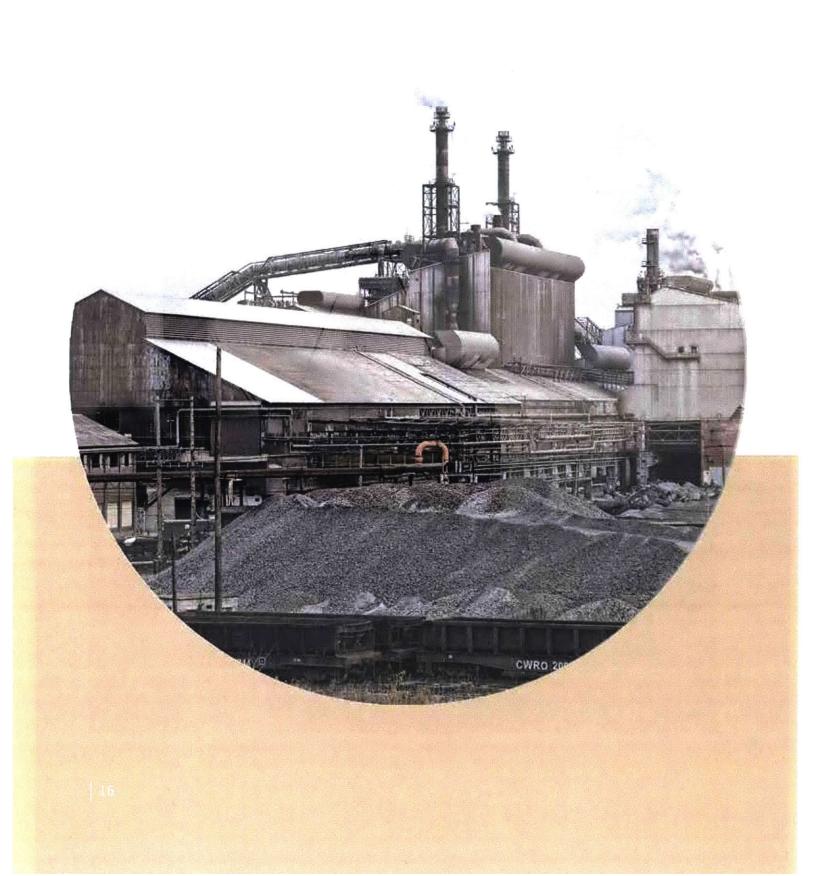
The manufacturing of automobiles, automotive parts, trucks, tractors, and weapons, along with other durable goods, drove the steel, machine tool, metal bending, and other industries in the region.

During the first half of the 20th century millions of migrants poured into to the Great Lakes region from Europe, primarily Germany, Scandinavia, Holland, and Poland. Following World War II, the region's booming economy attracted Black Americans from the Southern United States. The Great Lakes region became a place where newcomers could take advantage of the employment opportunities, cheap land, and other resources to better their lives.

Of all the industry coming out of the region, the automobile industry came to be the signature of Great Lakes manufacturing and economic activity. The industry's rapid rise in the 1900s spurred the growth and development of dozens of Midwestern neighborhoods where life was situated around the nearby factories and plants.

By the 1960s and 1970s, a rise in globalization, job outsourcing, and the decline of U.S. steel and coal industries, caused the decline of the Great Lakes industrial center. Many of the once thriving cities and neighborhoods were left waning as a result of decades of deindustrialization at the hands of corporate industries. The term "Rust Belt" originated at this time as a cause of the deterioration of the industrial region.



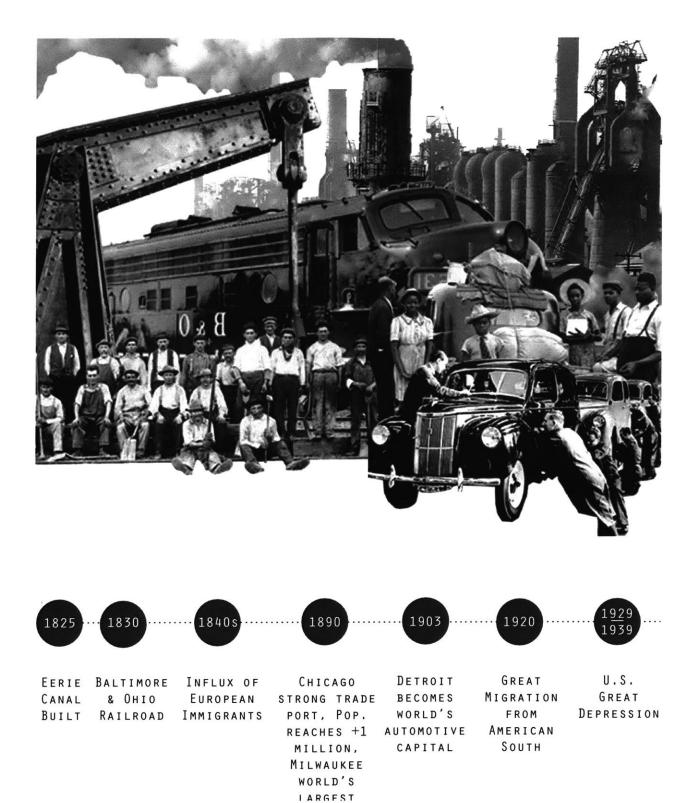


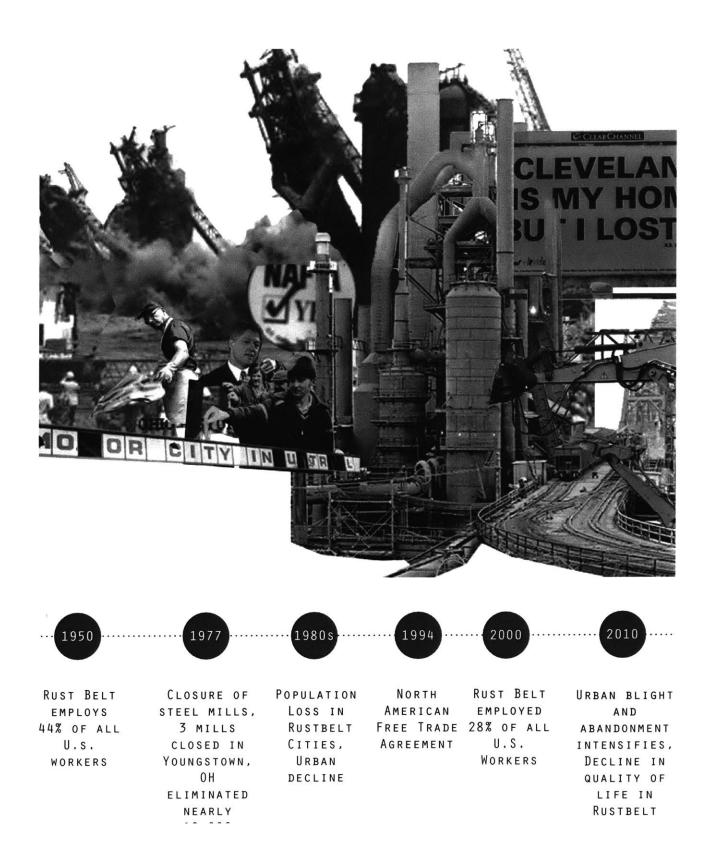
## 02 Producing the Rust Belt

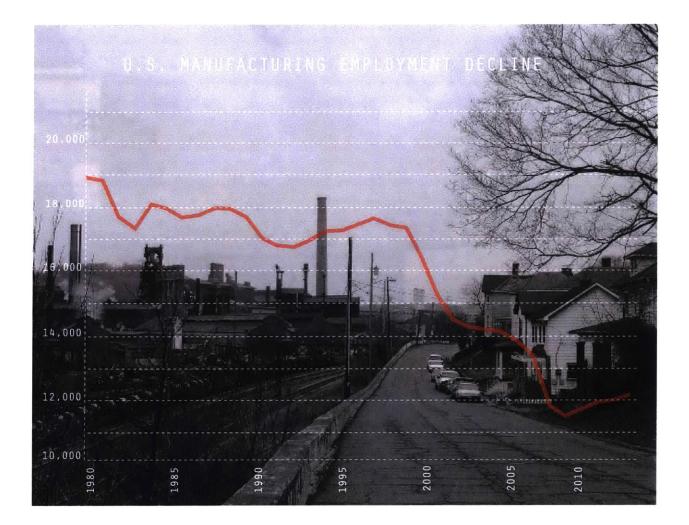
The term Rust Belt is used to describe the Great Lakes regions of the United States that were left distressed in the late 20th century as a result of the decline in U.S. based industrial manufacturing. The phrase has come to signify the physical, economic, and social deterioration of the once thriving region.

Today, massive rusted abandoned factories, population loss, hypersegregation, high poverty rates, and inferior public services characterize the majority of Rust Belt cities. From the late 19th century up until the mid 20th Century, the Rust Belt region was known as the industrial heartland of America. The region's success of industrial manufacturing was due to its close proximity to the Great Lakes waterways, canals, roads, and railroads. Within a hundred year period the region saw an influx in population due to the industrial jobs offered.

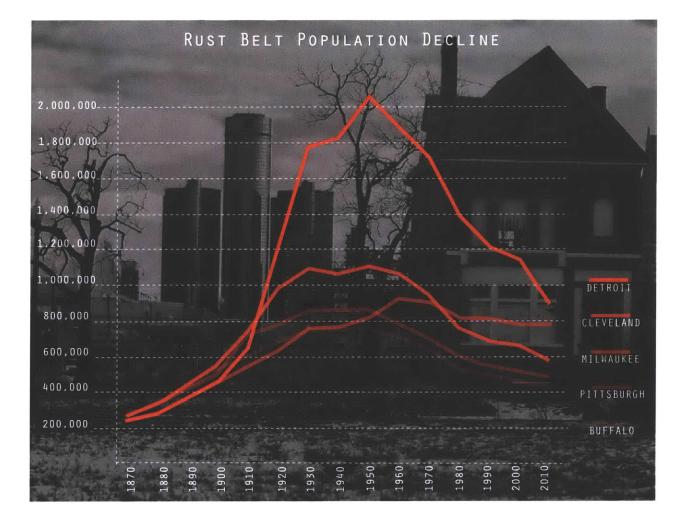
By 1950 the region employed 44% of all U.S. workers however by the late 1970s, due to numerous economic factors, cities in the region began to struggle and by 2000 the Rust Belt employed only 28% of all U.S. workers.





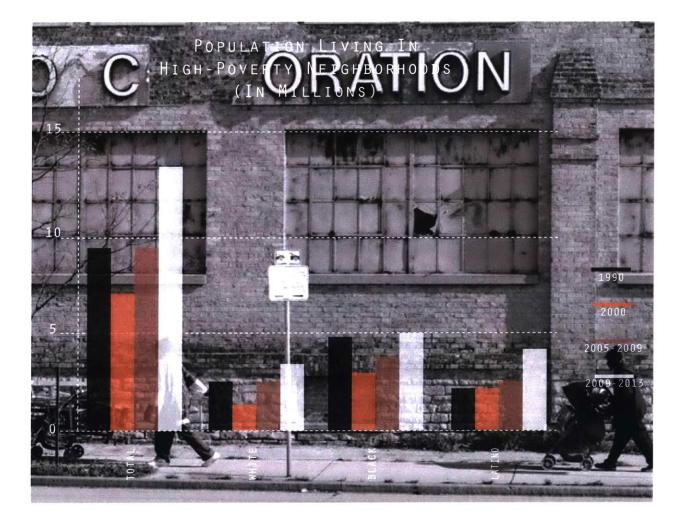


By the end of the 20th Century, the eight Great Lakes states had the highest rate of business failures and the steepest decline in real income in the nation.



As industry vanished, a massive void took its place. Populations shrank, businesses and amenities rapidly declined, and urban decay spread increasing inequality, unemployment, and isolation.

Memories of the industrial era are present within the Rust Belt today, whether it be in the thoughts of people who remember how it once was or the feelings the presence of derelict houses, dormant factories, dilapidated strip malls, and other types of vacant and abandoned properties arouse.



Those hit hardest by the decline were the minority populations; often unable to escape the unimaginable systemic conditions, which, over time became their everyday struggle.

The build up of concentrated poverty, racial and economic segregation, massincarceration, declining populations, failing infrastructure, and high unemployment rates – worked to negatively impact the people and places that made up the communities, often resulting in an inability for the majority of those within these spaces to escape the structures in pursuit of better lifestyles.

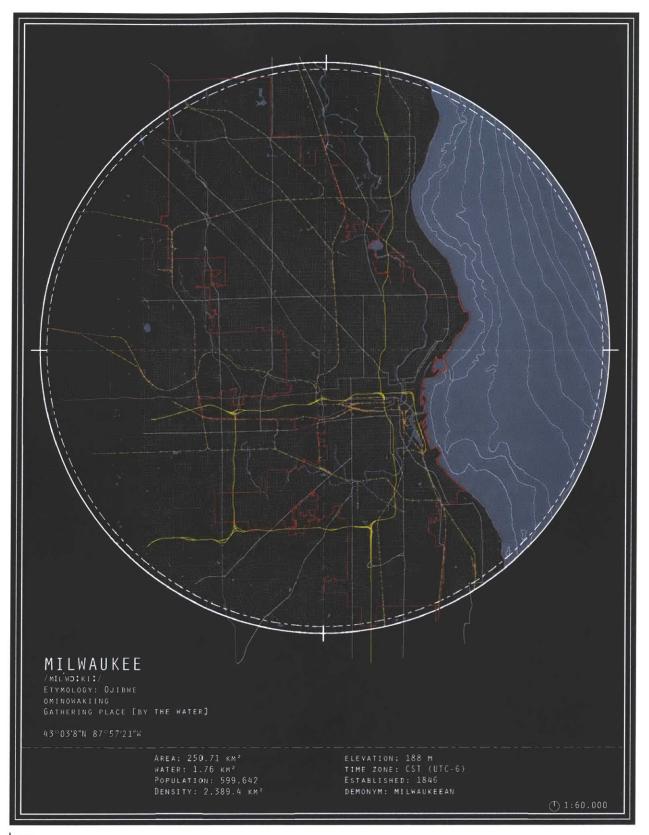


## O3Gathering Place by the Water

Milwaukee, Wisconsin, a once flourishing industrial city founded on the shores of Lake Michigan, has seen a rapid decline in recent times. Often called legacy cities, such postindustrial urban centers that exist within the overlaps of the Great Lakes and Rust Belt regions are common across the American Midwest. Today, boarded up buildings, empty lots, and other signs of blight plague these declining cities.

For nearly a century, the city's economy was built around shipping and manufacturing. Hundreds of thousands of people of migrated to the city in search of employment, but by the late 1960s and early 1970s Milwaukee's industry saw a drastic decline – between 1969 and 2001 the city lost 69% of its manufacturing jobs.<sup>18</sup> The region's success of industrial manufacturing was due to its close proximity to the Great Lakes waterways, canals, roads, and railroads. Within a hundred year period the region saw an influx in population due to the industrial jobs offered.

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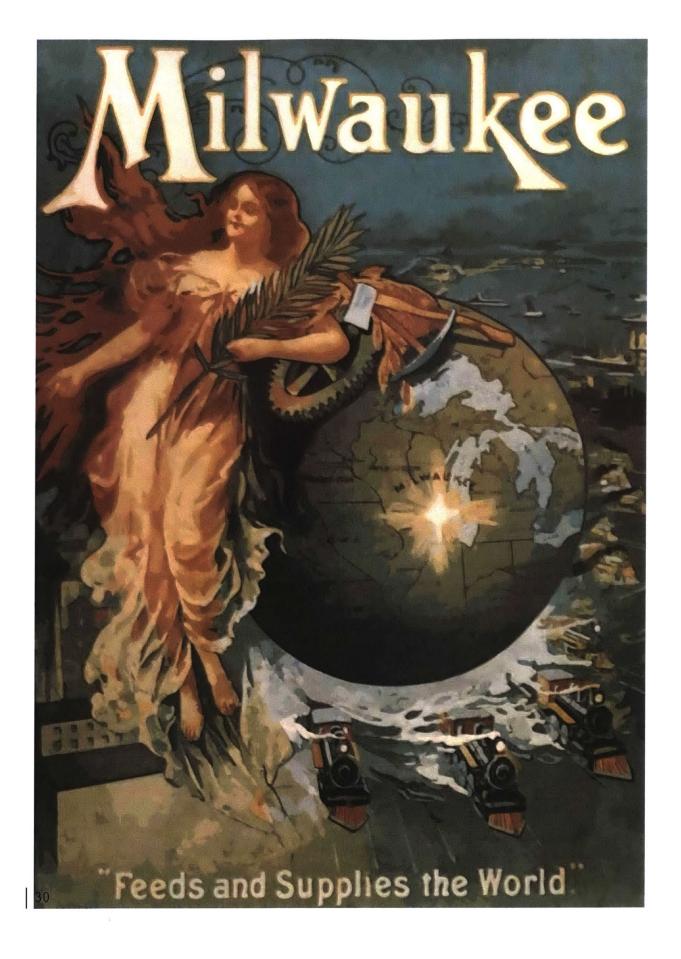
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The Ojibwe word, Ominowakiing, or Milwaukee, means "Gathering place [by the water]." One of the main reasons Milwaukee prospered from its beginning as a commercial center was due to its easy access to Lake Michigan and the inland access provided by its three major river – the Milwaukee, Menomonee, and Kinnickinnic.

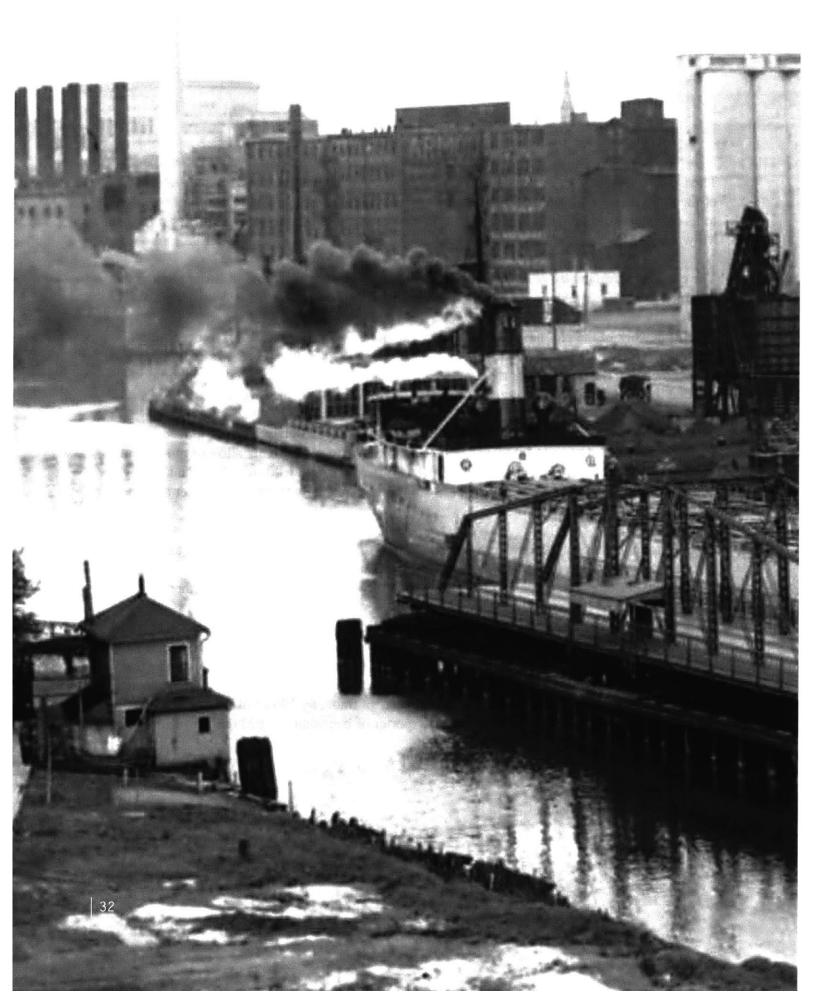
The city grew from a Native American settlement, a fur trade post, to an industrial town at the confluence of three rivers on the shores of Lake Michigan.

The framework of the city has always been based on its water network. Prior to becoming a metropolis, Milwaukee was a Native American settlement where the rivers worked to play a vital role in the early development of the area. The boundaries of the river created neighborhoods, divided the settlement into two sections – north and south, and formed wetlands.

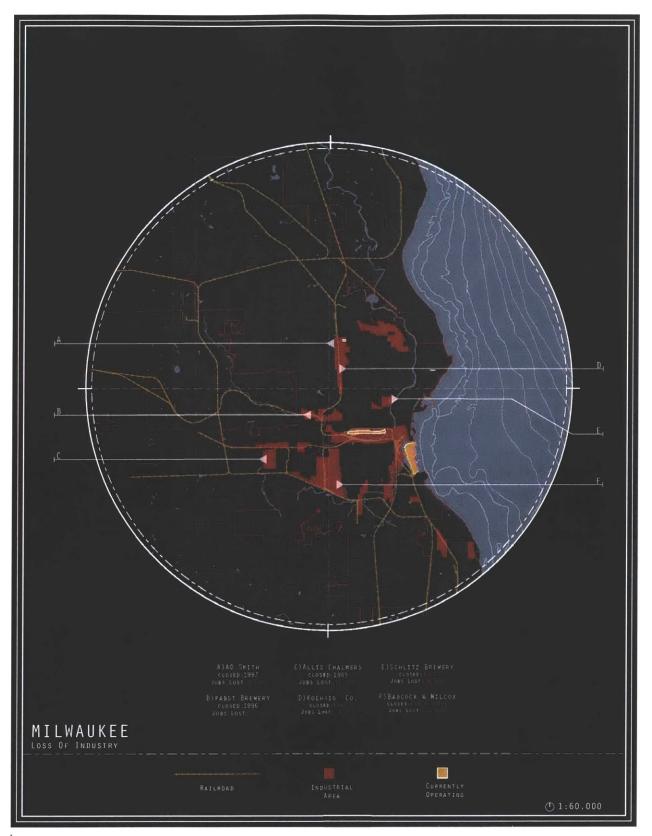
The wetlands were indispensable to Milwaukee's Native population, which comprised of Potawatomi, Sauk, Ottawa, Chippewa, and Menominee tribes. The rivers allowed movement throughout Milwaukee and access to food such as fish, duck, and wild rice. The plants that grew within the marsh, such as reeds and rushes, were used to make mats, bags, and other supplies for the native population.

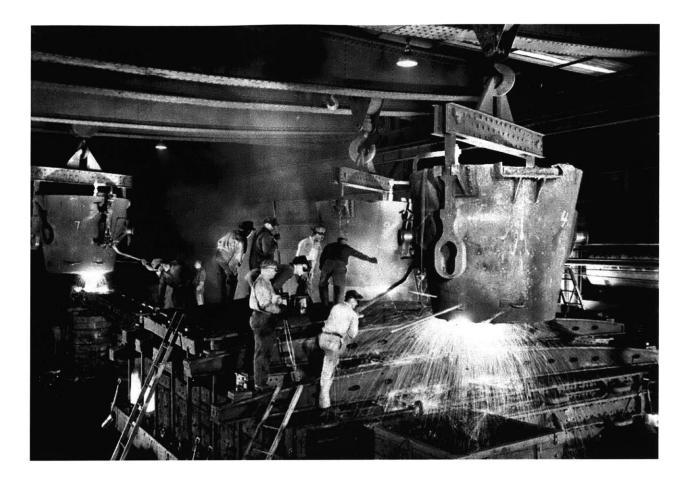
Beginning in the early 1600s, traders, trappers, missionaries, and French explorers used Milwaukee's rivers as transit routes. By the early 1800s European settlers moved into the area, local rivers became commercial and shipping hubs for wheat, lumber, coal, and other products.

As the city's economy continued to rise, population did as well. The city's population climbed from 9,508 in 1846 to 20,061 in 1850 to 45,246 by 1860. In a quarter century Milwaukee had emerged to become one of the top twenty cities in the United States. Just as population grew, economy did too; Milwaukee became a center of trades attracting brewers, carpenters, capitalists, and even piano tuners. The city also became a center of trade, by 1862 Milwaukee became the world's largest supplier of wheat, the largest exporter of beer, and in 1890 the world's largest supplier of tanned leather.





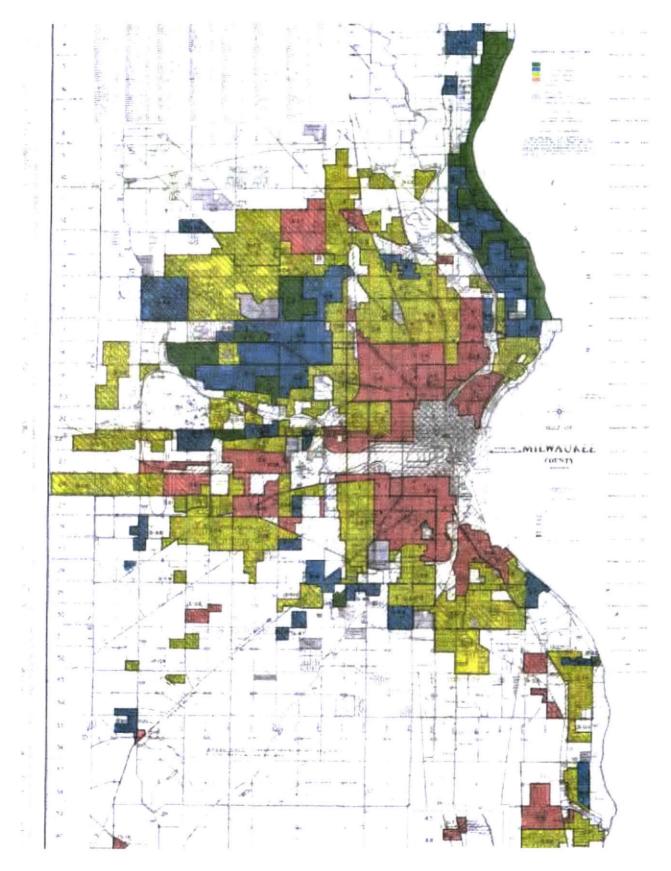


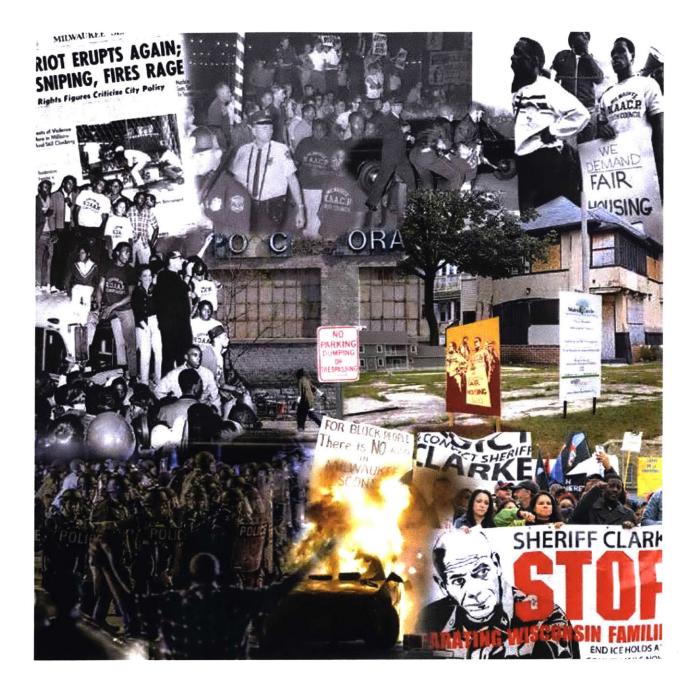


By 1970 manufacturing jobs disappeared and the city suffered significantly. Industrial jobs moved from the city's core to the suburbs and as industry moved people went with it, or tried to - racial covenants and redlining only allowed the city's white residents to relocate with the jobs. The Black and Latino populations were left to weaken.

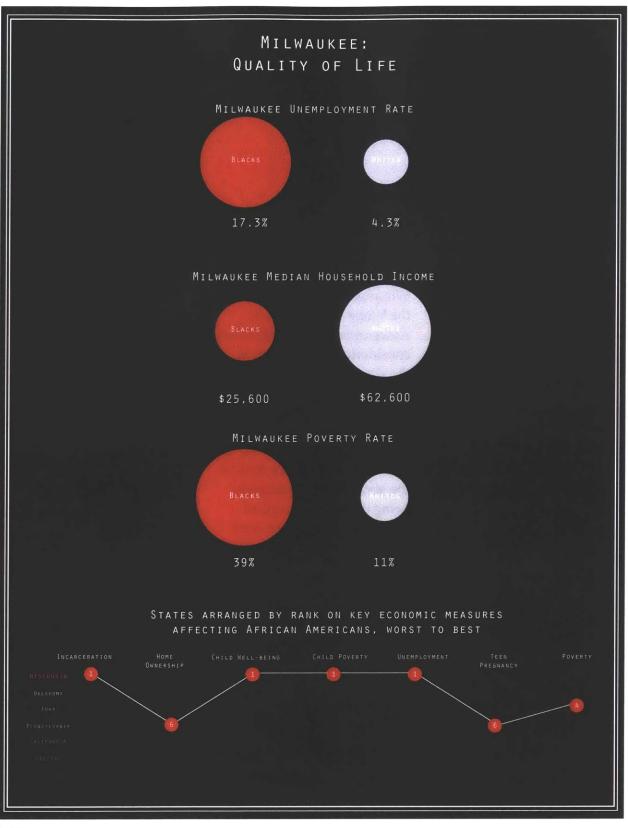
In 1970, Milwaukee's black poverty rate was 22% lower than the U.S. black average, today the city's black poverty rate is 49% higher than the national rate and the city's median family income for blacks was 19% higher than the U.S. median income for black families, today it is 30% lower.

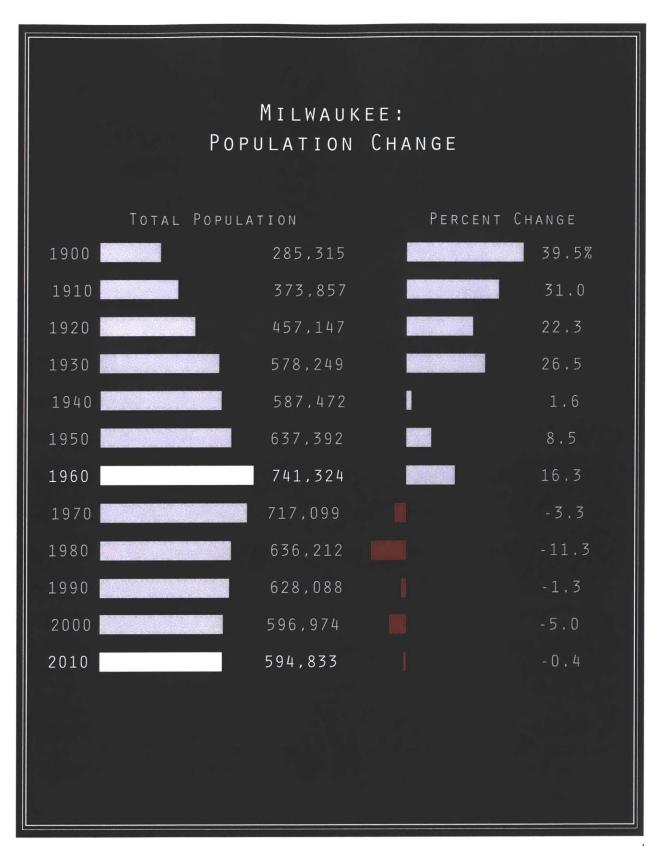
Areas that once were prosperous black middle class communities are now lined with run down shops, dilapidated homes, and vacant lots. Manufacturing once employed around 41% of inner city workers in 1970; by 2000, only 19% held industrial jobs. Inner city residents have not recovered from the deindustrialization, unemployment in the inner city is four times the city's average – with 59% of the working age population either unemployed or not in the labor force, twice the suburban average.





Milwaukee's black population has faced many of the same injustices for more than 50 years. Decades of governmental negligence and inescapable systemic conditions make Milwaukee a challenging place to live if black. Instead of issues bettering for the city's black population, which account for 40% of the city's entire population the quality of life has worsened from the 1960s to today. Recently, the state of Wisconsin was ranked the Worst State for Black Americans by 24/7 Wall Street, considering factors such as the state having the highest rates of black incarceration, child well-being, child poverty, and unemployment as well as Milwaukee, the city within the state that accounts for 80% of the states black population, being the most segregated city in the nation - the state become oppressive if black.



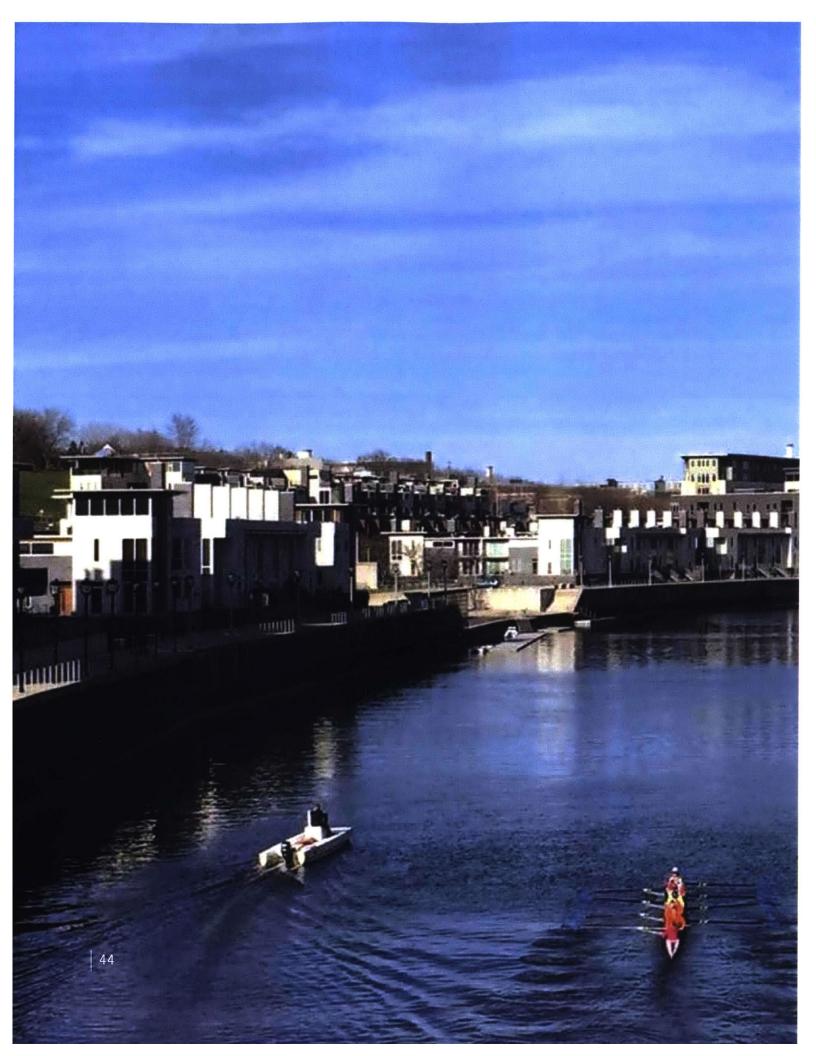


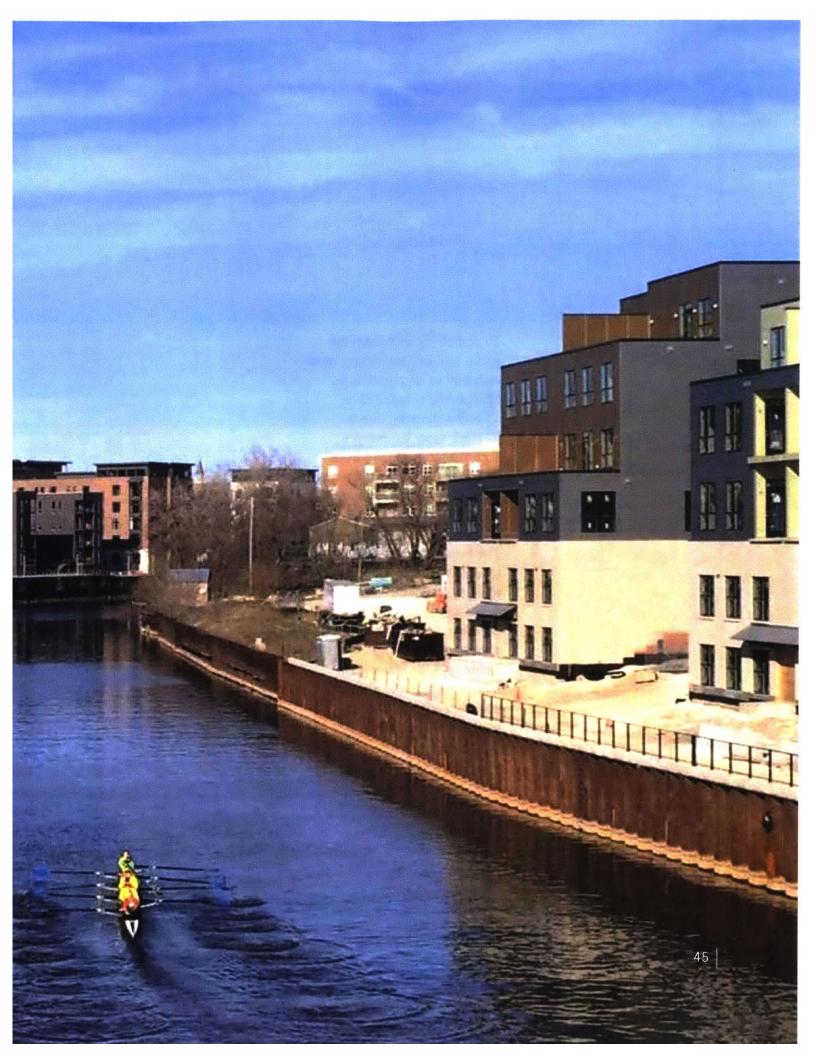


## O4 Milwaukee's Rivers As high-end amenities cont clong the river, the

Once a center of industry and commerce, the Milwaukee River is now the center of the city's development. Developers and investors have been drawn to the shores of the river and its public improvements such as the Riverwalk, a seemingly public walkway that spans a 2 mile stretch along the river, pedestrian bridges, streets, and green space.

Condos and businesses have taken the place of industrial factories along the city's river and kayaks and party boats have taken the place of freighters that once shipped goods out of the city. The promenade along the river is lined with art and high-end restaurants and retail. As high-end amenities continue to crowd and develop along the river, the river's shores no longer become private and accessible to the majority of the city. Instead, the rivers become exclusive zones set aside for the wealthy in an effort to beautify the city.





To detach the city from the social realities impacting more than half of its population, Milwaukee is branded as a Freshwater city, due to its freshwater landscapes, long stretches of lake front access, Riverwalk, and many amenities located along both waterscapes.

The branding, which seeks to attract tourists and new residents, is centered on developing the spaces along the river. Making the public private, waterscapes exclusive zones, and the waterways inaccessible to the already heavily policed minority population.



## Hundreds of apartments coming to N. Water St.

Around 700 to 1,000 apartments are under construction or planned for N. Water St., between E. Pleasant St. and N. Humboldt Ave.



1. River Pointe, 1887 N. Water St.

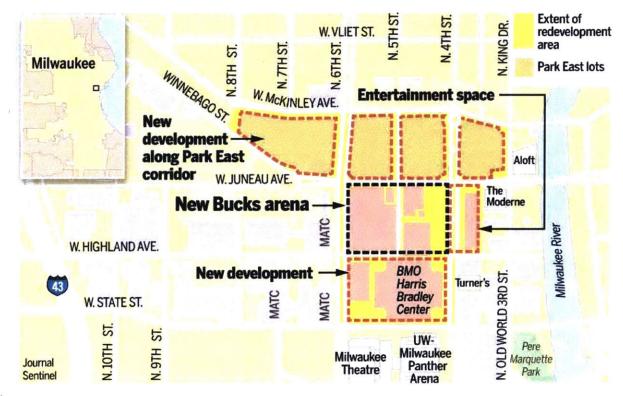
2. River House, 5.7 acres between the Milwaukee River and N. Water St., upriver from N. Holton St.

**3. Former Habhegger site**. 2.7 acres at N. Water and E. Brady streets, downriver from N. Holton St.

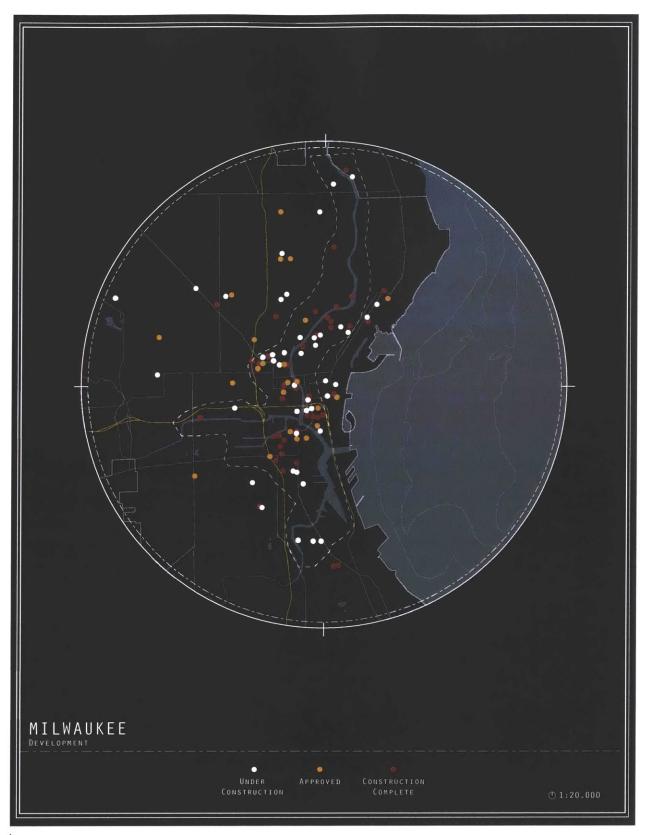
4. The Rhythm, 1620 N. Water St.

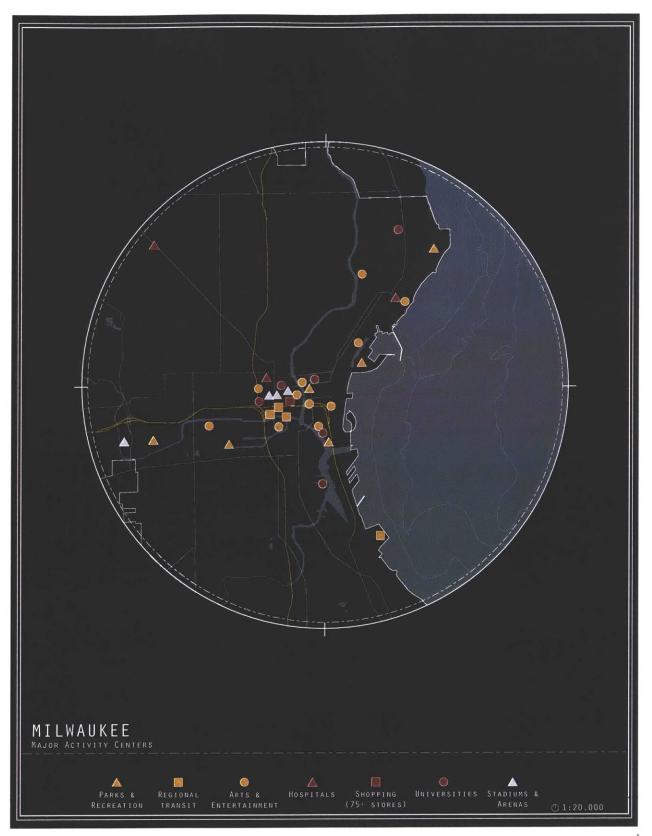
 The North End's third phase, west of N. Water St. and north of E. Pleasant St.

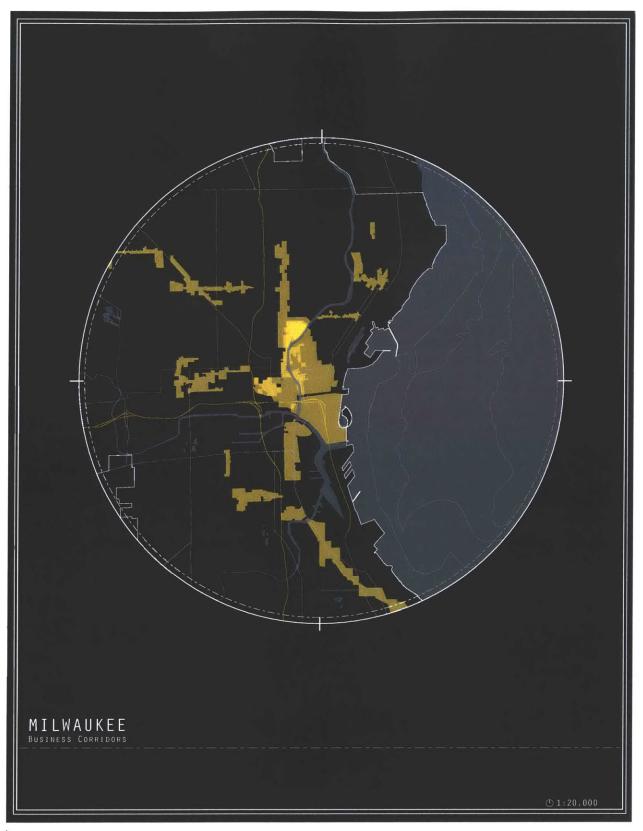




The city's river network has become the center of new development within the city. The river's banks, which were once easily accessible to the public, are now lined with condos and other highend properties. The city's major activity networks and business districts are using the development of the riverbanks to their benefit.

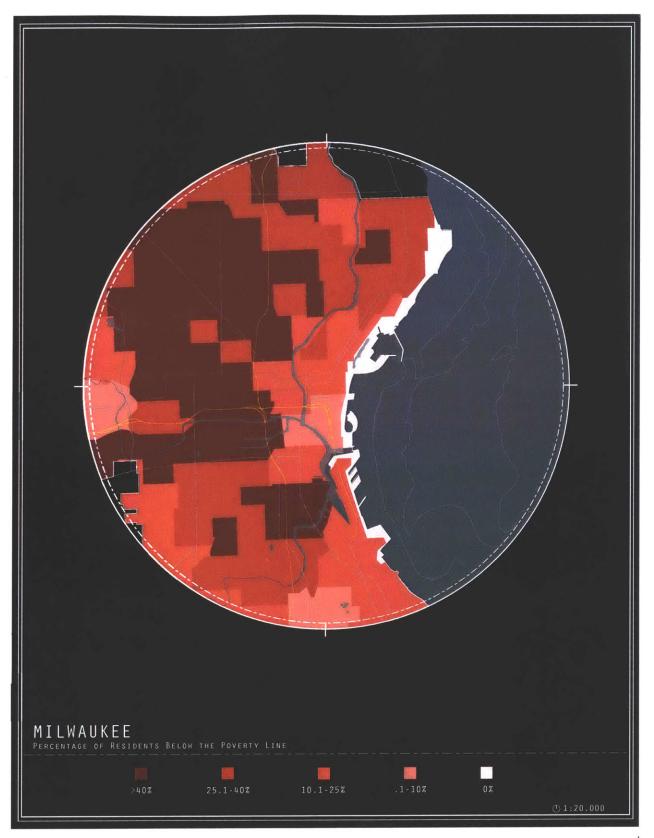


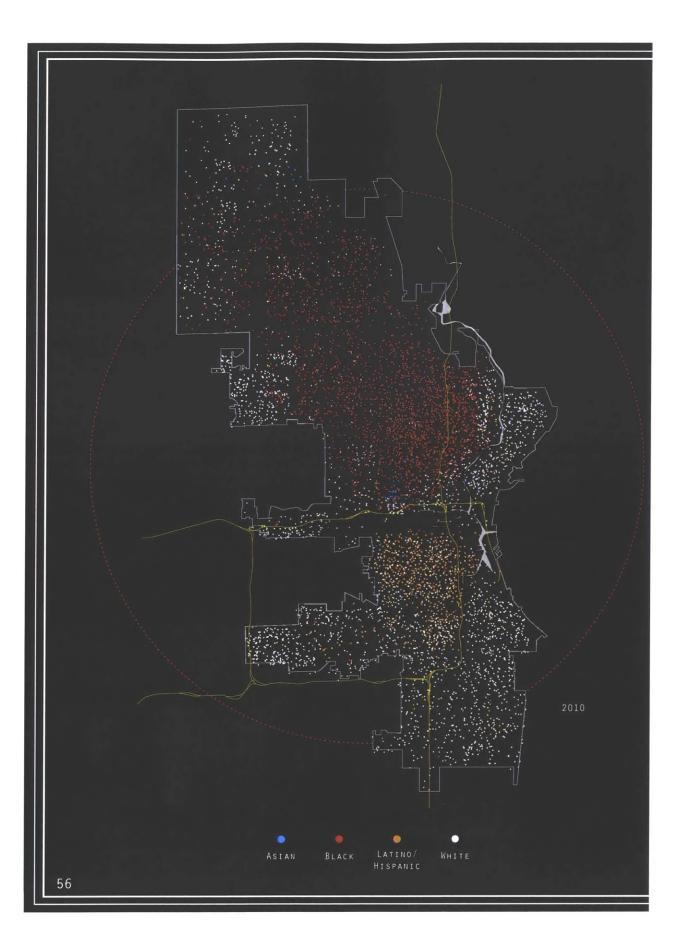


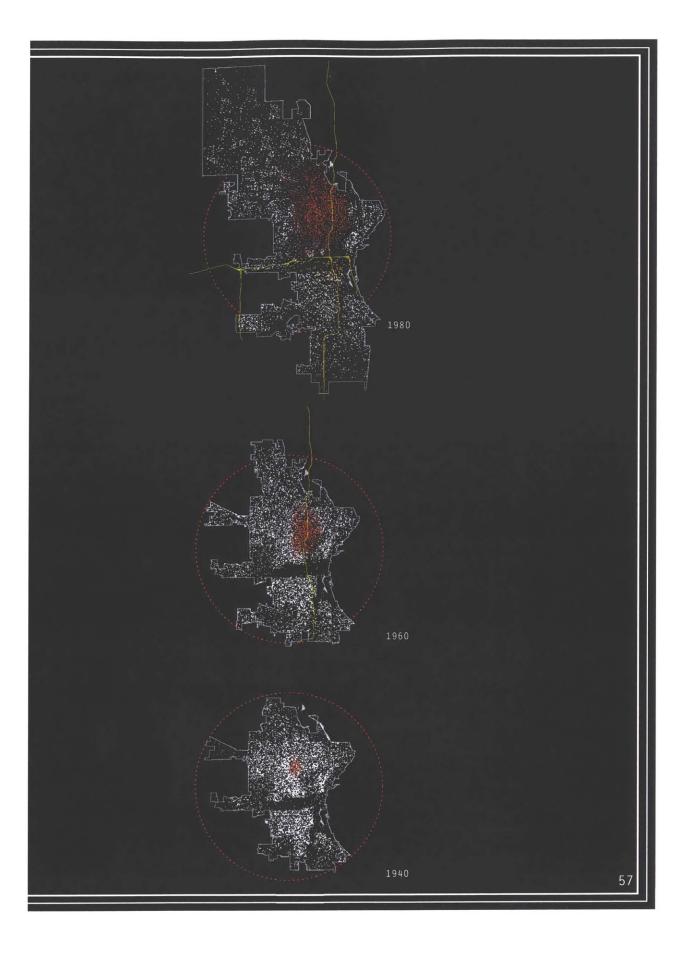


Areas outside of the river district get the least attention, in terms of development and alleviating blight. Residents of these areas face the most social and physical injustices within the city.



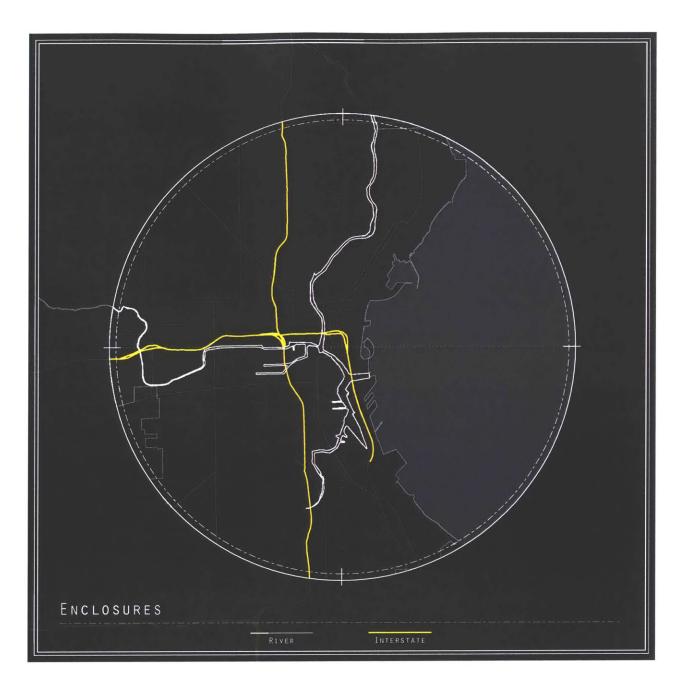






Viewing these maps a pattern of enclosure and segregation becomes visible, where the water network and interstate together create two separate cities, one desirable and the other the void.

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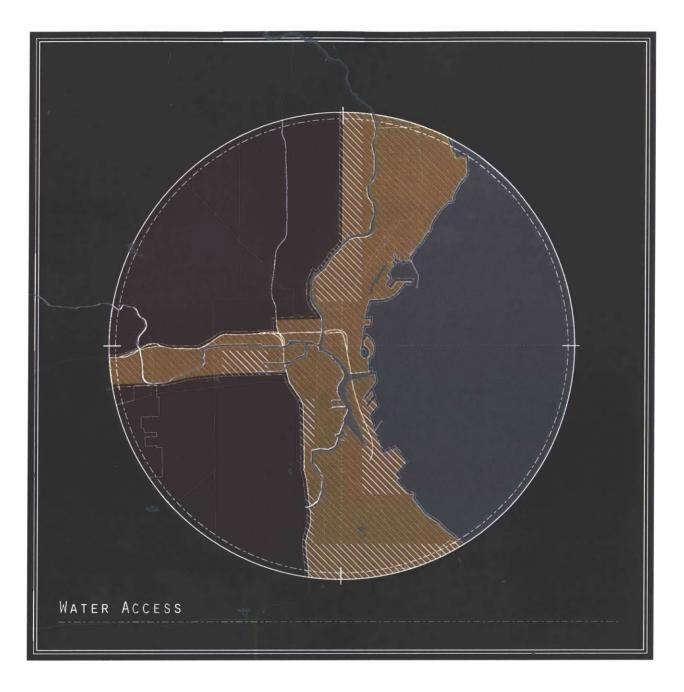




This become apparent in the way the city is socially perceived as well, these two visitor maps, one distributed by the city's university and the other from the city's official travel guide boldly depict which spaces are socially worthy and mute out the spaces deemed socially inferior.







Milwaukee's river networks did not always work to enclose, the banks of the rivers, primarily the Milwaukee River, were once recreational hubs and the center of yearlong attraction and recreation.

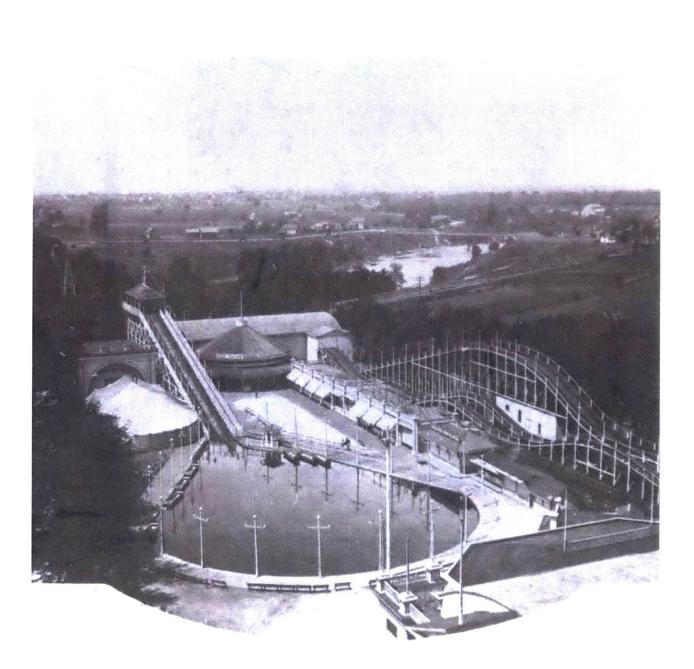
Residents who wanted to escape the hustle of everyday life could escape to the river.

During the late 1800s to early 1900s the river was lined with attractions. The river boasted swimming schools, boating clubs, speakeasies, beaches, a bathhouse, summer homes, and amusement parks. Thousands of Milwaukeeans gathered at the river every Sunday, some to ride the Ferris wheel, ice skate, or to simply paddle from one resort to another.

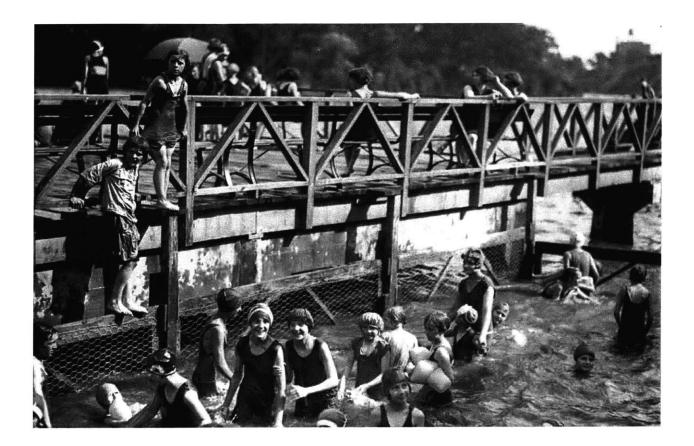




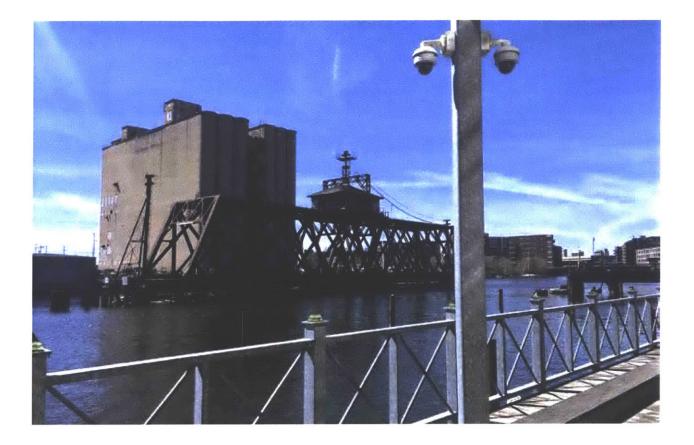








Today, the banks of the river project a different story, one of privilege and inaccessibility. Where the public becomes private and the user becomes surveilled.







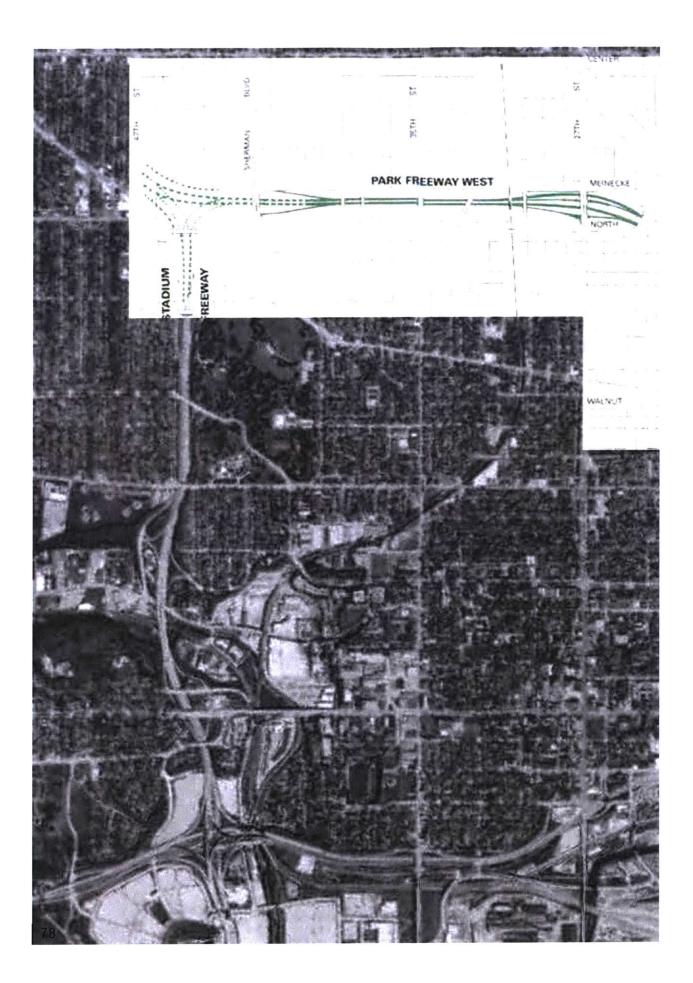


The city's interstate adds a second layer of enclosing residents. The plan on pages 82-83 show the proposed Park Freeway West. The freeway was planned to cut through a predominately black middle class neighborhood and end at the city's lake front. The Expressway Commission, the state institution responsible for the planning and construction of the freeway said, "The project will, without a doubt, become an aesthetic highlight in the area."

To the Expressway Commission it was more important to move cars than to preserve the lives within the neighborhood. The impact of the demolition of homes and businesses on the social fabric of the surrounding neighborhoods had been not been taken into consideration.

The freeway was not built, but it left a social and physical scar on the neighborhoods surrounding the proposed location. The most noticeable damage was the destruction of lived space in order to make way for a space reserved solely for the automobile, completely altering the landscape and the way people interact with it.

The 1966 removal of almost 1,600 households had undoubtedly disrupted social patterns and ties that had been essential to the way resident experienced and shaped their neighborhoods. To this day, many areas in the proposed location remain undeveloped, prolonging the disruption of social patterns and ties that are maintained by the residents and altering their lived experience.









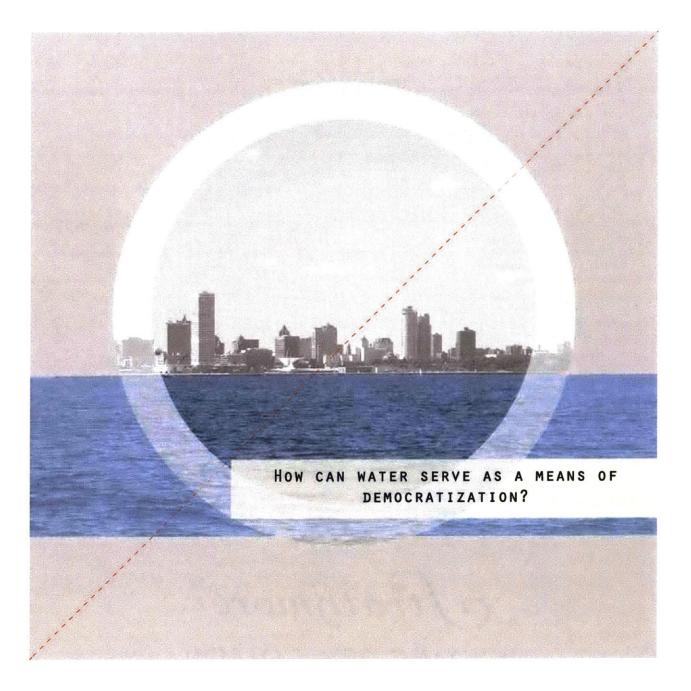








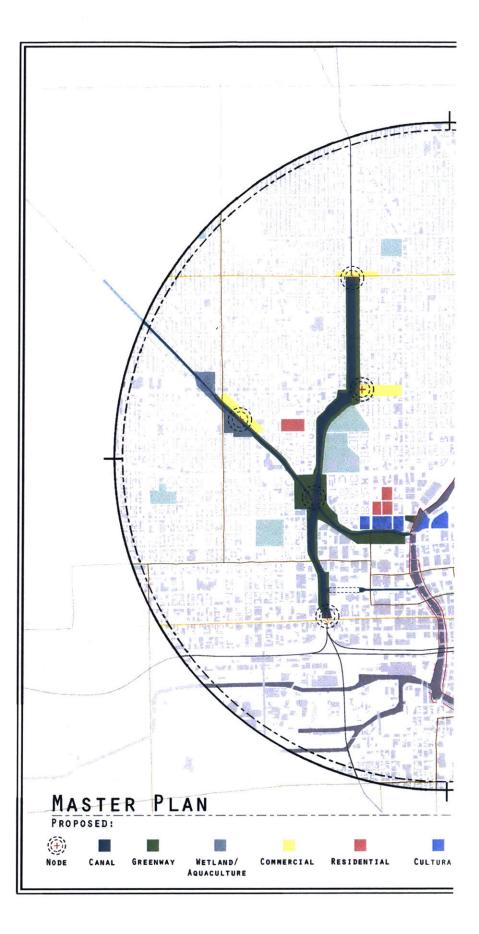


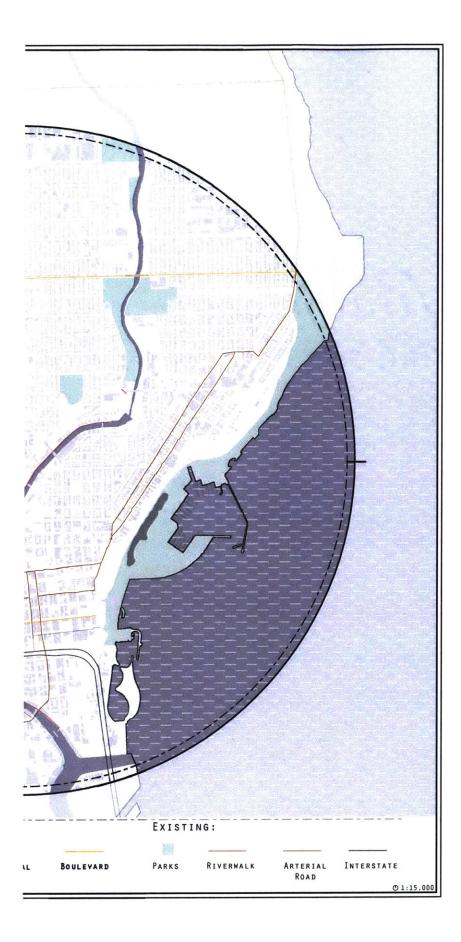




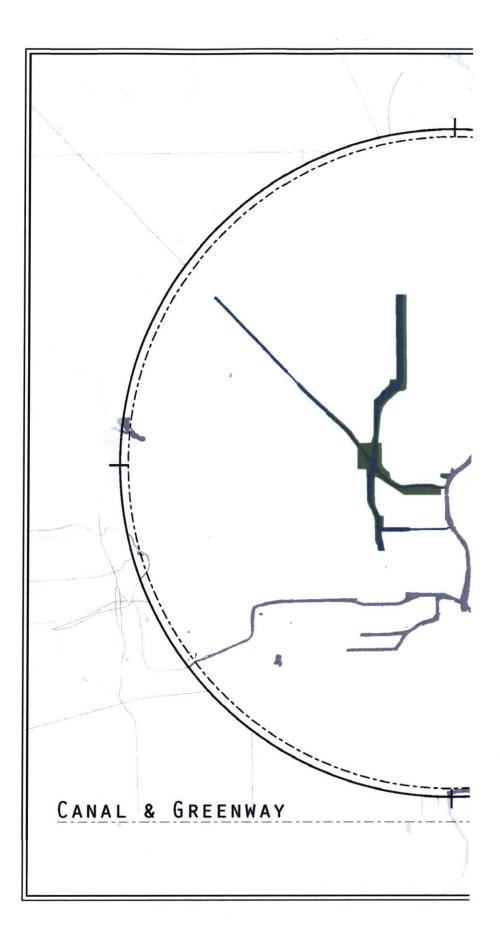
If the City of Milwaukee continues to operate in the way it has in recent decades, with its many social rifts the population will continue to decline. With the loss of people and the continuing loss of industry cars will no longer be a commodity. The city's highways and interstates will serve as leftover spaces; similar to the void the Park Freeway West created.

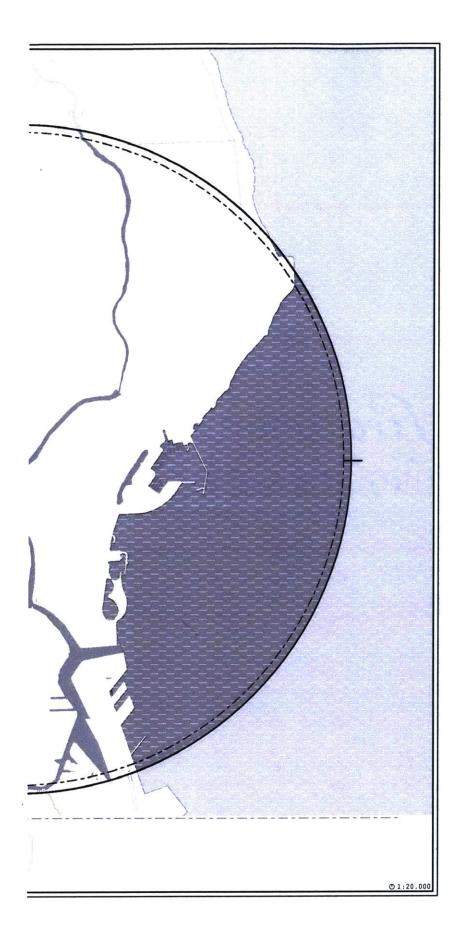
Before this happens and a greater split is enforced within the city, this project reimagines reclaiming spaces that have worked to fracture the city physically and socially. Visualizing new terrains of navigating and rediscovering the city, this design proposes to submerge fallows and voids by creating a storm water canal network in their place. In doing so, this work hopes to link left-over spaces and marginalized populations via water promoting movement, interclass connectivity, and accessibility within the city's most fractured areas.

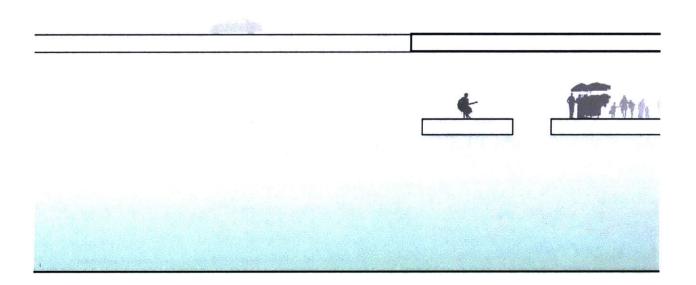


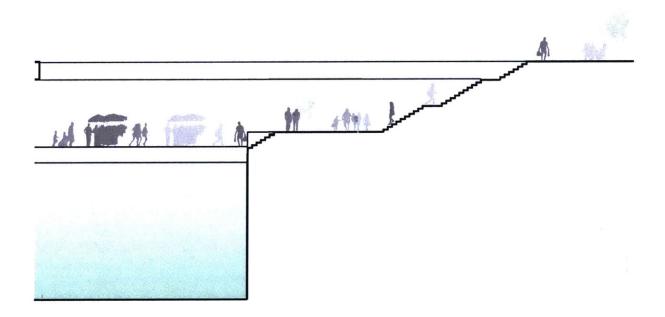


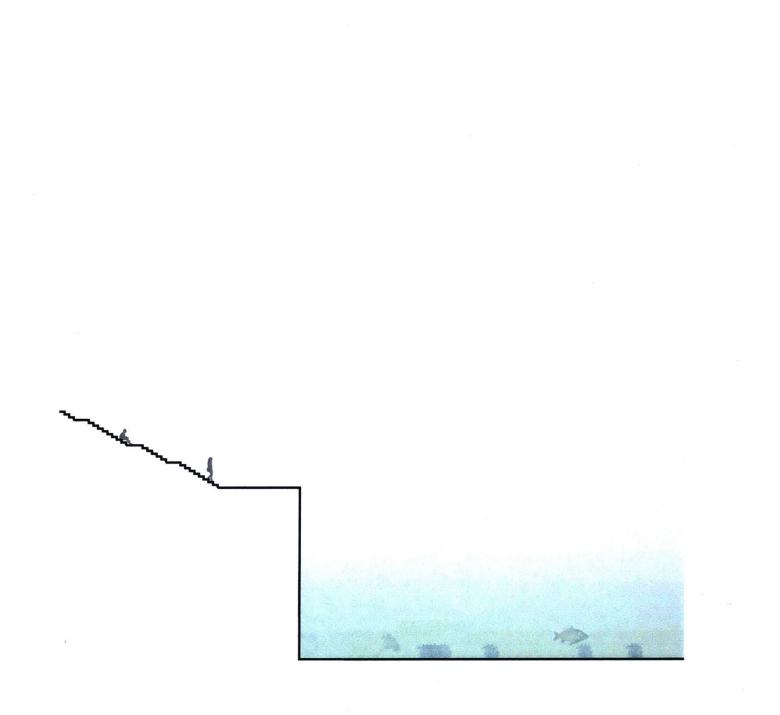
The project begins with setting up the canal and greenway, which provide parks and open spaces alongside homes which now exist along the edge of the interstate. By setting up a greenway along the proposed canal, the project ensures that public spaces will exist for the users, unlike how the city's Riverwalk operates where the public becomes privatized through business and housing claiming the space alongside the waterway. The new greenway acts as a space for the people. It becomes manipulatable and fluid. A space that allows contact and movement in the way the current river network does not allow. In order to dismantle systems that have maintained the rifts and inequalities within Milwaukee, it becomes necessary to establish alternative forms of contact in socially marginalized spaces, working to promote interclass connectivity and allow opportunities to break social and physical divides.

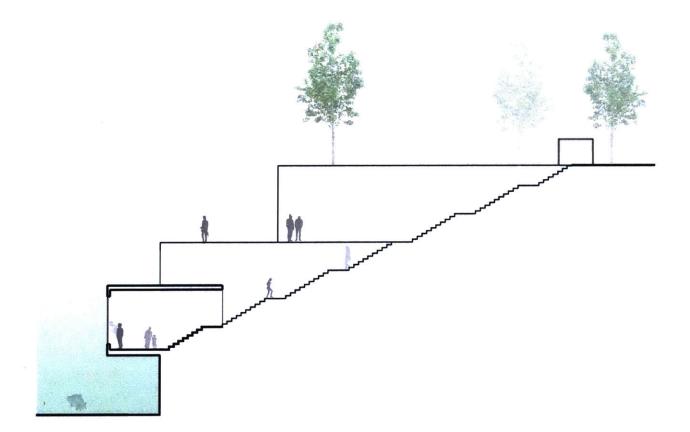


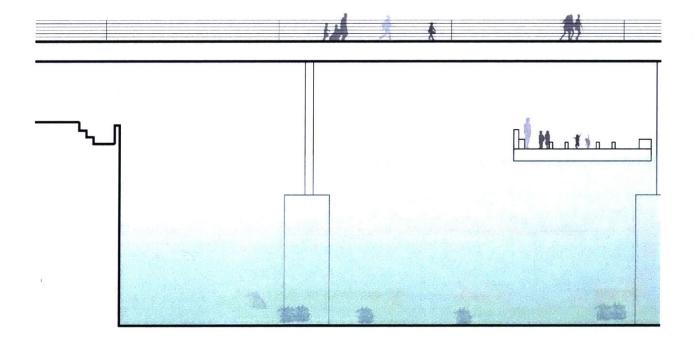


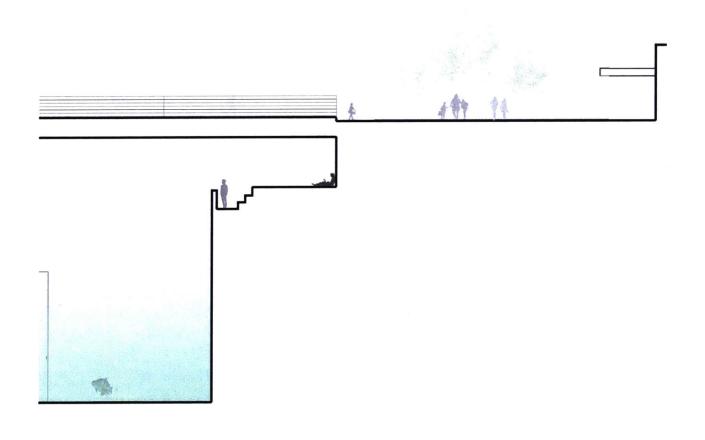


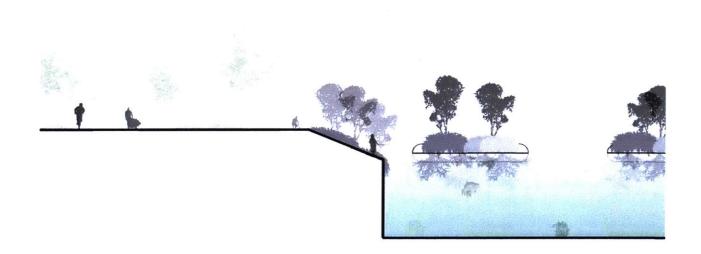


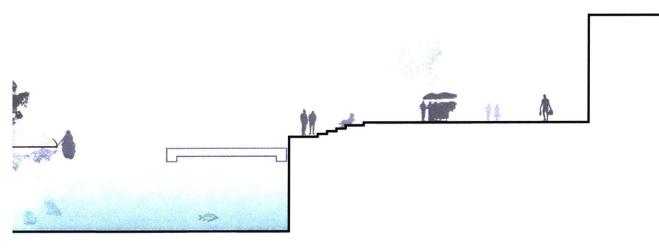


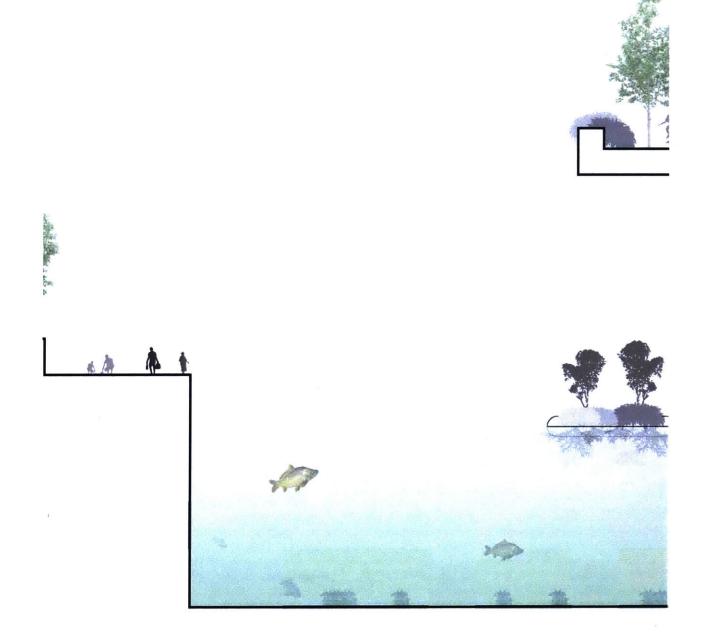


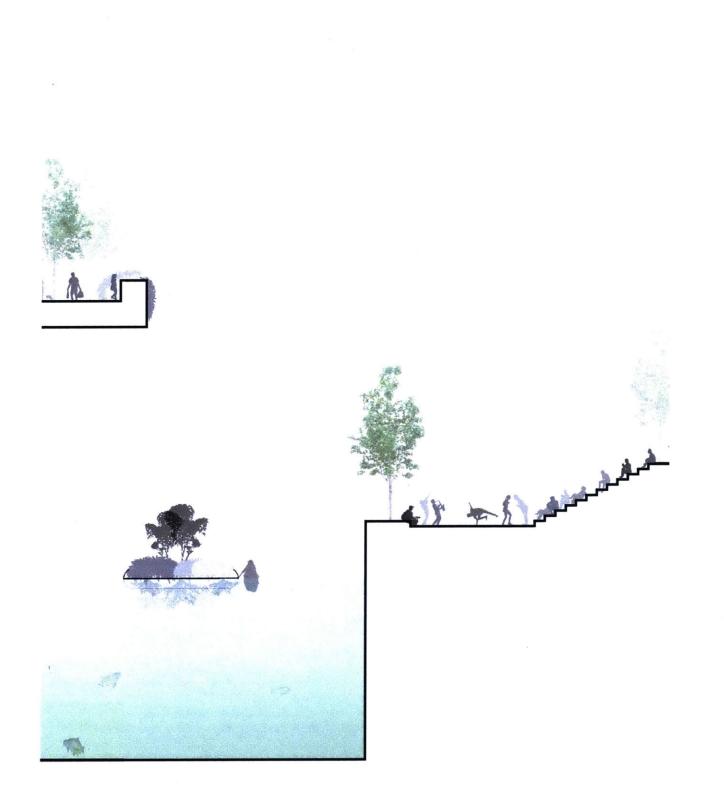


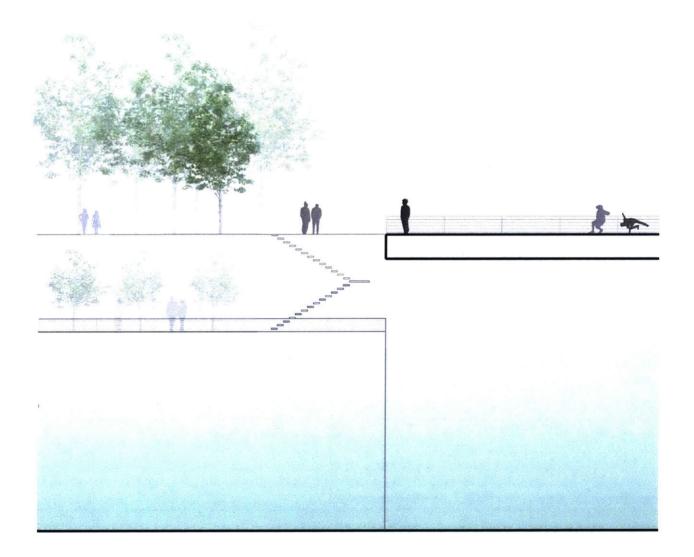


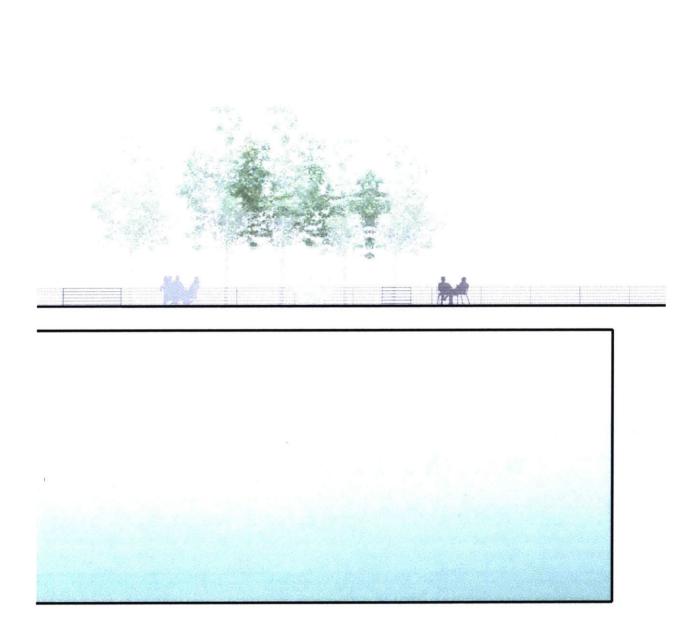




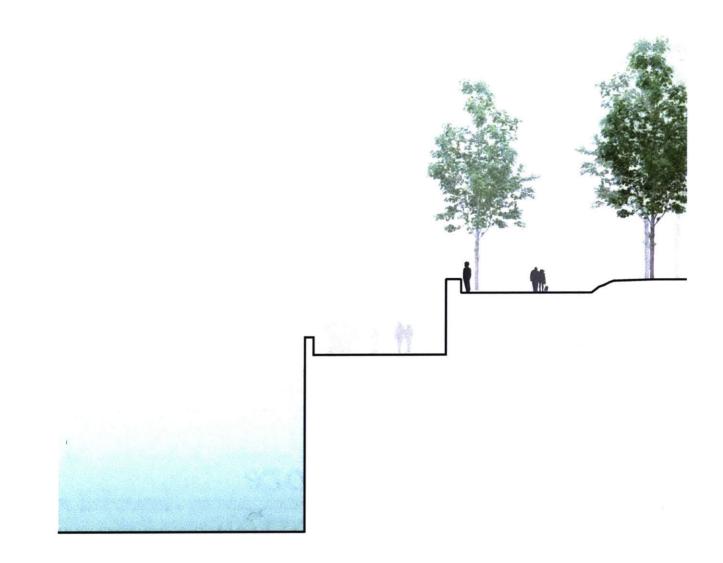


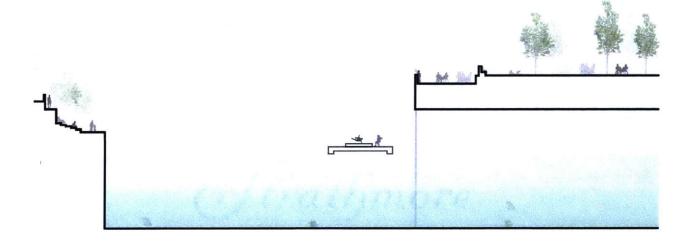


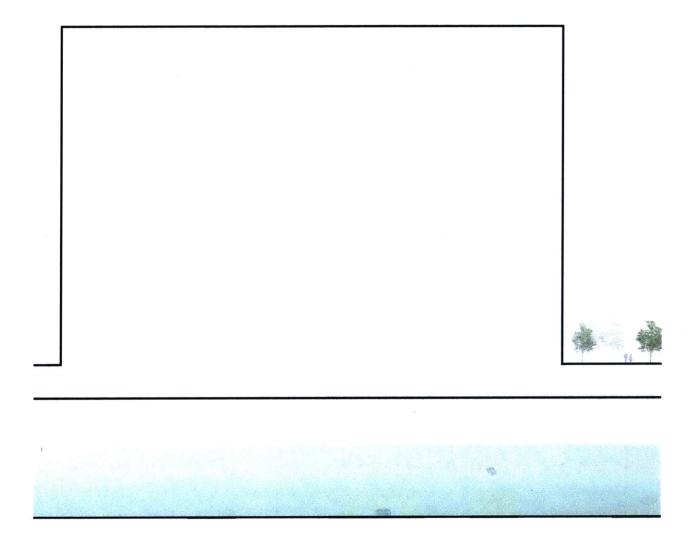


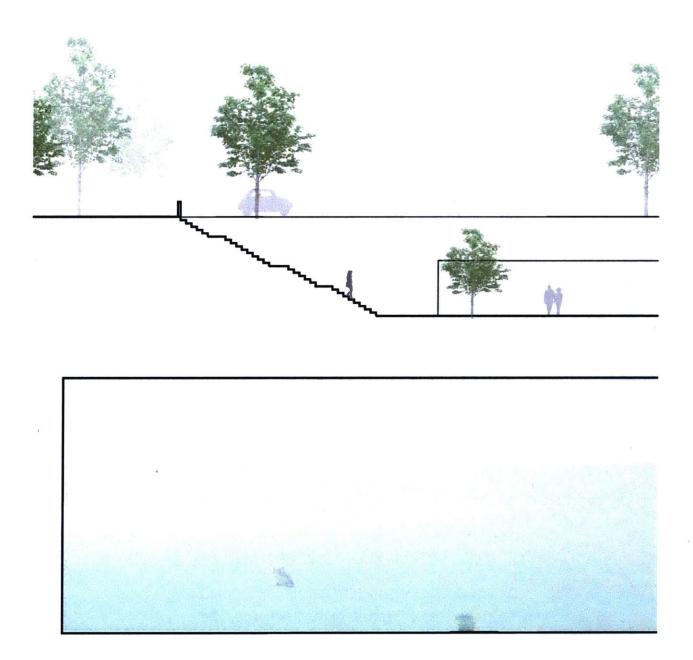


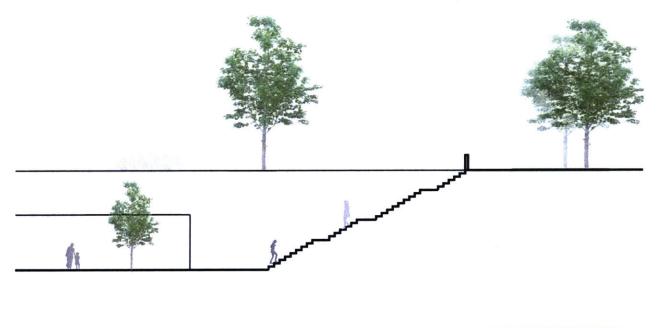


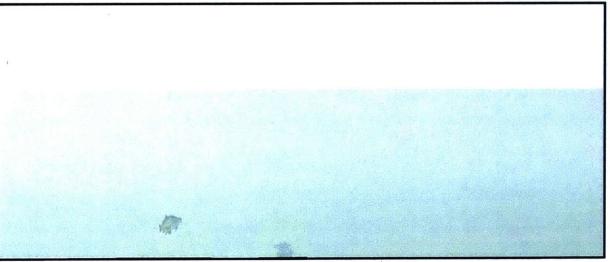


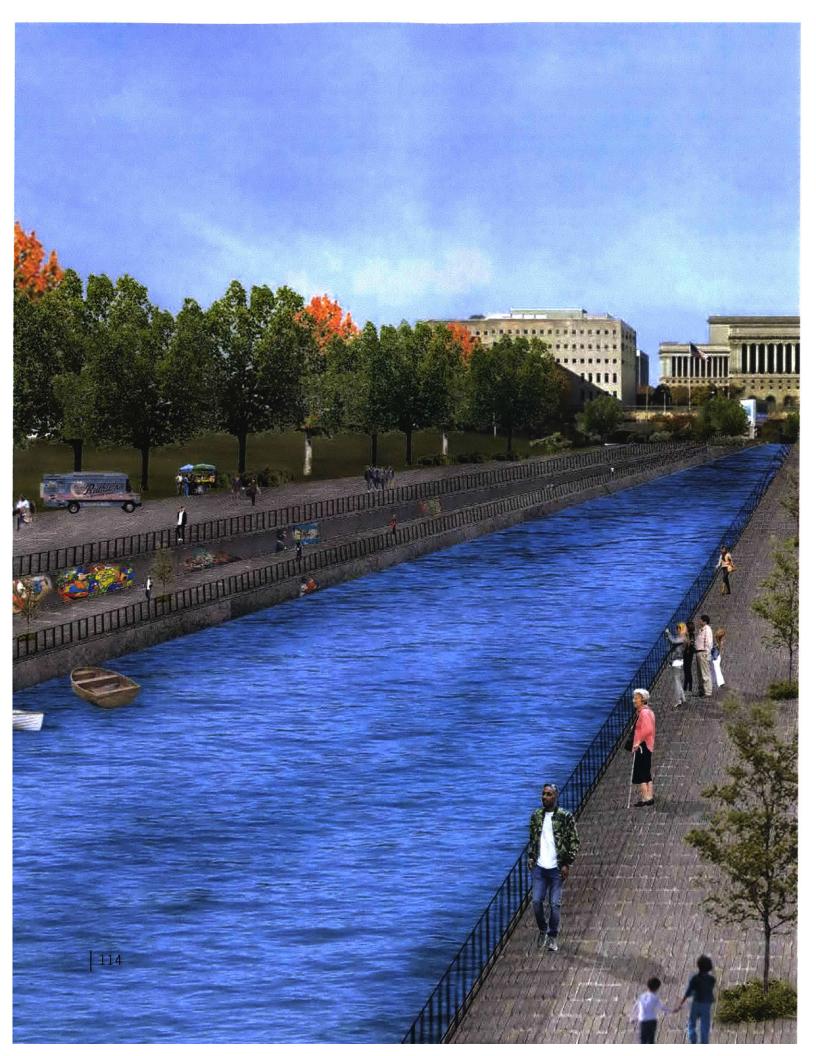




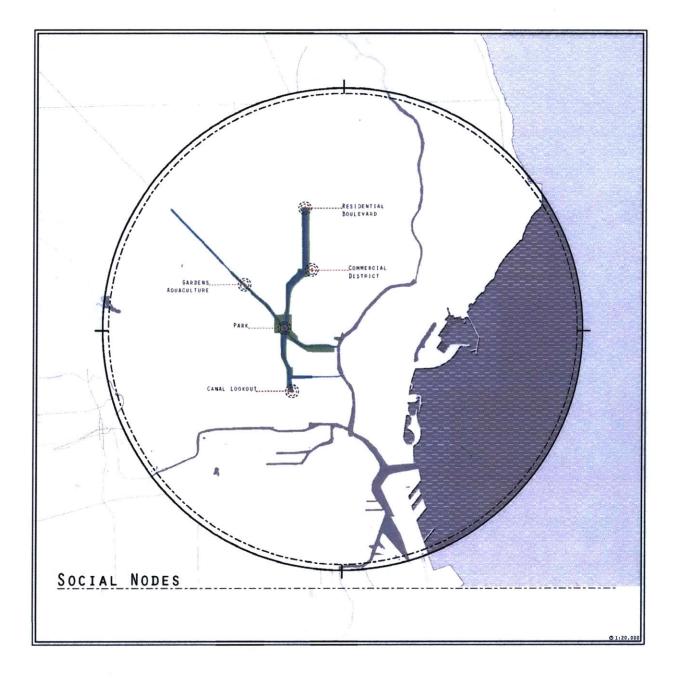








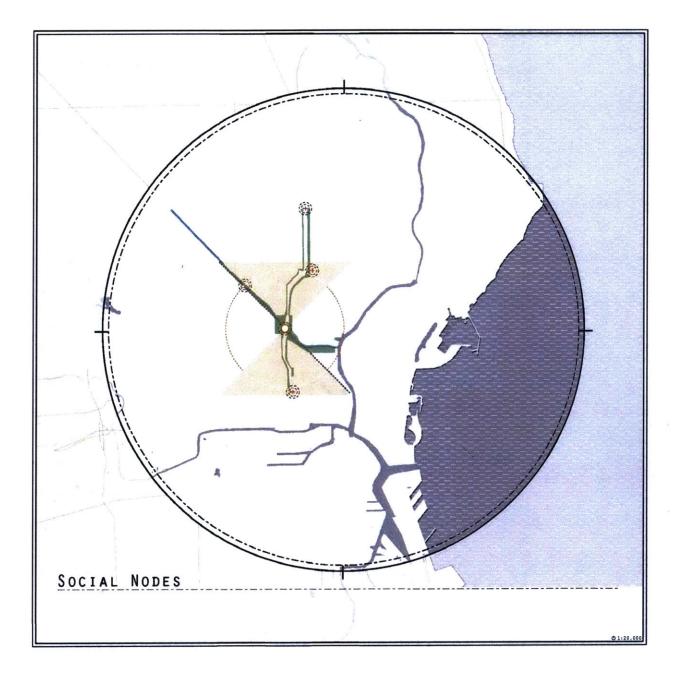


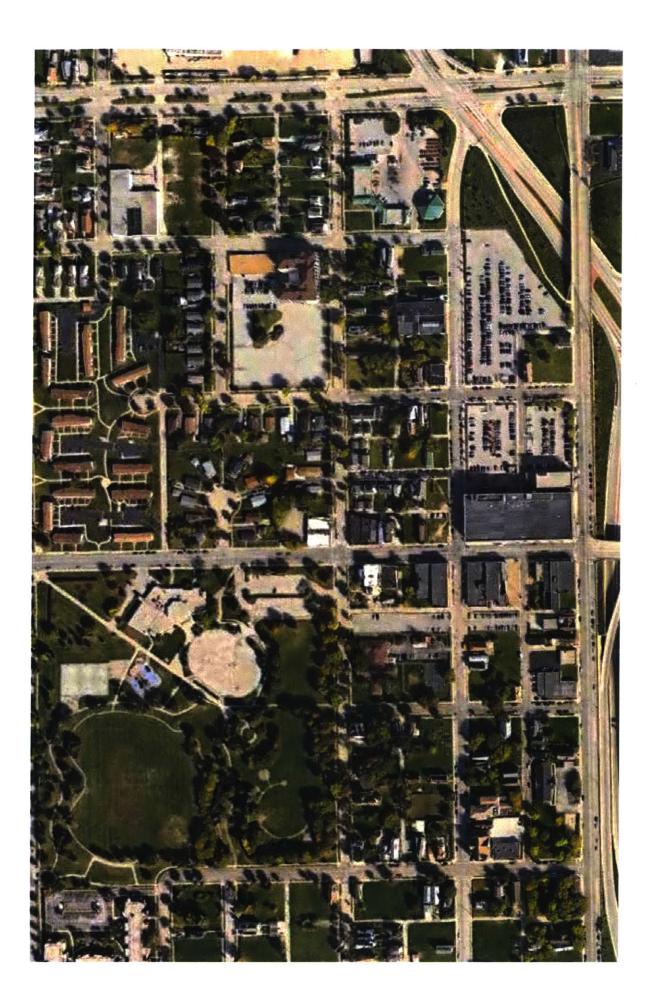


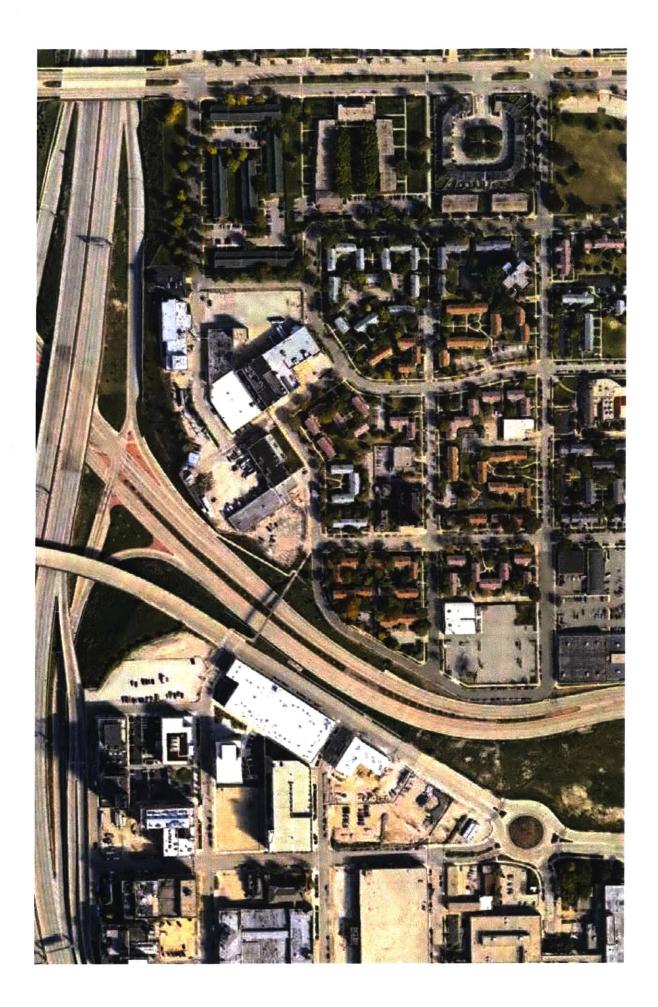
Along the greenway are social nodes, which encourage movement along the corridor and create development in spaces where voids currently exist.

The nodes build off of existing neighborhood assets and work to generate the movement of individuals within the city. The park becomes the min generator due to its central location, making it easily accessible to residents of multiple spaces. The park features an urban farming area, athletic courts, skate park, ecological center, playground, market plaza, public seating, bandshell, beach, and other amenities that work to line the banks of the new canal.

Just as the park serves as a generator at the city scale, it serves as a generator connecting two neighborhoods that were divided with the insertion of the interstate into the community.







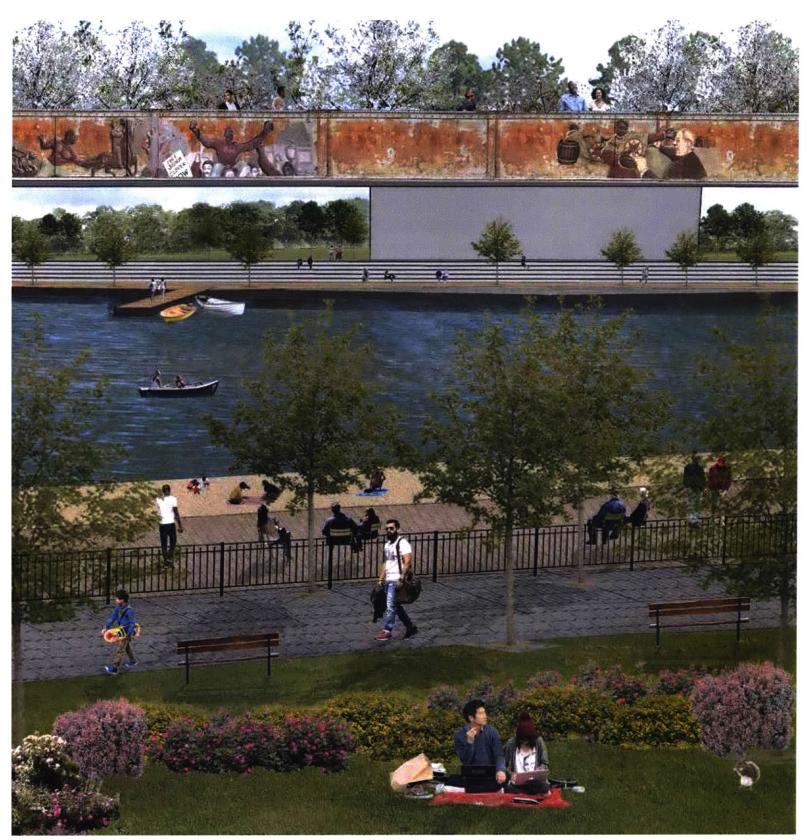


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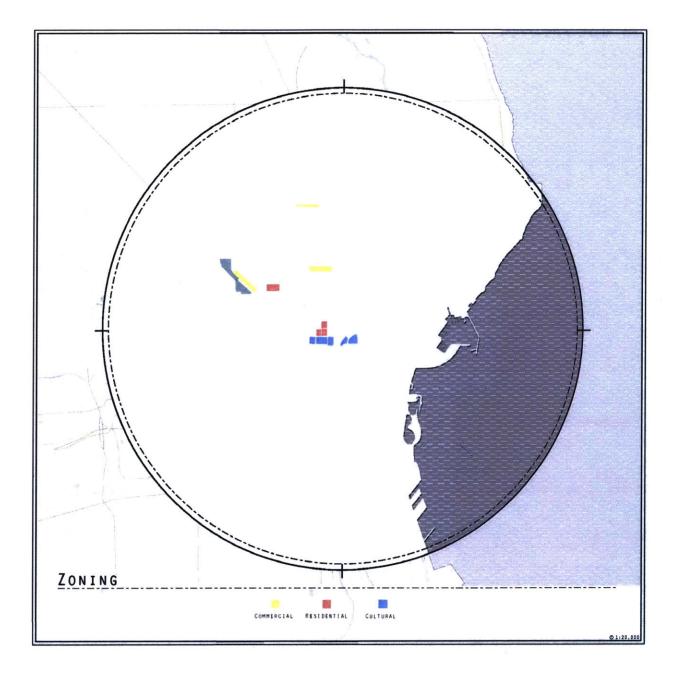


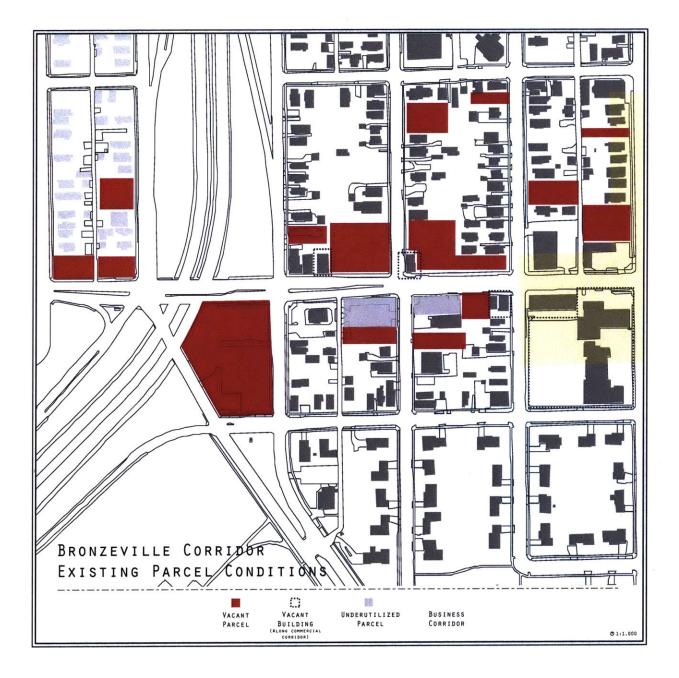
Another node focuses on aquaculture as a means of treating the decades of industrial pollution within the city. Forming this space also brings new skills within the neighborhood and city. This node builds off of an existing community garden, exploring how the existing amenities within the city may be further developed and improved, instead of the canal intruding on the existing livelihood and operation of these communities.

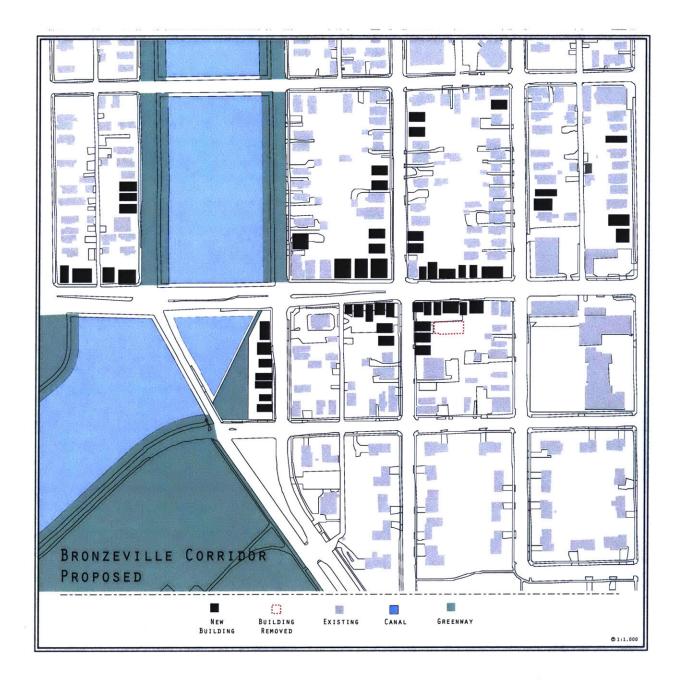




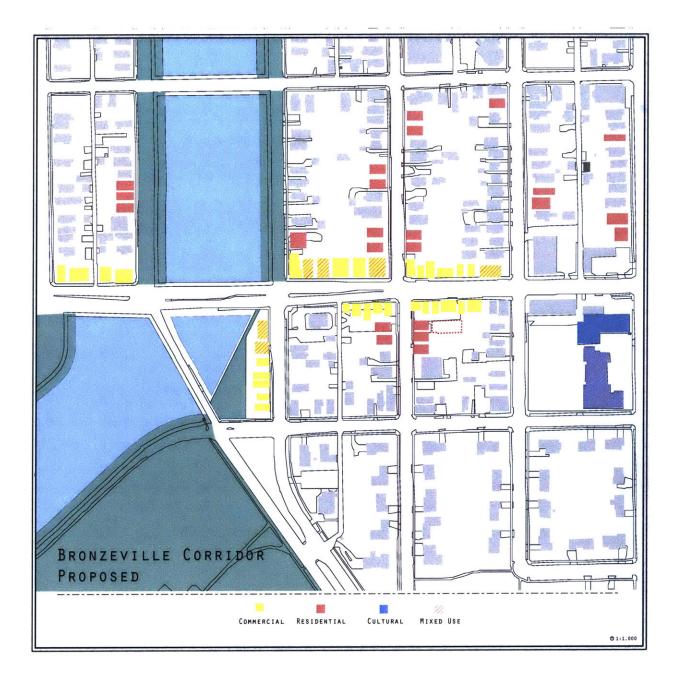
The plan also seeks to propose new zoning typologies within the city, reclaiming vacant and underutilized parcels and abandoned properties, making them spaces that work to socially and economically benefit the communities living within areas. The proposed plan for the Bronzeville corridor reclaims a historic site within the city that is currently lined with vacant lots and explores how it might connect to an existing business corridor. The connection will ultimately set up a flow between the canal and the businesses and homes along the corridor.





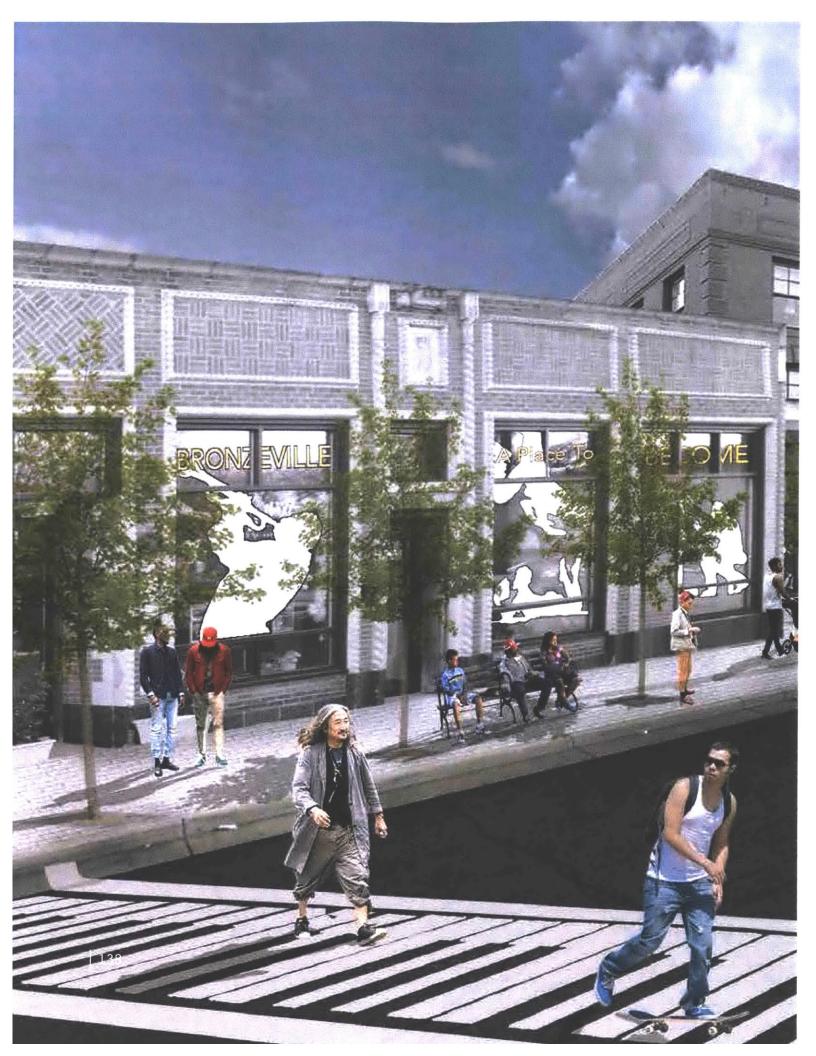


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Imagining what these spaces have the potential of becoming, this project imagines the future of these spaces where people have the ability to move freely along the water and turn it into a hub for recreation and commerce productive to the city.





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	Table of Figures			
Page	Source			
05	Milan Outlaw			
)6	Milan Outlaw			
10	Original image found at http://worldshipping.com/wp-content/uploads/2016/03/ website-wsi-icon-4.jpg			
2-13	Milan Outlaw			
5	Archive Photos/Getty Image			
16	Original image found at http://www.publicseminar.org/wp-content/up loads/2016/11/4096704262_a71039a042_o.jpg			
8-19	Milan Outlaw			
20	Milan Outlaw			
22	Milan Outlaw			
24	Milan Outlaw			
26	Visit Milwaukee			
28	Milan Outlaw			
29	Milan Outlaw			
30	Original image found at http://www.mpl.org/blog/now/the-mystery-of-milwaukee- feeds-and-supplies-the-world			
32-33				
34	Milan Outlaw			
35	Original image found at http://collections.lib.uwm.edu/cdm/ref/collection/agdm/ id/3028			
6	Original image found at http://www.pbs.org/wgbh/frontline/article/photos-milwau kees-industrial-past/			
7	Milan Outlaw			
0	Milan Outlaw			
1	Milan Outlaw			
2	Original image found at http://travel.usnews.com/Milwaukee_WI/Pictures/Milwaukee_			
-	Riverwalk_4261/			
4-45	Milan Outlaw			
7	Milwaukee Journal Sentinel			
8	Milwaukee Journal Sentinel			
0	Milan Outlaw			
1	Milan Outlaw			
2	Milan Outlaw			
4	Milan Outlaw			
5	Milan Outlaw			
6-57	Milan Outlaw			
9	Milan Outlaw			
- 1				

	1			
	Table of Figures Continued			
Page –	Source			
50	Milan Outlaw			
52	Visit Milwaukee			
53	University of Wisconsin Milwaukee			
54	Milan Outlaw			
6	Milwaukee County Historical Society			
57	Original image found at http://epiccolor.com/sumner-matteson-collection/			
58	Milwaukee Journal Sentinel			
59	Milwaukee County Historical Society			
70	Milwaukee County Historical Society			
71	Milwaukee Journal Sentinel			
73	Milan Outlaw			
74	Milan Outlaw			
75	Visit Milwaukee			
76	Original image found at http://greenfire.com/riverhouse-apartments-1/			
8-79	Milan Outlaw			
0	Original image found at http://blcfieldschool2014.weebly.com/communty-ties-and-			
	the-legacy-of-disruptive-forces.html			
1	Milwaukee Journal Sentinel			
2-82	Google Maps, Photoshop edited by Milan Outlaw			
34	Google Maps			
85	Milan Outlaw			
6	Milan Outlaw			
37	Milan Outlaw			
8	Milan Outlaw			
0-91	Milan Outlaw			
4-95	Milan Outlaw			
8-99	Milan Outlaw			
00-101	Milan Outlaw			
02-103	Milan Outlaw			
04-105	Milan Outlaw			
06-107	Milan Outlaw			
08-109	Milan Outlaw			
10-111	Milan Outlaw			
12-113	Milan Outlaw			
14-115	Milan Outlaw			
16	Milan Outlaw			
19	Milan Outlaw			
20-121	Apple Maps			
22-123	Milan Outlaw			
24-125	Milan Outlaw 145			

	Table of Figures Continued	
– Page	Source	
132	Milan Outlaw	
133	Milan Outlaw	
134	Milan Outlaw	
135	Milan Outlaw	
136	Milan Outlaw	
137	Google Maps Street View	
138-139	Milan Outlaw	
151	Milan Outlaw	
152	Milan Outlaw	
146		