

A City-to-Shore Vision for Connectivity



About This Report

This report presents 17th Street Studios' analysis and recommendations for the surrounding areas of the Greater Cleveland Regional Transit Authority (GCRTA) Waterfront Line. In partnership with the City of Cleveland and GCRTA, this report was commissioned as a semester-long planning project. The clients requested further analysis and recommendations along the Waterfront Line to promote transit-oriented development (TOD). Engagement for the project was approved by the Institutional Review Board and included community and stakeholder interactions.

This report was developed in partnership with the Levin College of Public Affairs and Education with support from the City of Cleveland, GCRTA, guest speakers, and Cleveland State University. Our team expresses its gratitude to the individuals and organizations named here who shared their expertise and insights with us. Numerous other individuals involved in broader efforts to create a thriving waterfront district also provided their opinions anonymously via stakeholder interviews, and we are deeply thankful for their contributions.

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Executive Summary

Downtown Cleveland boasts a beautiful riverfront and lake shore, yet many people might not be able to easily access and enjoy these valuable assets. Topographic barriers and existing infrastructure, including rail lines and the Cleveland Memorial Shoreway, have served to disconnect the waterfront from residents and businesses for decades. There are numerous public and private development initiatives underway that could transform the City's waterfront into an accessible, vibrant, and welcoming space for all.

A missing piece in many of these projects is the potential role that existing light rail infrastructure – namely the Greater Cleveland Regional Transit Authority's (GCRTA) Waterfront Line – could play as the connective tissue for a thriving waterfront district. 17th Street Studios believes that the City's efforts to foster a cohesive waterfront experience can be strengthened and accelerated through a fuller integration of transit, and

that the Waterfront Line can be a catalyst for positive change by supporting transit-oriented development (TOD).

The Waterfront Line serves as a link between the riverfront and the lakefront. 17th Street Studios evaluated existing conditions, engaged with stakeholders, and gathered public feedback. Through this process the project team evaluated TOD strategies that could promote the use of transit throughout the corridor.

By using existing tools like Transportation Demand Management, TOD Strategies, and the Land Code (new form-based zoning code), there are key locations that are ripe for development along the Waterfront Line. The project team has created recommendations for making the lakefront and riverfront more accessible.

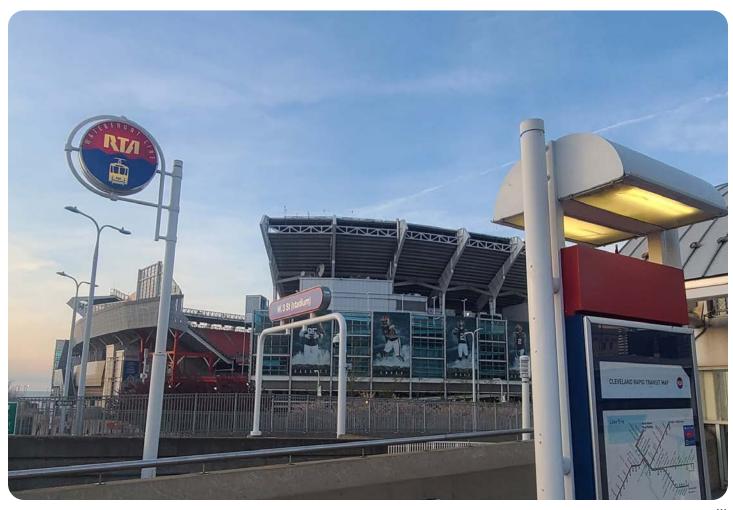


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Introduction

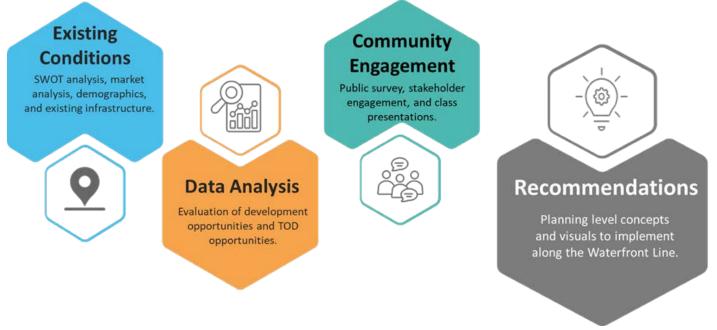
The Reviving Our Waterfront planning process involved four overarching elements: an extensive assessment of existing conditions in the project area, data analysis to evaluate development opportunities, community engagement, and the formulation of our recommendations. We also identified transitoriented development (TOD) initiatives elsewhere - especially in other former industrial hubs in the Midwest – to better understand what practices might be applied successfully in Cleveland. Fortunately, both the Cleveland City Planning Commission and the Greater Cleveland Regional Transit Authority (GCRTA) have implemented policies and guidelines to support TOD, including Transit Demand Management (TDM) and ongoing improvements to zoning and land use strategies. We believe that these changes will help the City achieve key TOD goals, including increasing density, getting parking right, providing safe connections, fostering vibrant public spaces, and prioritizing affordable housing.

With a focus on transforming our waterfront into a destination that is accessible, resilient, and equitable, 17th Street Studios is offering recommendations along three key themes. These include the creation of TOD-focused infill development throughout the study area, the addition of green public spaces and infrastructure,

and the thoughtful use of urban design to support and promote multi-modal transportation options. Our implementation plan highlights action steps, priorities, and time frames for our recommendations. We see implementation being phased and requiring long-term cross-agency coordination and collaboration.

Our vision for reviving the Waterfront Line goes beyond simply improving the line itself. We propose a comprehensive approach that leverages TOD principles to build vibrant communities around the Waterfront Line. As the area becomes more livable, walkable, and connected, this will attract more residents and visitors and increase demand for regular light rail service. This, in turn, will make the Waterfront Line an even more convenient and attractive option for getting around, thereby creating a virtuous cycle that benefits everyone.

"Reviving Our Waterfront Line: A City-to-Shore Vision for Connectivity" is about much more than catalyzing the City's existing transit infrastructure assets. It aims to create a thriving waterfront district with the Waterfront Line as its backbone. By focusing on accessibility, livability, and transit integration, this vision paves the way for a more connected and equitable downtown Cleveland.



Principles, Vision, and Mission

Equity

The waterfront is accessible and welcoming for all.

Accessibility

Increase bike, pedestrian, and transit access to the waterfronts.

Resilience

Promote innovative solutions to social & ecological issues.

The guiding principles of "Reviving Our Waterfront Line: A City-to-Shore Vision for Connectivity" are foundational for the project and engagement processes. The three principles of equity, accessibility, and resilience, root the project in alignment with ongoing projects in the city of Cleveland.

The first principle is equity. Throughout Greater Cleveland, investment and disinvestment has created an uneven distribution of resources. 17th Street Studios imagines the expansion of transit service as vital to providing equitable access for communities to be connected to economic opportunities, access to green space and natural resources, and higher education institutions.

The second principle is accessibility. Along the Waterfront Line there are physical barriers that prohibit recreational access to Lake Erie and the Cuyahoga River. The project aims to empower locals

and tourists to access these waterfronts by means of walking, biking, and the use of transit.

The third principle is resilience. The project commits to promoting green and innovative solutions for social and ecological challenges that affect the areas around the Waterfront Line and Downtown Cleveland. There is a compelling connection between the built environment and a community's ability to address climate related challenges, stress, and environmental degradation.

These guiding principles, alongside the mission, vision, and goals, promote a comprehensive vision for the area around the Waterfront Line.

Our Mission

Regional Transit Authority's Waterfront Line, a key piece of transit infrastructure with latent connective potential, to strengthen and accelerate the City of Cleveland's efforts to restore and transform public access to the downtown waterfront.

Our Vision

Downtown Cleveland's riverfront and lakeshore are vital assets that should be accessible to everyone. Transit is key to a cohesive waterfront and the Waterfront Line (WFL)'s construction in 1996 was a significant investment in restoring public connectivity between downtown and our shores. To realize its true potential, 17th Street Studios has reimagined the WFL by means of transit-oriented development that fosters livable, walkable and connected communities. A waterfront that offers more peoplecentered amenities, embraces equitable housing density, and is integrated into larger transit networks will reinforce transit demand, creating a virtuous cycle that supports regular WFL service. Reviving Our Waterfront Line aligns with and reinforces the City's efforts to make downtown and its waterfronts more accessible, resilient, and equitable for all.

Goals

The goals for the project are broken down into eight categories. These categories represent major themes that align with feedback and other plans in Downtown Cleveland.

Category	Goals
Equity	Foster a waterfront that is accessible and welcoming for all.
Innovation	Explore innovative solutions to persistent socio-ecological issues.
Mobility Network	 Increase cyclist, pedestrian, and multi-modal access to transit facilities. Integrate the Waterfront Line with the wider mobility network. Extend or close the Waterfront Line to increase ridership.
Housing Development	Encourage new housing through transit-oriented development close to transit stations.
Economic Development	 Attract and retain commercial activity and workers near the Waterfront Line. Expand retail amenities that support residents.
Tourism & Local Economy	Enrich & create welcoming environments for all.
Public Health & Environment	 Improve the ecological health of the Downtown waterfront. Support a walkable and safe built environment. Improve access to healthy food for residents and workers.
Public Space	 Promote a safe and comfortable environment for all transit users. Inspire exploration through public art and way-finding. Encourage active recreation & leisure activities on the waterfront.







Existing Conditions

Demographics

It is important to note settlement patterns related to race, ethnicity, income, and educational attainment so that development recommendations do not exasperate existing and longstanding socioeconomic divides. Population change and demographics were analyzed at the county, city, and half-mile study area for the purpose of noting macro-level trends. Then, data was analyzed at the census tract level within the half-mile of the Waterfront Line to give a more nuanced analysis of what is happening at the neighborhood level. Four census tracts were considered as they encompass most of the half-mile radius and have data available for 2015 and 2020 (Figure 1). Those census tracts include: 1071.01, 1077.01, 1033, and 1078.02.

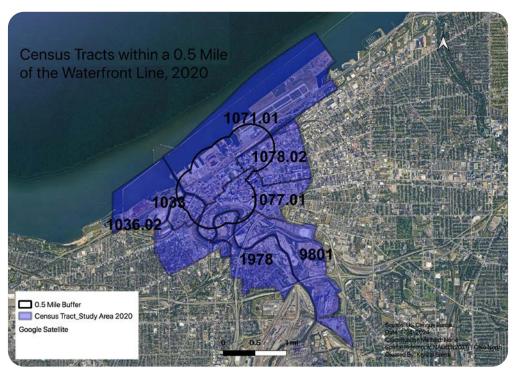


Figure 1: Census Tracts in Waterfront Line area. Created by 17th Street Studios

Population

Population at the Waterfront Line grew 41% between 2010 and 2020. This population boom is not reflected citywide, nor at the county level, which can indicate a major migratory shift towards Cleveland's urban core. In fact, Cleveland lost population in the same 10-year period at a rate of –7%, while Cuyahoga grew only 1%. Extreme population growth and loss differences at the census tract level within the Waterfront Line's half-mile footprint can be seen (Figure 2 and Table 2). Census Tract 1071.01 encompasses all 5 stops of the Waterfront Line and experienced a loss of population at a rate of –6% between 2015-2020, which is in line

with population loss citywide. Census Tract 1077.01 experienced a population boom of 49% over the same time period which may be eschewing population change overall within the study area. The latter census tract includes Downtown, Irishtown Bend, and the Riverfront. Census tract 1033 encompasses the eastern edge of Ohio City and Lakeview Estates. It is experiencing more stable growth at +4%. Census Tract 1078.02 is situated at the eastern edge of the study area and experienced the largest population loss at -11%.

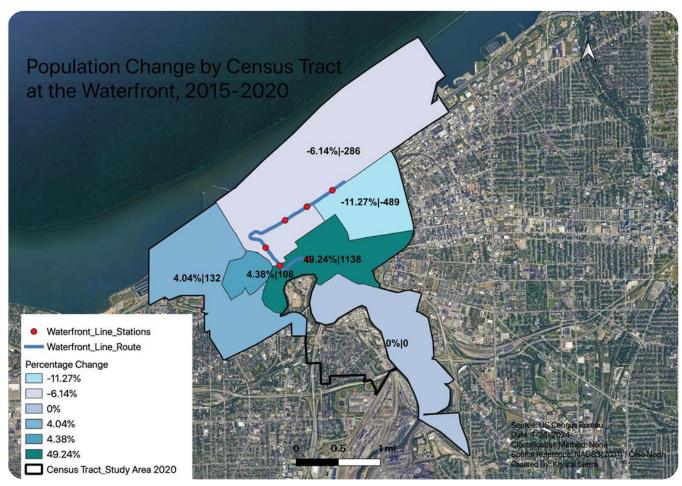
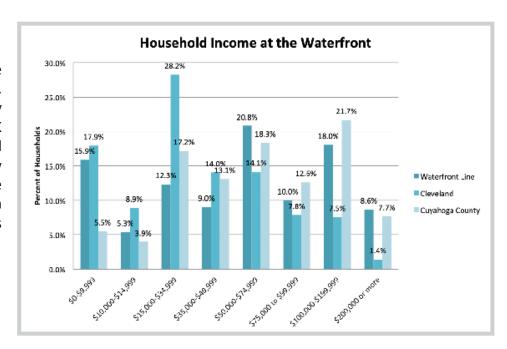


Figure 2. Population change by census tract. Created by 17th Street Studios

Income

The bulk of households make between \$45-\$75k per year. However, there are also many households earning less than \$20K per year, demonstrating a need for affordable housing for very low income-earning households. More details on hosuehold income in the study area are provided in this report's Housing Market Analysis.



Age Characteristics

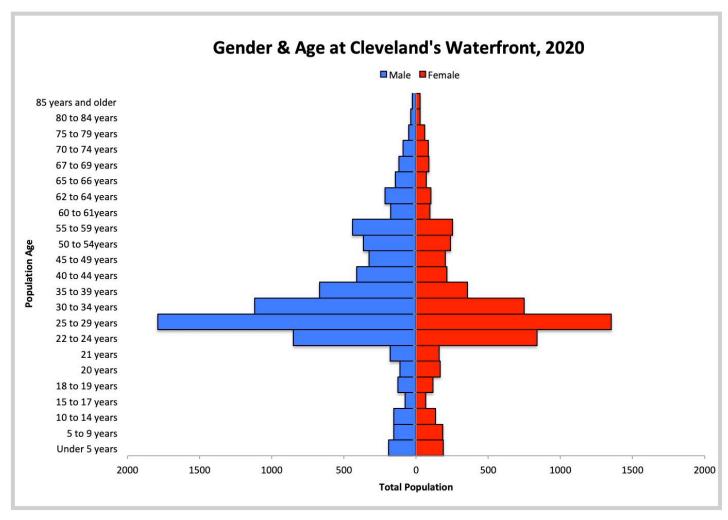


Figure 3. Age & Gender in the Waterfront Line Area, 2020. Created by 17th Street Studios

The largest pool of residents living within a half-mile of the Waterfront Line are young Millennials and elder Gen-Zs who are likely to be early- to mid-career professionals (ages 25 to 34). This age group represents a unique moment in a life cycle, such as beginning a career or starting a family. Daily amenities, such as affordable places to shop for fresh food and entertainment that meets a range of interests during the week, are likely desirable for this age group. Affordable amenities and unique Downtown experiences may help to retain this age group as they enter new life cycles, rather than migrating outwards and away from the city core. There are also many residents aged 55-

64 who live within a half-mile of the Waterfront Line (Figure 3), which presents opportunities for waterfront recreation and programming, entertainment, dining and shopping experiences.

Retaining the 25 to 34 age group into their 40s and continuing to grow the number of residents aged 55-64 will build from strength at the Waterfront Line. Age is much more evenly distributed across the ranges at the city and county levels, which presents a unique opportunity to fill a specific gap in terms of housing options, entertainment, small business, and niche markets that speak to a younger demographic.

Race and Ethnicity

Overall population and household characteristics for the Waterfront Line match more closely with characteristics at the County level than with its immediate geography. Residents and households within the study area are generally whiter, wealthier and more educated than the residents of Cleveland, accounting for City less study area data and County less Cleveland data (Figure 6).

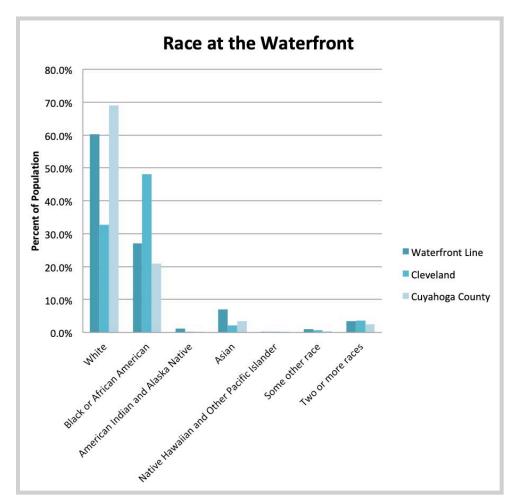


Figure 6. 2020 Race at the Waterfront Line Versus Cleveland & Cuyahoga County. Note: Block group data; CLWFL denotes Cleveland Less Waterfront Line; CCLC denotes Cuyahoga County Less Cleveland. (US Census Bureau, Decennial, Table: DP05) Created by 17th Street Studios

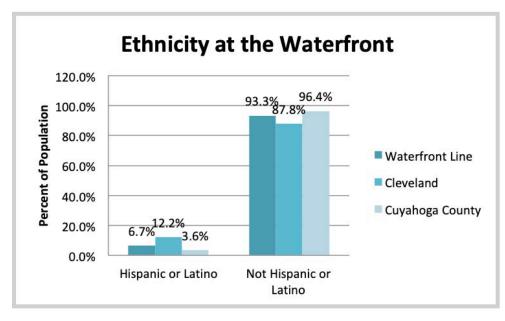


Figure 7. 2020 Ethnicity at the Waterfront Line Versus Cleveland & Cuyahoga County. Note: Block group data; CLWFL denotes Cleveland Less Waterfront Line; CCLC denotes Cuyahoga County Less Cleveland. (US Census Bureau, Decennial, Table: DP05) Created by 17th Street Studios

Safety

Traffic Safety

In 2022, ODOT reported 464 crashes within a 1/2-mile of the Waterfront Line, 68 of which were reported on West 3rd Street and East 9th Street (Figure 8); however, 2022 was the lowest year for reported crashes at the Waterfront Line over a 5-year period between 2018-2022. What is also of note is that reported crashes were cut by half between 2019 and 2020, which aligns with Covid-19 shelter-in-place mandates.

In the 2023 Crash Report issued by Bike Cleveland, 550 people were hit by a motor vehicle while walking or biking last year across the city; 9 of those crashes were fatal. In Ward 3, 84 people were hit by a motor vehicle in 2023, two of which were fatal (Bike Cleveland, 2024). Additionally, East 9th Street and West 14th Street are identified as streets needing special attention in Ward 3 for traffic calming interventions such as "restricting right on red, leading pedestrian intervals, bump-outs, and more" (Bike Cleveland, 2024).

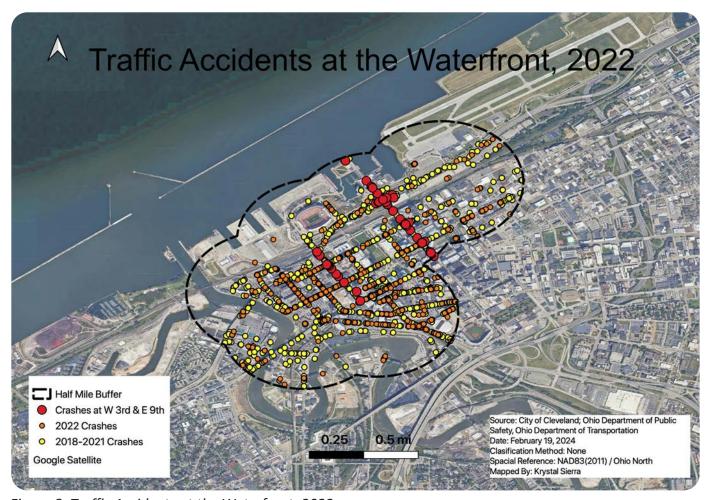


Figure 8: Traffic Accidents at the Waterfront, 2022

Land Use and Zoning

Land Use

There is an abundance of mixed-use structures in the study area. Such buildings are common downtown but are clustered in the Warehouse District and near Public Square. Commercial and office buildings are also located throughout, but are concentrated in the Central Business District.

The study area has an overabundance of surface parking and garages (23.5% of the area is dedicated to surface parking; Appendix A.1). There is not a lot of vacant land so surface parking lots should be considered for future development sites. Light industrial uses are clustered in the northeast corner of the study area, between Superior Avenue and State Route 2 (Cleveland

Memorial Shoreway). There are heavy industrial uses still present, such as the area near Wendy Park and south near the Cuyahoga River, where this is still active industry, and many cargo vessels traverse the Cuyahoga River daily.

Perhaps most notable is the heavy concentration of publicly-owned land along either side of State Route 2, particularly present north of the highway with Burke Airport (roughly 450 acres) as well as near the Browns Stadium. Park uses are also publicly owned, and these are spread throughout the study area except the industrial area in the northeast.



Existing Land Use Map. Created by 17th Street Studios

Neighborhood Profiles

Emerging land use patterns make it easier to define typical characteristics. The neighborhood profile is not rigidly defined but identifies the area with distinct traits or characteristics. The five neighborhood zones are: Central Business District (CBD), Entertainment, Light Industry, Mixed, and Transitioning.

The CBD is the traditional Downtown business area with large commercial office buildings, like the newly constructed Sherwin Williams headquarters. This area is characterized by commercial and mixed-use buildings and several government offices. Most Downtown hotels are in this area, which is roughly bounded by West 3rd Street to the west and East 12th Street to the east.

The entertainment zone follows the North Coast Harbor area (Rock & Roll Hall of Fame, Browns Stadium, Great Lakes Science Center) as well as more adult-oriented districts like Warehouse District and Flats East Bank, noted for their nightlife and restaurant scene. It bleeds into the Flats West Bank, with major drivers being the Nautica Entertainment Complex and the Aquarium. More entertainment uses are planned by private entities in this area; thus, it is likely the character will remain the same for some time. The Huntington Convention Center on Lakeside Avenue is a good marker for noticing the transition from Entertainment to the CBD.



Neighborhood Profiles. Created by 17th Street Studios

The light industrial zone is in the northeast corner of the study area, roughly bounded by East 13th Street and Superior Avenue. There are still many active warehouses and manufacturers, as well as small commercial office spaces. Some larger industrial buildings remain scattered on streets like Lakeside Avenue, with some vacant and falling into disrepair. Recent developments have added some residential and neighborhood commercial closer to the CBD, but the area is still largely industrial.

The transitioning zone is characterized as formerly industrial, mainly with heavy industrial uses that have long since dissipated. Neighborhoods in this zone include Columbus and Scranton Peninsulas, Flats South, and the area just southwest of the CBD. These areas are of renewed focus for both public and private entities looking to make large investments in development and infrastructure. Recreational investment from Cleveland Metroparks, such as the Towpath Trail, bring visitors and residents from all over the region to this area. This zone is rapidly changing with ample vacant or underutilized land and new residential demand.

The mixed zone shares similar characteristics as the transitioning profile but has been developed for many different uses for a much longer time. Heavy industrial users, such as Ontario Stone and Cargill Inc., have operated for decades near residential multi-family buildings. Historically, the lure of industry to the area is due to its proximity to the mouth of the Cuyahoga River into Lake Erie, and the active railroad owned by Norfolk Southern. These traits have remained attractive for industrial users of different scales. Still, Flats West Bank has seen residential and commercial growth over the previous decade, with new construction and conversions of old warehouses into lofts and offices. This is likely due to its proximity to the now bustling Ohio City and Downtown. New trail connections have been added from the south and west to Wendy Park and the area is popular for active and passive recreation, with several small marinas. Much of the land located by the lake is unable to be redeveloped due to the active industry and public greenspace.

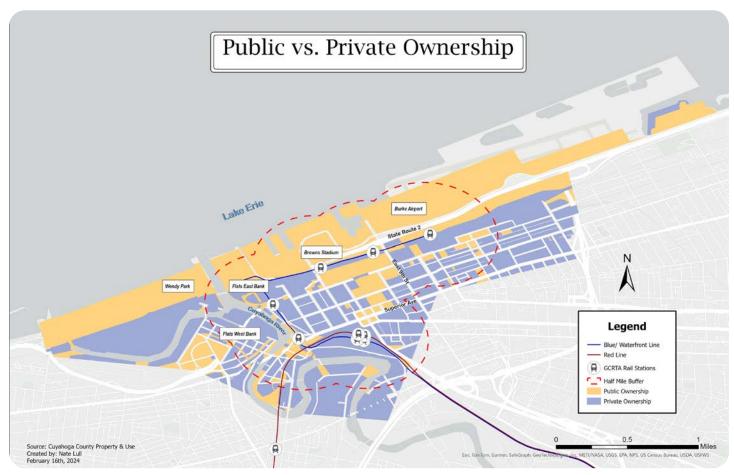




Ownership

Land Ownership data was researched to get a fuller picture of what land ownership looked like in the general vicinity of the Waterfront Line. Approximately 72% of the Waterfront area is owned by private entities, leaving 28% controlled by various public

entities. This presents great opportunities for publicprivate partnerships to form reinvestment in the area. Notably, the City of Cleveland and the Port of Cleveland control virtually all of the lakefront land in the area.



Public vs. Private Ownership Map in Half Mile Buffer from Waterfront Line Stations. Created by 17th Street Studios

Private Ownership

Most of the land near the Waterfront Line is privately owned. However, land that fronts either the Cuyahoga River or Lake Erie is mostly publicly owned. Concentrations of privately owned land occur further south along the Cuyahoga River, with much of that land owned by Bedrock. Other large landowners in the study area include Nautica Entertainment Inc., which

owns a considerable portion of Flats West Bank.

Due to Cleveland's industrial legacy, several major industrial buildings operate within the study area and should be expected to continue operations in the near term.

Public Ownership

The City of Cleveland owns the most land in terms of acres and parcels owned. City owned land near the West 3rd and East 9th Waterfront Line stations includes Browns Stadium, approximately 17.5 acres, and the Cleveland "Muni Lot." The Muni Lot is currently stuck between State Route 2 to the north and active rail lines to the south, thus limiting its overall connectivity to the lakefront and downtown.

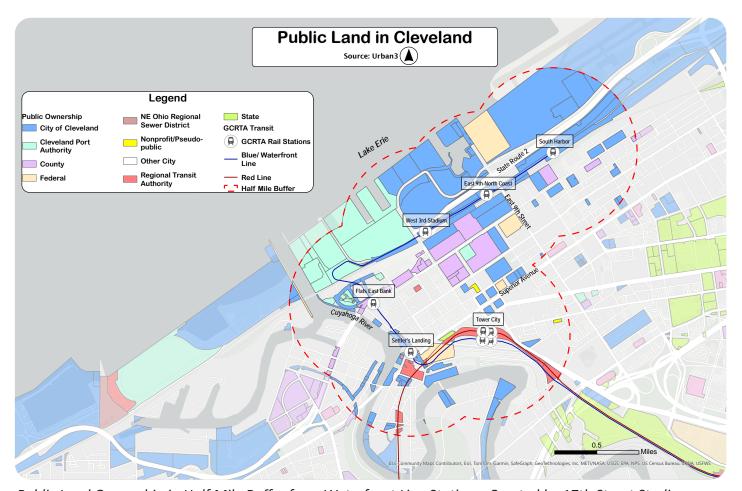
The Port of Cleveland also owns a considerable amount of land, but it is used for transporting and storing materials for the region, which generates anywhere from 3.5 to 4.7 billion dollars yearly (Port of Cleveland, 2016). However, the North Coast Harbor Master Plan has shown small sections of Port land being redeveloped for mixed-use buildings.

The Justice Center Complex, which houses the current county jail and court rooms, is a 7.5 acre parcel located less than a five-minute walk to the West 3rd Waterfront

Station. The Justice Center has long been a source of speculation, but the County recently announced its intention to build a new jail campus in Garfield Heights, making the redevelopment of this site a possibility.

Between West 9th St and West Lakeside Avenue, county-owned land under the existing Shoreway bridge could become available for land lease or purchase if the Shoreway is converted to a boulevard and partially demolished. This could net upwards of 2.5 acres depending on how the Shoreway is reconfigured.

Sandwiched between the Detroit-Superior bridge and the Carl B. Stokes Courthouse is 1.9 acres comprised of two parking lots (referred to as the Robert Lockwood Jr site) owned by the federal government. This site has a steep grade change but is less than 1,000 feet from Settlers Landing station.



Public Land Ownership in Half Mile Buffer from Waterfront Line Stations. Created by 17th Street Studios

Occupancy

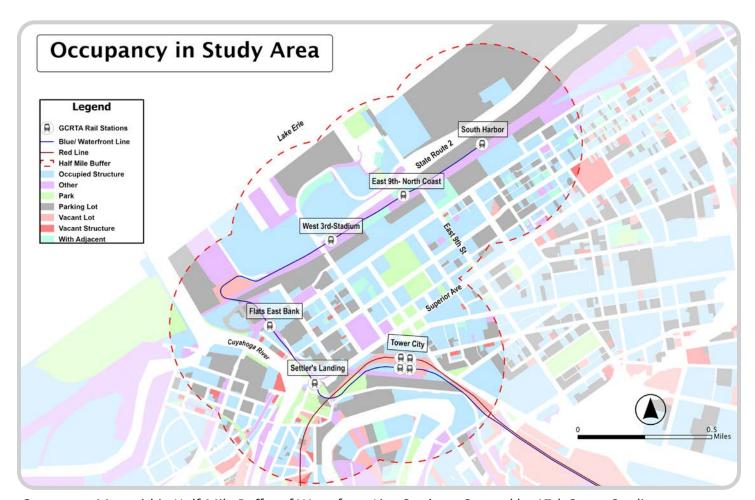
Occupancy data was obtained using Western Reserve Land Conservancy's 2022 Citywide Survey and was only analyzed within the 1/2-mile buffer of Waterfront Line stations.

There is very little "vacant" land in the traditional sense, as most of the land that could be considered vacant is surface parking (23.5%). Notable patterns of large parking lots do appear in Downtown and Flats East Bank close to the Waterfront Line stations. Many surface lots are privately owned and operated. These lots may be easier redevelopment scenarios than active parking garages due to additional demolition costs needed for parking structures, but the profits from parking and low maintenance costs is a disincentive for private owners to redevelop land.

The "other" category comprises transportation uses

such as the active railroad. It should be noted that vacant buildings undergoing renovations and new construction also appeared in the "other" category so it is possible that occupied structures could increase in the near term. Most vacant structures appear in the industrial area, which is highlighted by the former Plain Dealer office building that occupies an entire city block between East 18th Street and East 21st Street. Vacancy occurs at a higher rate outside of the 1/2-mile buffer from the Waterfront Line stations.

Most of the land in the area is dedicated to occupied structures (45%). Overall, this is a positive sign for Cleveland as there are few vacant structures that do not have a known redevelopment plan. Only about 3% of the area in the 1/2-mile buffer is dedicated park space, but there are several large parks just outside of the buffer.



Occupancy Map within Half-Mile Buffer of Waterfront Line Stations. Created by 17th Street Studios



Occupancy Chart within Half-Mile Buffer of Waterfront Line Stations.

Zoning Code

Within a 1/2-mile radius from each of our Waterfront Line Stations, there are six different zoning designations: General Industry (GI), General Retail (GR), Semi-Industry (SI), Limited Retail Business (LLR), Downtown Residential District (DR), and Open Space Recreation (OSR). Each of these zoning districts consists of different regulations regarding residential, commercial, and industrial uses.

The zoning inconsistencies surrounding our Waterfront Line make it difficult to accomplish transit-oriented development. The burden of presenting for variances from the Board of Zoning Appeals can be enough to stifle any effort at redeveloping for higher quality land use. Overly districts such as Pedestrian Retail Overlay (PRO) or Urban Form Overlay (UFO) may apply to redevelopment. See appendix A.3 for a full list of uses.



Existing Zoning Districts in Study Area Map. Created by 17th Street Studios

History

To better understand the study area, our group researched the historical significance, cultural assets, current transportation conditions and environmental conditions found along Waterfront Line stations. The Waterfront Line weaves through key districts that have aided the development of the City of Cleveland. The area is unique in its history, cultural significance, and importance in environmental awareness.

Heritage & Culture

The history and heritage of the City of Cleveland are inextricably tied to Cleveland's waterfront, namely the Cuyahoga River, the surrounding river valley, and the downtown shores of Lake Erie. While today the Flats and Northcoast Harbor reflect a diverse mix of uses, the waterfront was – and remains – integral to Cleveland's industrial legacy.

Prior to Cleveland's official founding in 1796, when

New Englanders — including the city's namesake Moses Cleaveland — arrived at what is now Settlers Landing Park in the Flats, Indigenous communities had traversed and occupied land and waterways in Northeast Ohio for millennia. Indeed, it was at the crossroads of three ancient Indigenous trails that Cleveland was established. In the city's early decades, settlers first developed what came to be known as the Flats, the low-lying areas on the east and west banks of the Cuyahoga River. Steady flows of immigration from Europe into Cleveland throughout the 1800s provided the labor needed to transform the city into an industrial powerhouse, with the Flats at its core (Rubin, 2019).



Baltimore & Ohio Railroad Bridge spanning the Cuyahoga River in the Flats, 1800s (Source: Cleveland Memory Project)



1800s architecture on display on the east bank of the Flats (Source: Crains Cleveland Business)

1800s: Major Growth

In the 1820s and 1830s, America undertook one of its first national infrastructure projects with the construction of the Ohio & Erie Canal, a milestone event that facilitated commerce between Northeast Ohio and the East Coast. The new waterway connected Cleveland with Akron and had its northern terminus at Canal Basin in the Flats. The canal was a critical node in the country's first transcontinental transportation system - connecting New York City, the Great Lakes, and the Gulf of Mexico - that positioned the Cuyahoga River valley to play a lead role in America's era of spectacular industrial growth known as the Gilded Age (1870-1930) (Cleveland Planning Commission, 2014). In recognition of this, Canal Basin Park has been endowed with three national heritage designations: a National Heritage Area, an America's Byway, and an American Heritage River.

In the 1850s, the arrival of railroads in Cleveland hastened a major shift in freight shipping and created conditions for the continued commercial development of both the riverfront and lakefront. The riverfront became dominated by industry, with oil refineries, steelyards, lumberyards, chemical and paint factories, and flour mills ultimately establishing major operations in the area. Enterprising Cleveland entrepreneurs from this era remain household names, such as John D. Rockefeller, who put Cleveland at the center of the global petroleum industry with his Standard Oil Co., Sherwin-Williams, and others.

In addition to the Flats, the city's Downtown waterfront includes Northcoast Harbor, until 1987 known as the Inner Harbor. This area encompasses the 176-acre stretch of lakefront land from approximately the mouth of the Cuyahoga River to the East 9th Street area. it. Beginning in the mid-1800s, railroads and various public and commercial facilities shaped the character of the lakefront (Keating et al, 2005). Railroad tracks along the shoreline helped to connect the lake to downtown Cleveland, and highways and a downtown airport would later be built. Though such infrastructure would facilitate travel and commerce, they greatly hindered – and continue to serve as barriers to – public

access to Lake Erie and have restricted opportunities for recreation.

Rise, Decline & Change

The Great Depression slowed commercial growth along Cleveland's busy industrial waterfront, but World War II brought renewed vigor to the city as local factories were tapped to produce supplies for the war effort. The boon was not fated to last, however, and recessions and deindustrialization in the second half of the 20th century forced Cleveland – and many other "legacy" cities in the Mideast and Northeast – into deep economic decline and population loss. Along the waterfront, many factories and warehouses shut down, leaving large swathes of the area derelict and polluted.

In Cleveland's post-industrial era, the waterfront has gradually transitioned from an industrial and commercial hub to a locus of residential, hospitality, and recreational uses. From the mid-1980s until the late 1990s, the Flats took on new life as an entertainment and nightlife district, with bars and restaurants reenergizing the area. After falling into another period of decline in the early 2000s, the area is now in another era of resurgence, with new residential and commercial development, a growing array of upscale amenities, improved parks and greenspace, and upgrades to Waterfront Line stations.



Postcard from the 1936-1937 Great Lakes Exposition showing the gardens, Municipal Stadium, and boat docks (Source: Cleveland Memory Project)

Cultural & Community Assets

Both the Flats and Northcoast Harbor boast important cultural assets for Cleveland residents and visitors seeking opportunities for leisure and learning. Taken together, these waterfront destinations reflect a unique mix of history and modernity, borrowing from Cleveland's industrial past while spurring us to envision opportunities for renewal.

The lakefront has been central to Cleveland's identity as an important Great Lakes destination. The opening of Cleveland Municipal Stadium in 1931 and the 1936-37 Great Lakes Exposition brought huge crowds of people to the shores of Lake Erie for recreation and entertainment. Later decades saw the establishment of Voinovich Park, the Rock & Roll Hall of Fame, and the Great Lakes Science Center.

Nearby, the Flats offer glimpses into a bygone era, with 18th and early 19th century architecture still on display. Flats East Bank is home to several historic districts, including the Old River Road Historic District, the Cleveland Warehouse District, and Cleveland Centre Historic District in the adjacent Columbus Peninsula. Settlers Landing Park and Canal Basin Park

also commemorate the area's historical legacy.

Community resources, especially public buildings and gathering spaces, are important to the provision of services and recreation to a wide cross-section of the local population. The Waterfront Line's proximity to Downtown Cleveland means that there is an array of such assets within a 10-minute walk of all or most stations (Figure 9). Key points of interest include the Cleveland Public Library, Huntington Convention Center, Cuyahoga County Courthouse, and Cleveland City Hall. The area retains its original basic layout designed in the early 20th century by famous architect and urban planner Daniel Burnham; there are multiple civic buildings surrounding a park called the Mall. Though the centralization of public buildings is a major advantage in terms of access, it can also result in "dead zones" outside of business hours.

One general challenge of using the Waterfront Line to access these community resources and assets is that the line is still not as close to these points of interest as many Downtown bus stops. Moreover, Public Square's role as a central transit hub may limit the viability of making the Waterfront Line a convenient mode of

travel for those traveling to/from these assets.

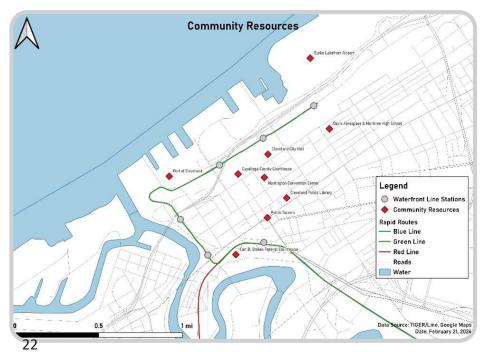


Figure 9: Nearby Community & Cultural Assets

Transit Landscape

The study area is within walking distance of a limited amount of frequent transit lines, however the largest barrier is elevation loss and gain experienced throughout the Waterfront Line. The GCRTA system operates all forms of transit as a huband-spoke model, meaning all routes converge in Downtown Cleveland near Public Square and

Tower City. The closest Waterfront Line station is Settlers Landing, a 1/2-mile walk to Public Square.

Transit connectivity can most effectively be viewed as a system. As it currently stands, there are no buses that directly serve Waterfront Line stations. The closest bus route near a station is along East 9th Street. Though there are bus stops and routes within a 1/4-mile distance of some stations, they may not be accessible or considered within station walksheds due to elevation gain. Train tracks also limit connectivity between stations and surrounding communities, particularly in

the Muni Lot area. The station with the greatest number of bus stops within a 1/4-mile radius is the North Coast Station. The light rail station with the highest frequency routes is Settlers Landing. Figures 3 and 4 present stops and routes within a 1/4-mile of the five Waterfront Line stations.



Map of Waterfront Line Stations

Bus Facilities and Routes Near Waterfront Line Stations

	Settlers Landing	Flats East Bank	West 3rd Street	North Coast	South Harbor
#ofStops	8	4	7	10	3
Route	1,3, 14, 15, 22, 25, 26, 45, 51, 71, B-Line Trolley	B-Line Trolley	8,19,55, B-Line Trolley	8, 19, 39, B-Line Trolley	1, B-Line Trolley
Number of High Frequency Routes	7	1	1	2	2

Flats-based stations are located at the bottom of a steep incline in the Warehouse District, severely limiting transit access (Figure 10). The elevation difference between West 9th Street and Settlers Landing along W. Superior is roughly 45 feet. From West 9th Street to Flats East Bank Station along West St. Clair the elevation drops 50 feet. Near Browns Stadium, the elevation difference between the street level to West 3rd Street Station is about 62 feet.

Connective, But Challenged

The Waterfront Line offers a connection between Tower City, the revitalizing Flats East Bank district, the future Bedrock development site, and high-value North Coast harbor destinations. It connects with the Blue and Green Lines that serve neighborhoods east. The combined light rail system has, however, seen a steady decrease in ridership. In 2002, the average monthly ridership across all three lines was 258,771 passengers

(unlinked passenger trips). By 2023, that average had dropped to 55,136. (GCRTA).

As ridership has dropped, service has also become intermittent. Operating times were severely impacted due to a stress crack on the Waterfront Line bridge identified in 2018. In October 2020, service was suspended due to Tower City construction. The bridge was deemed unsafe in September 2021, resulting in an indefinite suspension of service. The line reopened in September 2023 after reconstruction of the bridge, with a special events schedule for Browns home games. An average of 2,300 passengers rode the Waterfront Line during each of the eight events of the Browns 2023-24 season.

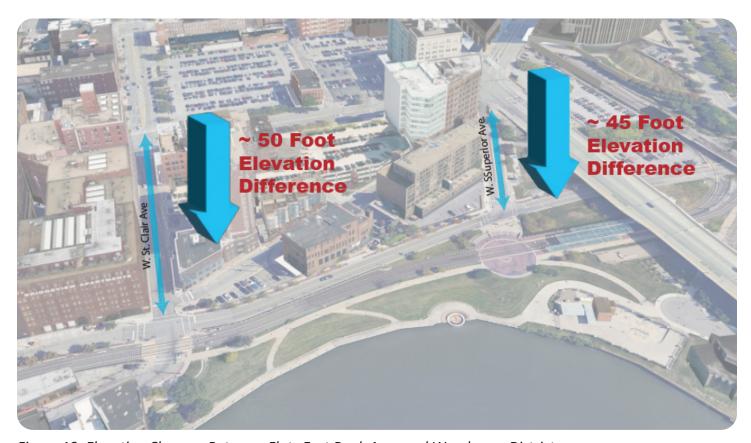


Figure 10: Elevation Changes Between Flats East Bank Area and Warehouse District

Waterfront Line Ph. 2

GCRTA Strategic Plan, 2020

Data from the latest GCRTA Strategic Plan provides a snapshot of the average rider and can help inform future RTA decision-making. A majority of RTA riders are of working age, female, African American, employed full-time, and make less than \$25,000 per year (GCRTA, 2020). Between 30-40% of riders do not have access to a car. The Strategic Plan included GCRTA's top five priorities and an assessment of system strengths and weaknesses, all of which could inform plans for the Waterfront Line.

GCRTA Strategic Priorities:

- Identify additional funding to meet existing and future transit needs
- Better link people to jobs
- Increase frequency of bus service on existing key routes, while maintaining existing coverage
- Improve bus stops with more shelters, amenities, real-time information, and lighting
- Implement fare policies that include fare capping and include free transfers

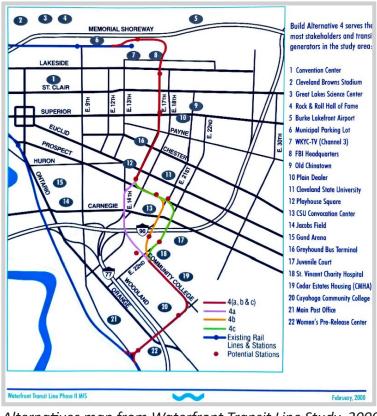
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Waterfront Transit Line Phase II Major Investment Study (GCRTA), 2000

In 2000, the GCRTA conducted a major investment study focused on possible alignments for the Waterfront Line. Some of the key objectives were:

- Create a downtown circulator
- Improve lakefront accessibility
- Serve the transit- dependent population
- Improve air quality
- Link major activity centers

This study looked at 21 possible alternatives of how to better connect the Waterfront Line from South Harbor Station. Based on engagement, economic development impact, and future forecasts for ridership, the study ultimately proposed extending the Waterfront Line as a downtown rail loop with strong preference for implementation along East 17th Street. The potential economic benefits included an estimated \$24.7 Million in annual local tax revenue and 13,800 permanent employment opportunities (GCRTA). Additionally, it was estimated that building a version of this design would generate approximately 782,000 new annual linked trips for the GCRTA. Other examined alternatives included a bus service extension to serve as a Downtown connector and a simplified rail extension only to Euclid Avenue.



Alternatives map from Waterfront Transit Line Study, 2000

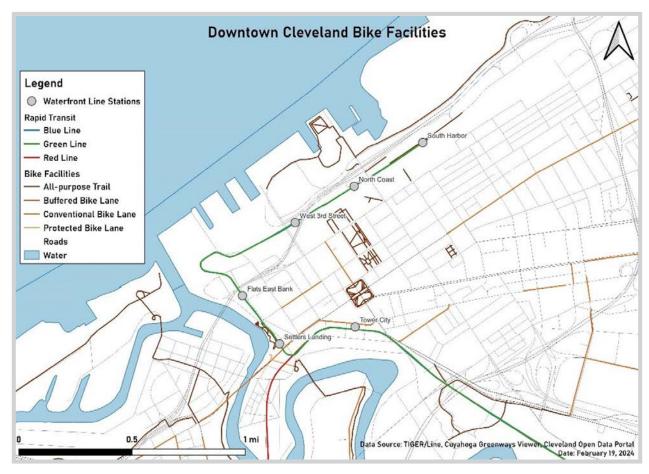
Bike Infrastructure

A major part of the current on-street network is a pair of bike lanes crossing the Detroit-Superior Bridge, connecting Downtown Cleveland to the Ohio City neighborhood. This piece of infrastructure has enabled the bridge to become the primary bike connection between the East and West sides of Cleveland. Other nearby routes include on-street bike lanes on Superior Avenue to the east and Detroit Avenue to the west; these lanes do not consistently feature protective barriers between cyclists and passing traffic (Cuyahoga County Planning Commission, 2023).

The area also boasts some high-quality, off-street trails. The northern terminus of the Ohio & Erie Canal Towpath Trail lies directly to the south of Settlers Landing Station; the trail previously terminated at Harvard Road several miles to the south, but the northern section of the trail has been built over the

last 5 years (Canalway, 2024). This linkage means that bicyclists can now travel from Cleveland to Akron without leaving the trail. The northern section of the Lake Link Trail connects the West Bank of the Flats to Wendy Park, while the southern section connects the Towpath Trail to Columbus Road (Land Studio, 2017). The northern section provides access to other trails, such as the Whiskey Island Connector and the Cleveland Lakefront Bikeway.

Overall, multimodal users enjoy relatively good trail access when trying to reach the southernmost Waterfront Line Stations, especially from points south and west. A goal for future improvements should be to enable better connectivity between the Waterfront Line and the rest of Downtown, which currently requires traversing several hills.



Existing Bike Facilities. (Data Source: Cuyahoga County Planning Commission, 2024)

Environment

The waterfront has been a transportation route for both domestic and international trade. It was a launching point for US oil, rubber and steel industries as part of the Industrial Revolution. It has been a power source, a water source, and a dumping ground for industrial, agricultural, and human waste. All of these roles, and the many other roles the waterfront has fulfilled, have contributed in some way to the state of its environmental health.

During Cleveland's industrial heyday, the potent combination of freight-friendly waterways and rail infrastructure spurred unprecedented growth. It also brought decades of environmental degradation as pollutants from heavy industry flowed into the Cuyahoga and Lake Erie. Eventually, a series of fires afflicted the oil-slicked Cuyahoga, including the famous 1969 river fire that garnered national attention, and a polluted Lake Erie was declared biologically dead (Keating et al, 2005). Such calamities brought public awareness to the pollution problem and spurred policy changes to protect the city's critical water assets.

As part of Great Lakes Water Quality Agreement (GLWQA) signed in 1972 between the US and Canada, the Cuyahoga River was designated an "Area of Concern" (AOC). Designations were assigned as a way to prioritize and implement actions to improve water

quality in areas with the most significant damage (EPA. gov). The International Joint Commission oversees this cleanup and restoration work by identifying specific "beneficial use impairments" (BUIs) that each site must include in their remediation efforts in order to be delisted as an AOC. The Cuyahoga AOC's boundaries include the lower 46.5 miles of the river from Gorge Damn Pool to the mouth of Lake Erie, as well as approximately 10 miles of Lake Erie shoreline that extends from Edgewater Park on the west side of Cleveland to Wildwood Park in Euclid. The AOC continues to have six BUIs in place (Figure 11) (EPA).

Together, the Clean Water Act and the GLWQA have had a profoundly positive effect on the quality of Cleveland's waterfront. Far fewer toxins are discharged into the river, oxygen levels and fish movement have improved, overflows of untreated wastewater are reduced, sensitive species have returned to nest in the area, and both the Cuyahoga River and Lake Erie shoreline have been officially designated as recreational water trails (NPS.gov). What was once a waterfront devoid of life and unsafe for public use is now a scenic hub for recreational activities – including for paddlers and rowers – and a thriving habitat for fish and other wildlife (Piepenburg, 2019). The Cuyahoga River and Lake Erie waterfront are resources worth cheerful celebration as well as fervent protection.

Beneficial Use Impairment	Status as of 2024
Restrictions on Fish and Wildlife Consumption	Removed 2019
Degradation of Fish and Wildlife Populations	Impaired
Fish Tumors or Other Deformities	Removed 2023
Degradation of Benthos	Impaired
Restrictions on Navigational Dredging	Impaired
Eutrophication or Undesirable Algae	Removed 2021
Beach Closings	Impaired
Degradation of Aesthetics	Removed 2017
Loss of Fish Habitat	Impaired





A sign posted near a Lake Erie beach in Cleveland, 1971 (Source: Cleveland State Library Special Collections)

The Forest City

Like many other US cities in the industrial era, Cleveland depleted the tree canopy and green space to make room for manufacturing demand and the needs of the human capital required to support it. The long, continual process of deforestation has had enduring impacts. At only 18% coverage, Cleveland has lost over half of its original canopy over the last 75 years (Cleveland Tree Coalition). Though decades of environmental activism have slowed deforestation, Cleveland's canopy nevertheless is forecast to drop to roughly 15% coverage by 2040 absent substantial efforts to reverse the trend of canopy loss.

Community groups, government agencies, and local businesses remain focused on restoring Cleveland to its former status as "the Forest City" and realizing the many benefits of reforestation. Greenspace improvements along the Waterfront Line can complement these efforts, bolster public engagement, and capitalize on today's political saliency around environmental issues.

Greenspace: Public Health & Economic Benefits

Environmental revitalization efforts along the Waterfront Line can result in positive economic and social outcomes by benefiting the human and ecological health of the downtown environment. In the context of the Waterfront Line, green spaces and vegetation align with many goals of transit-oriented development, including access to public spaces, supporting retail shopping areas, and creating economic value.

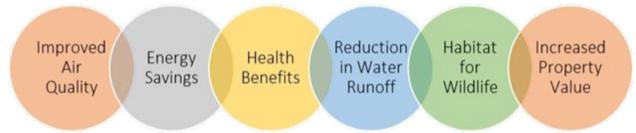
Along with steadily improving water quality, the waterfront has seen a rise in recreational boating, watersports, and fishing. A long list of kayak and paddleboard liveries, jet ski rentals, and boating marinas are taking advantage of the newly designated Lake Erie Water Trail (LEWT) and Cuyahoga River Water Trail (CRWT). However, opportunities are still limited for paddlers and boaters seeking to access the shore and the amenities along it. There are currently

no paddlecraft launch or take-out points on the river north of Rivergate Park, and opportunities for private boats to legally and safely dock along the river near the Flats are extremely limited.

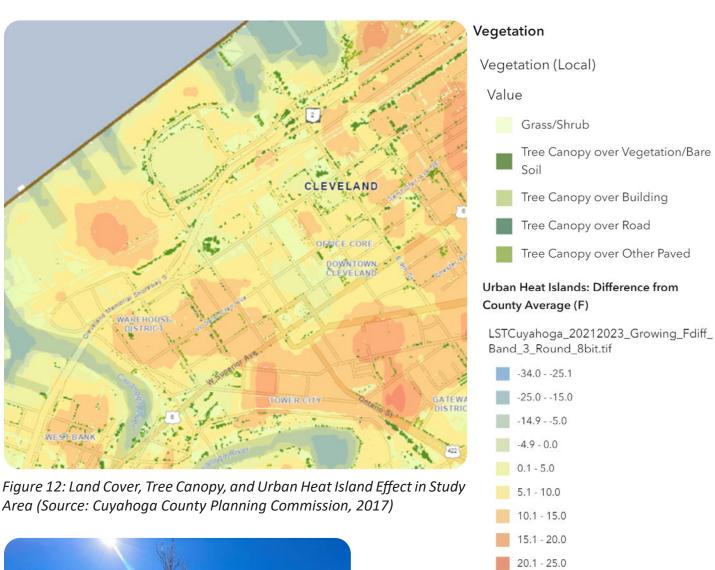
Beyond recreational value, greenspace improves air quality, lessens the impact of high heat days, provides energy savings, reduces stormwater problems, and contributes to erosion prevention, among other health and ecological benefits (Cleveland Tree Coalition). Greenspace improves air quality by filtering out ground-level ozone, absorbing carbon emissions produced by cars and industry, and then releasing oxygen back into the air. Trees and vegetation also help to lower a city's surface and air temperatures by providing shade and cooling, mitigating the urban heat island effect (Figure 12). The potential reduction in heat-related deaths and illnesses will only gain in importance since, by 2050, Cleveland is projected to experience an average of about 39 days per year over 90 degrees Fahrenheit.

Greenspace intercepts and absorbs stormwater, which can reduce the pressure on Cleveland's combined sewer overflow systems that currently see hundreds of thousands of gallons of combined sewages flowing into Lake Erie annually. Trees and vegetation also provide homes, food and shelter for wildlife. Furthermore, greenspace and landscaping have aesthetic value, which translates into increased property values for home and business owners (Galle, Laverne, Arbor Day Foundation).

The evidence is abundant that greenspace, including public access to a clean and safe waterfront, has highly positive impacts on urban environments. Plans for urban development must support water quality initiatives that ensure the waterfront remains fishable, drinkable and open for recreation. The benefits to human health, ecological well-being, and economic growth are significant and cannot be ignored. Fortunately, there are several areas along the Waterfront Line where greenspace initiatives can support the City of Cleveland and the mission of climate goals.



Benefits of Urban Reforestation



Area (Source: Cuyahoga County Planning Commission, 2017)



A recently planted tree in Settlers Landing Park

25.1 - 54.9

Review of Waterfront Development Proposals (1985-2021)

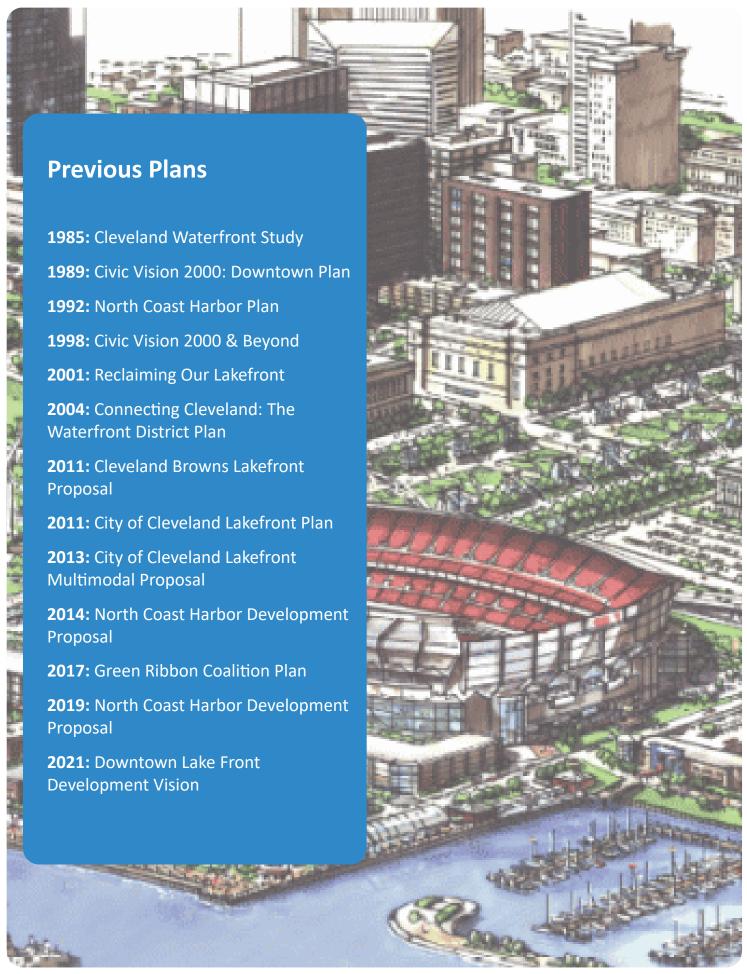
From the Cleveland Waterfront Study in 1985 to the Downtown Lake Front Development Vision in 2021, there have been 13 proposals for the redevelopment of the Cleveland waterfront area. All place an emphasis on increasing public access to the waterfront through various interventions. Another recurring theme is the concept of a land bridge, extending from the Mall to the lakeshore, to foster a connected and coherent waterfront experience for visitors. Many proposals also include some facet of commercial development, seeking economic benefits along the waterfront in addition to public amenities. The location and type of proposed pedestrian bridges have varied greatly in these plans, which also diverge in their treatment of the Cleveland Memorial Shoreway. Some propose to reconfigure the limited-access freeway while others do not.

The collection of plans provides insights into how waterfront development priorities and needs have evolved over time. Early proposals (1985-1992) focused on creating a new, publicly accessible shoreline, cultural attractions and festivals. By the mid-1990s, proposals shifted in focus towards specific

development projects, such as the Rock & Roll Hall of Fame and the Great Lakes Science Center. In the early 2000s, proposals explored bolder options for reconfiguring the Shoreway, creating new development opportunities around Burke Airport and the Port of Cleveland, as well as removing the Shoreway between specific points. Proposals continued the focus on development throughout the 2010s, with specific plans for mixed-use development, a transient marina, and wider visions for pedestrian bridges. In this last regard, the "Green Ribbon Coalition" proposed a unique land bridge concept. The latest proposal (2021) focuses on a mixed-use development around existing cultural assets and proposes a land bridge connecting the Mall to North Coast Harbor, conveys the City's enduring desire for a more accessible waterfront.

While most of these proposals have yet to be fully implemented, some elements have come to fruition: Rock & Roll Hall of Fame (1995), Great Lakes Science Center (1996), North Coast Harbor Pedestrian bridge (2021), and Burke Lakefront Airport improvements.

Feature	1985	1989	1992	1998	2001	2004	2011 (Browns)
Public Access	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian Bridge	Mall to lakefront	Mall to North Coast Harbor	None	Mall to North Coast Harbor (extension of Mall)	None	None	The Mall to stadium
Development	Cultural attractions, markets, festivals, parks	Planning initiatives, residential areas	New buildings (Rock Hall, Science Center)	Extend the Mall, transportation center	Reconfigure Shoreway, new dvlpmt opportunities	Burke, Port of Cleveland, new dvlpmt	Stadium facilities, community sports venues
Feature	2011 (City)	2013	2014	2017	2019		2021
Public Access	Yes	Yes	Yes	Yes	Yes		Yes
Pedestrian Bridge	Mall to North Coast Harbor	Mall to North Coast Harbor	West & North side of harbor		Wider bridge to North Coast Harbor		Land bridge over railroad tracks
Development	Mixed-use dvlpmt, bridge	Multimodal facility, bridge	Commercial/ residential dvlpmt, bridge, marina	Land bridge	Updated 2014 plan with wider bridge		Mixed-use with existing cultural assets, land bridge



Development Constraints

Brownfields

The Ohio EPA defines "brownfield" as a site that "may be complicated by the presence or potential presence of hazardous substance, pollutant, or contaminant." In 1980, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was enacted by Congress to "create a tax on the chemical and petroleum industries and provide broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment" (EPA, 2023).

There is one brownfield site identified within a half mile of the Waterfront Line, which could present challenges for redevelopment. The 2.7-acre site is located between Tower City on Huron Avenue and the lower Tower City – South Lot off Canal Road

(Figure 13). The exact location is difficult to determine because the address (2900 West 3rd St) and parcel number do not align with the latitude and longitude coordinates. The property name associated with the site, however, is the former Cleveland Asphalt Plant site, which might provide some insight as to the brownfield's exact location. The site, currently vacant, was closed in 1975 and in 2009 was entered into the Ohio Brownfield Inventory Database (OBID). Phase I and Phase II assessments also entered the database in 2009, however site conditions have likely changed since that time. Additional site details can be obtained from the Cleveland Department of Economic Development, and the US EPA provides technical assistance as well as site assessment and redevelopment funds for projects that repurpose brownfields.

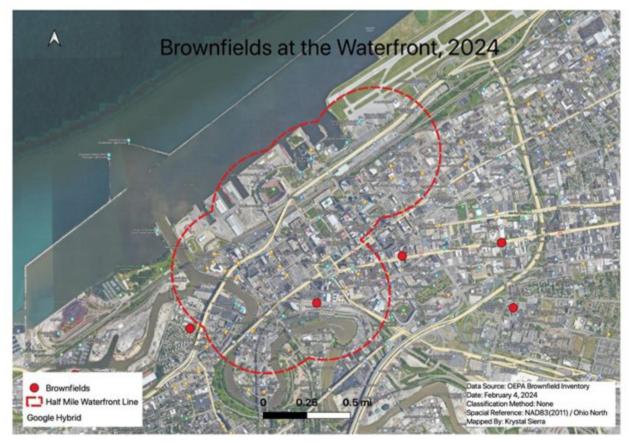


Figure 13. Brownfield Sites in Closest Proximity to Waterfront Line (Source: Ohio EPA Brownfield Inventory Database)

Underground Storage Tanks

There are two active and 45 inactive underground storage tanks (USTs) within a half-mile of the Waterfront Line (Figure 14). Like brownfields, USTs present additional challenges for redevelopment and are regulated by the Ohio Department of Commerce Bureau of Underground Storage Tank Regulations (BUSTR). BUSTR "regulates the safe operation of [USTs] containing petroleum (and hazardous substances) and supervises the appropriate investigation and cleanup of suspected and confirmed releases of such tanks to protect human health and preserve the environment for citizens of Ohio" (ODC).

Of the 45 inactive USTs, some of them are further identified as "closed," meaning the system is permanently taken out of service. Many others are identified as "contained," meaning the UST is contained by a liquid-tight container to prevent leaks or spills.

Although no further action is required to protect human and environmental health for inactive USTs, redevelopment of these sites will be more complex and costly than greenfield development. The two sites containing active USTs also present challenges. Both site statuses indicate a Remedial Action Plan (RAP), though it is unclear whether the sites are following a RAP or if a RAP is a recommendation.



Underground Storage Tanks present an environmental challenge to redevelopment (Source: Hopkins, MN)



Figure 14. Underground Storage Tanks in Full Study Area (Source: Ohio Department of Commerce, Bureau of Underground Storage Tank Regulation)

Housing Market

In April of 2023, the Downtown Cleveland Alliance and Greater Cleveland Partnership released the Downtown Cleveland Market Study Report, which assessed housing demand and supply within two geographies of the Greater Downtown Cleveland area: "Westside" and "Downtown Core." The Waterfront Line study area sits wholly within the report's assessment of the Downtown Core (Figure 15). The DCMS Report offers useful insights based on Decennial Census data for 2010-2020, conveying long-term trends for Cleveland and its downtown submarket. Our team has assessed residential market conditions more specific to the Waterfront Line study area through additional analysis, relying on 2018-2022 American Community Survey Census data for three census tracts: 1033, 1071.01 (referred to here as the Lakefront Tract), and 1077. This focused analysis reveals the character of residents living within a 10-minute walkshed of Waterfront Line stations.

Our housing analysis sourced information regarding household income, tenure, rent burden, and home

value, among other measures, which support an imperative to provide mixed-income and diverse housing types to support the varying needs of Cleveland residents. Ensuring housing equity along the Waterfront Line will require a concerted effort to expand choice in housing types, to maintain the manageability of housing costs, and where possible, to support feasible paths toward home ownership.

The Lakefront Tract (1071.01) presents as a middle ground between home values on the western edge of the study area and downtown Public Square. This provides an opportunity to offer mixed-income housing as both higher value housing and affordable alternatives can be supported. Given the supply of rental units in the Lakefront Tract, demand would support a mixed-income housing development at the lowest and highest levels of earners in relation to the average household median income.

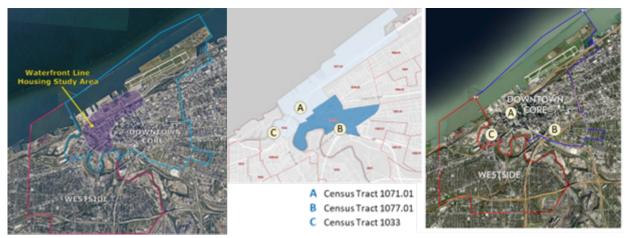


Figure 15. Downtown Cleveland Market Study Report (2023) Analysis Study Area with Waterfront Line Study Area detail and Selected Census Tracts for Analysis with Corresponding Location in Downtown Cleveland Market Study's Downtown Core (Sources: [Adapted from] Urban Partners (2023) Downtown Cleveland Market Study Report, Downtown Cleveland Alliance and Greater Cleveland Partnership)

Waterfront Line Households: Size, Tenure, Income

Despite an observed decrease in average household sizes nationally, averages for both the Downtown Core and the Greater Downtown Cleveland area have ticked up in recent years, according to the DCMS Report. Our smaller three-tract study area had roughly 6,200 households represented in the 2018-2022 ACS data. The average size of those households appears largely aligned with averages for the Downtown Core, reported as 1.75 in 2020.

Renter-occupied units make up a large majority of households in the study area (Figure 16). Renters represent no less than 89% of occupants in any of the three examined census tracts (US Census Bureau ACS 5-year 2018-2022 DP04). Most residents in the study area live in structures housing 10 or more apartments.

The most typical living space for an owner-occupant is a 2-3 bedroom unit, whereas renter-occupants are likely to reside in 1-bedroom units. There are few options to house medium-to-large families in WFL housing units. Appendix A.4 contains more detailed data.

Household income levels hold implications for housing demand at various cost levels. Income levels across both renters and owner-occupants are shown in Figure 17. The bulk of households make between \$45-75k per year, translating to a need for monthly rents of \$1,200-\$1,550. However, there are also many households earning less than \$20,000 per year, demonstrating a need for affordable housing for very low incomeearning households.

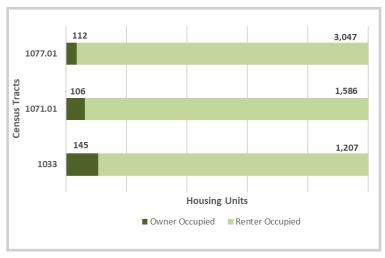
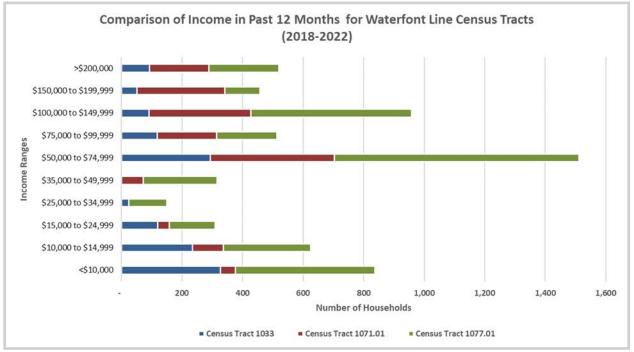


Figure 16 (at left). Housing Tenure by Waterfront Line Census Tract (2018-2022) (Source: US Census Bureau)

Figure 17 (below): Comparison of Household Income in Past 12 Months for Waterfront Line Census Tracts (2018-2022) (Source: US Census Bureau)



Housing Costs and Rent Burden

Census data on monthly housing costs revealed that a considerable number of area residents are rent-burdened. The US Department of Housing and Urban Development (HUD) defines "rent burden" and when a resident must spend more than 30% of household income on rent. Among owneroccupied housing units, all reported householders earning less than \$35k a year are reportedly spending more than 30% of their income on housing costs (Figures 18 and 19). More than half of those earning between \$50k and \$75k are similarly over-burdened with housing costs. Among renter-occupied housing units, nearly half experience excess rent burden, the severity of which varies by income level.

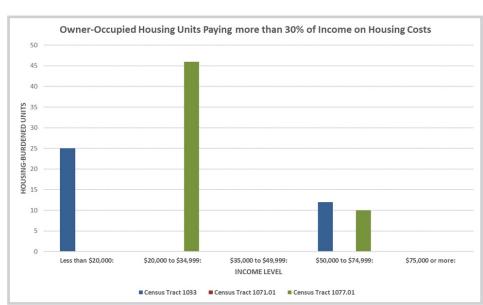


Figure: 18 Owner-Occupied Housing Units Paying More than 30% Income Waterfront Line Census Tracts (2017-2022).

(Source: US Census Bureau)

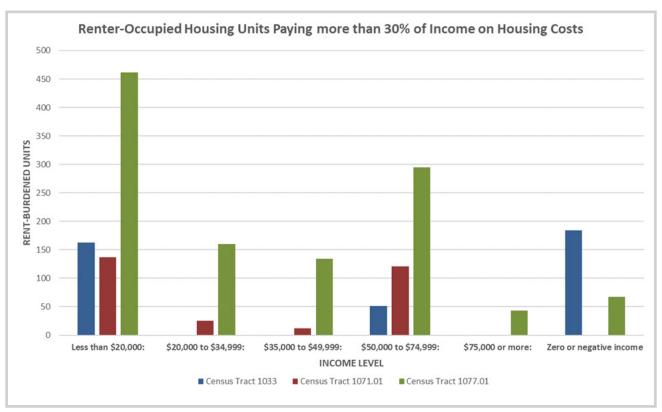


Figure 19: Rent-Burden in Waterfront Line Census Tracts (2017-2022). (Source: US Census Bureau)

Affordability and Home Value

In the Downtown Cleveland Market Study Report, researchers deduced that a three-person household would need to make at least \$104,620 a year to afford to purchase even a rehabilitated 1,700 square foot home in Downtown Cleveland under present conditions. According to the Department of Housing and Urban Development, the full average median income for such a household (in 2022 for Cleveland) was \$76,900. Given the inflated price point of new construction and the high interest rates characterizing mortgages throughout 2023 and early 2024, workingclass households earning 100% -120% of average median income have no opportunity to buy a newconstruction home without considerable subsidy. The maximum affordable monthly rent for a three person household is \$1,794.

As it relates to the Waterfront Line census tracts, more than a third of the reported 363 owner-occupied units are valued between \$500k and \$1M. Roughly another third of owner-occupied units boast a value between \$200k and half a million, while the bottom third of owner-occupied units hold values between \$100k and \$200k. Census tract 1033 presents the most number of owner-occupied units and the most diversity of home values (\$100k - \$300k). The median home value here is \$204,000. In stark contrast, census tract 1077.01 features units valued upwards of \$300k almost exclusively and accounts for over half of the higher end values of the three tracts combined. The median home value here is \$645,800. Census tract 1071.01 holds a middle ground in both number of units and median home value (\$455,600).



Rental Housing and Demand

Our project team performed the following rental gap analysis to assess the variation of supply and demand within the most primary census tracts along the RTA Waterfront Line. See Appendix B for full detail of this analysis, per census tract.

Census Tract 1071.01 (Lakefront Tract): This census tract along the lakefront has very few rental units that cater to households earning >125% Area Median Household Income (AMHI) which happens to be 41% of all households in this tract. These households enjoy renting surplus units available in the 30% - 100% AMHI ranges, which are priced much lower than their maximum rent limit of >\$2,858. Households earning

30% to 125% AMHI enjoy an overabundance of affordable rental stock while those earning the least must meet their need for shelter with units that are almost twice as much as their maximum rent limit (Figure 20).

Census Tract 1077.01: The closet of the three tracts the heart of Downtown Cleveland, this tract has a renter AMHI of \$60,864 and does not feature enough housing for those earning over 125%- nor those earning under 50% AMHI. All of the surplus housing is in the rent range of \$1,217-\$1,902. Both the highest and lowest earners of this tract are in competition for

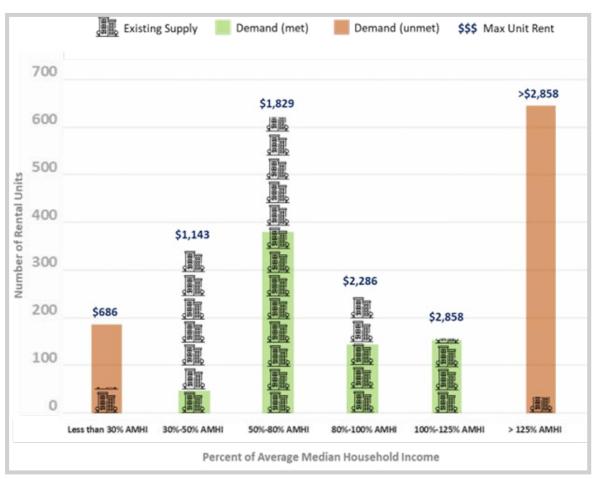


Figure 20. Supply versus Demand for Renters in Census Tract 1071.01 (Source: US Census Bureau)

the excess supply of units priced for 50% to 125% rent limits. Renting these units is at least 2.7x the conventional housing burden for the area's lowest earners (Figure 21).

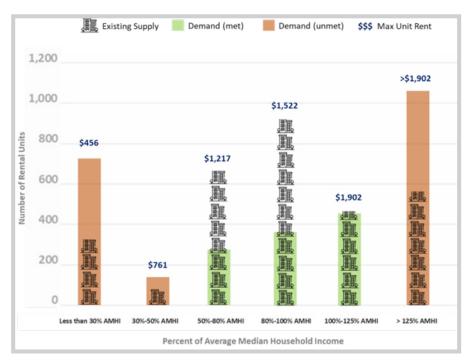


Figure 21. Supply versus Demand for Renters in Tract 1077.01 (Source: US Census Bureau)

Census Tract 1033: This tract has the most equilibrium between supply and demand at appropriate income levels. This is largely due to public housing at Lakeview Terrace. This tract's overall AMHI is \$60,736 (2022 ACS 5-year) with no distinction between renter and owner median income levels. There is some excess demand among households earning 100% to 125% AMHI but, notably, there is no demand for the supply of housing priced at 50%-80% rent limits. (Figure 22).

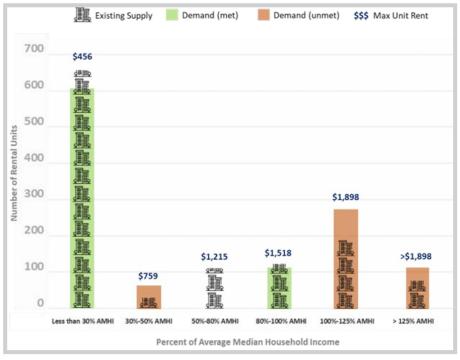


Figure 22 Supply versus Demand for Renters in Tract 1033 (Source: US Census Bureau)

Social Justice Implications

Equity Considerations

When creating a plan to redevelop an area, it is essential to consider both current and potential future residents. A common concern in development is gentrification, or displacement of lower-income individuals in an area for people of a higher socioeconomic status. Not only can this cause a divide between communities of color and different socioeconomic groups, but also for those with disabilities. Considering equity impacts is essential to ensure that those most vulnerable will be protected and empowered by changes to the urban landscape. As such, any plan to revive the Waterfront Line should be inclusive in its design and provide benefit to those who traditionally would not have opportunities to live along the waterfront.

Racial Disparities

Cleveland has been one of the most segregated cities in the US since the 1920's. The second great migration saw an influx of African Americans from the American South to Cleveland, which triggered white flight from the city into suburban neighborhoods (Raponi, 2023). Policies such as restrictive zoning and redlining resulted in limited housing options for the new African American population clustered in Downtown and near east side neighborhoods that were formerly white. "Slum" clearance projects throughout the first half of the 20th century, including for highway construction, also displaced many African Americans from the urban core. These forces served to disconnect Cleveland's communities of color from the waterfront, a legacy that continues to this day.



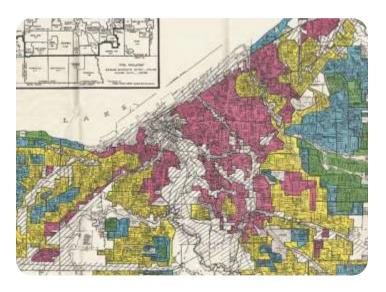
A child in the east side neighborhood of Hough, 1955 (Source: Raponi, 2023)

The reality that the Waterfront Line does not extend further eastward than the Cleveland Municipal Lot may represent a missed opportunity to enhance mobility and connectivity for east side residents. This includes the historically marginalized neighborhoods of St. Clair-Superior and Goodrich-Kirtland Park, as well as Hough to the south. These areas are still grappling with the effects of population decline, deindustrialization and disinvestment, the outward movement of wealth to the suburbs, racial and economic segregation and other "legacy city" challenges. Lakefront access is very limited for east side neighborhoods, where most residents are African American and lower-income (Clark, 2021). Though there is potential for a revitalized Waterfront Line to serve as a connective tissue between Cleveland's east and west side neighborhoods, a major concern is ensuring accessibility for all users.

Community Engagement

Residents of Cleveland's historically marginalized communities have often been left out of the city's decision-making processes. The success of development initiatives, however, does depend on community and stakeholder engagement. From an equity standpoint, programming that is inclusive of all demographics and abilities reaches a wider audience and drives development goals forward. The revitalization of the Waterfront Line can be a tool to improve access to job and education opportunities as well as improved quality of life for residents. This is particularly the case for those who are lower-income, minority, elderly,

and/or do not have access to a personal vehicle. The Waterfront Line's integration into the broader transit network as well as the inclusion of affordable housing options in any new residential development along the line can improve access to nearby job opportunities and amenities. Likewise, the transit system itself will benefit from improved ridership, boosting its overall resilience and paving the way for the network's continued expansion into the communities who need it most.



HOLC Redlining Map of Cleveland, Ohio (Source: Case Western Reserve University)

SWOT Analysis

Strengths: A major strength of the Waterfront Line is that the infrastructure for light-rail is already in place. A major barrier to rail projects is the cost of construction and purchasing right-of-way, while Cleveland is lucky to have light and heavy rail lines already established. Another strength is the ongoing and past redevelopment efforts in the area surrounding the Waterfront Line. While its full potential has yet to be realized, areas like the Flats East Bank attract tourists and visitors from around the region and have a familiarity established already. Historic districts create a sense of identity for the area and tie in with Cleveland's history as an industrial powerhouse.

Additionally, Cleveland's waterfronts have attracted public and private investment and renewed focus in the past five years. Similarly, the current City and County administrations appear to possess the political will to commit funding towards improving these areas. Additionally, a recently established Tax Increment Financing District (TIF) will be able to provide direct funding towards making public improvements to the Downtown area.







Examples of strengths in the Waterfront Line area

Weaknesses: Transit-supportive density along the Waterfront Line does not currently exist. Existing and planned residential development is geared towards the existing population: a white male, age 20-25 with a college degree making more than \$100K per year. When juxtaposed with the profile of the average rider, an African American woman aged 25 making \$25k, low ridership is expected.

The wide availability of parking makes alternative methods of transit less enticing, with surface lots also detracting from the area's walkability and livability. Streetscapes along several key avenues are in various levels of disrepair and are unfriendly to pedestrians and cyclists. Additionally, tree canopy is only about 4.1% for Downtown, which contributes to urban heat island effect and its range of negative impacts for urban communities.

Other environmental challenges include that the sloping terrain in many areas affects feasibility of new construction and accessibility. There are numerous brownfield sites and underground storage tanks in the study area. Water safety is also a concern, as the currents are unsafe for swimmers, and there are limited places to enter the river or dock a small craft. Fishing is common but water quality issues make consuming lake fish risky.







Examples of weaknesses in the Waterfront Line area

Opportunities: There is more funding available for major projects than in the past, thanks to the CARES and Inflation Reduction Acts as well as ARPA funds. Funding for private entities such as Bedrock are also driving plans to improve connectivity and activate this space.

The site area has always been a place where large gatherings and festivals take place. There are opportunities for partnering with existing destinations along the waterfront such as the Rock & Roll Hall of Fame, Nautica Pavilion, Great Lakes Science Center, and Cleveland Browns Stadium for programming.

There are abundant spaces for enhanced arts and culture programming, particularly around Settlers Landing. There is space to improve "The Loop" in a more environmentally savvy way, and to develop family friendly greenspaces and amenities as well.

Increasing housing options is another opportunity to increase density. Making affordable housing available will improve ridership — by closing the gap between those who typically use the RTA and those who live in the neighborhood — to levels that could justify daily Waterfront Line service. Flats East Bank's ongoing resurgence can expand transit demand and attract tourists, and adding more amenities such as grocery stores and retail can also boost ridership among area residents. There is an opportunity for phased mixed-use development at the Muni Lot site. Enhanced and updated wayfinding around the stops can increase awareness of the Waterfront Lie and the attractions accessible via RTA.







Examples of opportunities in the Waterfront Line area

Threats: The Cleveland Browns, NFL, and the City of Cleveland are in negotiations over the Browns Stadium, one of the biggest attractions on the waterfront. The team ownership is looking at the possibility of moving the stadium and the team to Brook Park, a suburb of Cleveland. This could impact the proposed land bridge (wkyc. com, 2024).

Accessibility in general is a threat to the area and the Waterfront Line. Since the line does not run regularly, potential riders do not have a way to utilize the line. The Shoreway's current configuration is a major barrier to waterfront access, and safe cycling and walking connections are lacking. Heavy rail corporations could be a threat to future development since they are immovable and require coordination planning to keep commerce rolling.

There is also the perception of safety that contributes to a feeling of negativity against public transportation. Some potential riders may not feel safe or comfortable utilizing transit and thus may elect to drive to the area.







Examples of threats in the Waterfront Line area

Precedent Studies

Transit-Oriented Development

When located in proximity to transit stations, mixeduse development can help increase ridership and promote economic development, making it a popular strategy in many cities across the US. Development surrounding the RTA Waterfront Line should consider past TOD and waterfront planning implemented by peer cities, since such plans may feature key concepts that can be applied to Cleveland. This precedent study of similar development plans from Denver, Colorado; Seattle, Washington; Pittsburgh, Pennsylvania; Detroit, Michigan; Birmingham, Alabama; Buffalo, New York; St. Louis, Missouri; and Minneapolis; Minnesota has helped to inform 17th Street Studios' recommendations for the Waterfront Line. The cities outlined here employ qualitative and quantitative methods to achieve innovative implementation strategies for TOD planning. Conventional best practices are weighed with rigorous research methodologies to produce contextspecific plans that are compatible with both citywide plans and individual station areas.

Key concepts for waterfront development include creating green space, amenities, and developments to connect people to the waterfront. Both Pittsburgh and Detroit, similar in population to Cleveland, have implemented plans that focus on the flow of energy between infrastructure, businesses, green spaces, and the riverfront. Both cities have updated their zoning code to encourage mixeduse development and adaptive re-use of existing structures. Elsewhere, cities such as Seattle and Denver have established TOD typologies with the intention of synthesizing novel strategies with existing neighborhood character. Avoiding one-size-fits-all strategies allows for proper resource allocation and prevents unproductive disruption of the urban fabric. Typologies also allow planners to faithfully assess the strengths and barriers to TOD in particular locales.

Denver's Comprehensive TOD Planning

Denver has seen consistent growth in recent decades and has taken proactive steps in guiding development toward outcomes that facilitate the use of public transit. Colorado's state capital and largest city has recognized the importance of identifying the unique character of the urban fabric surrounding transit nodes. Organizing nodes into typologies based on shared characteristics is an efficient way of recognizing appropriate forms of development for individual neighborhoods. Carefully balancing the needs of neighborhood residents with structural aspects of the built environment has proven to be an effective method of implementing successful TOD strategies. Denver classifies TOD typologies by

assessing five basic characteristics surrounding transit stations: land use mix, street and block pattern, building placement and location, building height, and mobility. Based on these attributes, Denver's TOD plan sorts rail stations into the following typologies: Downtown, Urban Center, General Urban, Urban, and Suburban. Denver also employs the use of functional overlays for transit stations that might possess strengths that are compatible with a specific type of development, including Innovation, Institutional, and Entertainment.

Denver's Downtown and Urban Center TOD typologies recommend a strong mix of land uses defined by high to mid-rise buildings. Street and block patterns are defined by linear streets with small regular blocks with frequent automobile and pedestrian traffic. Building frontages consistently face the sidewalk, with parking in the rear. Building height is sensitive to historic character where necessary but is otherwise consistent with other mid to high-rise zoning regulations. This typology recommends pedestrian priority, abundant bicycle infrastructure, and connections to other transit networks. The Urban Center typology is better suited for regional concentrations of employment, favoring mixed use commercial land uses to residential.

Denver employs a set of criteria for determining the viability of TOD around existing stations. Stations are weighed based on their market based on the numerous criteria that fall into these broad categories: market readiness, development potential, and transit-oriented characteristics. Applying a rigorous research methodology allows decision makers to make informed choices on how best to dedicate resources, and to identify what course of action is most appropriate in different locations. Also, rather than utilizing a simple 1/4 mile buffer to determine pedestrian access to each station, individual walksheds are created. Network analysis does a better job of visualizing weak points in an area's urban fabric that planning may be able to address. This method identifies clear barriers to walkability in the neighborhoods in question, providing a clearer picture of a neighborhood's potential for transit-oriented development.



Rail Map of Denver, Colorado with TOD typologies (Sourc: City of Denver, 2014)



Rendering of Urban Center typology; Denver, CO (Source: City of Denver, 2014)



Walksheds for Denver Rail Stations (Source: City of Denver, 2014)

Minneapolis, Minnesota

A city that has been at the forefront of transit-oriented-development for the last 20+ years, Minneapolis is a medium-sized city that has been successful at boosting public transit ridership. For the sake of comparison with Cleveland, note that Minneapolis does have a slightly higher population (430k to Cleveland's 370k), but has fewer total miles of transit track (22 miles to Cleveland's 37 miles) and fewer light rail stations (37 stations to Cleveland's 52 stations). Despite this, Minneapolis' annual light-rail ridership was more than triple that of Cleveland in 2019 – roughly 25 million trips per year versus about 7.1 million combined heavy and light rail trips in Cleveland (Federal Transit Administration's National Transit Database). These ridership numbers alone stand as reason enough to look further into how Minneapolis has been so successful with its public transit.

Minneapolis has been able to boost transit ridership numbers by connecting housing with transit. They have created neighborhoods around already existing transit lines, as seen in the example of Prospect Park. This formerly industrial area, which consisted mostly of brownfields, has been remediated and developed over time. This has occurred while area demand for housing has grown rapidly, partially due to its proximity to the University of Minnesota (Metro Council, 2016).

There has been a heavy focus on increasing housing density near the Green Line transit station in Prospect Park, with many new multi-family housing developments. The growth in neighborhood population led to the opening of a grocery store in 2018, which acted as a catalyst for further development. Additional mixed-use and residential development is ongoing, and the influx of new residents over the last two decades has led to an overall 20% increase in ridership at the Prospect Park Green Line station since 2005 (Towerside MSP, 2024).



Prospect Park Neighborhood in Minneapolis (Source: Element Commercial Real Estate, 2022)

Pittsburgh, Pennsylvania

Progress has been made to focus on riverfront and transit-oriented development in Pittsburgh, where Downtown is marked by the flow of the Allegheny River and Monongahela River into the Ohio River. As deindustrialization hit Pittsburgh in the 1960s, its "riverfront [was] left abandoned, underused, and environmentally compromised" (Pittsburgh City Council, 1998, as cited in St. Onge, 2010). Even before this economic shift happened, people reckoned with the idea of connecting the riverfront to Downtown, with Frederick Law Olmsted's landscape firm proposing a link between Downtown parks and the rivers' edge in 1911 (Moffat, 2002, p. 10). Since then, there has been a continual effort to bring more people to the riverfront. The City of Pittsburgh and other organizations, including Riverlife, a nonprofit centered on redeveloping the city's riverfront, are developing projects to achieve this goal.

In 2001, Riverlife released a vision plan describing the redevelopment of the Downtown riverfronts and announcing a vision to create "a great urban river park" (Figure 21) (Riverlife Task Force, 2001). That vision has become a reality, with improvements ongoing. The "loop" is now 15 miles long, and efforts are being made to address the gaps still in need of redevelopment along the riverfront. These investments have brought economic benefits, stimulating billions in riverfront development activity since 2001 (Riverlife, 2015). Property values have also increased in the South Side, North Shore, and Central Business District, and tax revenue is projected to be between \$6.8 million and \$15.6 million annually (Riverlife, 2015).

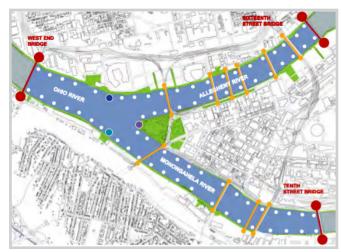


Figure 21: Extent of vision for Three Rivers Park (Source: Riverlife Task Force, 2001)

The City of Pittsburgh has helped redevelop the riverfront by adding a zoning overlay district to address the lack of cohesion and zoning barriers to mixed-use (re)development while also protecting existing entities that require riverfront access (Department of City Planning, n.d.). New zoning sub-districts were later proposed (Planning Commission of the City of Pittsburgh, 2018). Changes to the zoning code have encouraged development and redevelopment while also focusing on mixed-use spaces, public safety, and sustainability.

The City of Pittsburgh is also pursuing TOD projects, with involvement from Pittsburgh Regional Transit (PRT) and the Urban Redevelopment Authority of Pittsburgh (URA). A great example of TOD in Pittsburgh is East Liberty Station (Figures 22 and 23). This project included new pedestrian pathways that helped create smaller, more walkable blocks, bus station/shelter improvements, a new pedestrian bridge, a multimodal transit center, a shared-use parking garage, a bike garage, hundreds of multifamily housing units, and more than 40,000 square feet of retail space (PAAC, 2019; Urban Redevelopment Authority of Pittsburgh (URA, n.d.). The investment and redevelopment of the area has had beneficial impacts for its residents, visitors, and transit riders. After reopening in 2015, 361 new jobs were created, 360 housing units were developed, and transit ridership increased almost six percent (URA, n.d.).

However, PRT has also stated that there have been negative results from this development. This includes affordability issues, not enough green space, large building scale, "generic building character," and minimal outdoor space (PAAC, 2019). While the city is focused on increasing public transit ridership, they are also being mindful of how certain development projects can cause displacement or gentrification. Plans need to be conscious of the community that they are being built for. Pittsburgh is progressing with its riverfront and transit-oriented development, but it's important to keep in mind that there can still be challenges of equity, affordability, and sustainability.



Figure 22: East Liberty Station Before and After TOD Project (Source: PAAC, 2019)



Figure 23: Pittsburgh East Liberty Station (Source: Urban Redevelopment Authority of Pittsburgh, n.d.)

St. Louis, Missouri

Another medium-sized city with a downtown situated along the riverfront, St. Louis is investing heavily in the "fan-village" concept, which has been gathering steam across all major sports franchises. Busch Stadium, located less than a ½ mile from the Mississippi River, is home to the Cardinals, the city's beloved Major League Baseball team and one of only two big professional sports franchises located in the city. St. Louis was one of the early adopters of the fan-village concept, with initial planning and development discussions taking place in the late 1990s. After years of planning, ground was finally broken for Downtown's Ballpark Village in 2013. Phase 1 of Ballpark Village opened in 2014, which included bars, restaurants, and an entertainment area adjacent to the stadium. The second phase was much greater in terms of scope and costs, including a 29-story residential high rise building in addition to a hotel, an office building, a fitness center, retail shopping, and more bars and restaurants. Phase 3 of the project is currently in the early planning stages, but the belief is that more residential development will be coming to the area soon (KSDK, 2021).



Proposed Stadium Station Area at St. Louis' Ballpark Village (Source: H3 Studio, 2013)

One of the key components to the development of St. Louis' Ballpark Village is its vicinity to the Stadium Station MetroLink stop. The Stadium Station Area Plan was created in 2013 and aims to strengthen the connections between Stadium Station, Busch Stadium, Stadium Village, and the rest of Downtown St. Louis. The Stadium Station Plan consists of TOD that includes new mixed-use, residential, retail, and office buildings. Additional improvements to the public right-of-way include intersection improvements, streetscape amenities, bike lanes, greenspace, and trails (OneSTL, 2013). Infill development of the many parking lots that take up space Downtown will improve the connectivity and bring economic benefit to the city, while improving the overall gameday experience for fans and improving access to downtown and its amenities via public transit. This project is also a great example of infill development in a downtown district which features the stadium as the main attraction and seeks to build around this asset while utilizing public transit, a similar situation as Cleveland's development around Browns Stadium.

Buffalo, New York

Buffalo, New York, has plans in the works to utilize and embrace TOD around their Downtown waterfront. With only 13 stations and 6.4 miles of rail line, Buffalo's light rail system still has plenty of room to grow. Common themes in Buffalo's redevelopment proposals are increased waterfront access, reclamation of former industrial areas for safe public use, increased investment in public transit and TOD, and increased safety/walkability of Downtown.



Proposed Redevelopment of Buffalo's DLW Station (Source: Savarino Companies, 2022)

One of the most significant projects currently underway is the redevelopment of Downtown Buffalo's Canalside District, a family-friendly area alongside the Erie Canal which hosts various events and activities throughout the year. A key piece to this project is the renovation and redevelopment of the Delaware, Lackawanna, and Western (DLW) Railroad Terminal. This station served the DLW industrial rail line until 1979, then was used as a maintenance and storage yard for several years (Forgotten Buffalo, 2020). The new terminal is slated to open in 2024, with phase 1 of the project including a new light rail station. Phase 2 of the project, still in the planning phase, could create a 2nd floor observation deck overlooking the Buffalo River, a pedestrian skywalk bridge which connects to the KeyBank Center across the street, in addition to an event/concert space. The current total cost of this project is roughly \$87 million (WGRZ, 2023).

Detroit, Michigan

The City of Detroit, located along the Detroit River which flows from Lake St. Clair to Lake Erie, has sought to revitalize its riverfront communities through waterfront and transit-oriented development. Industrial and urban development throughout the years have negatively impacted the Detroit River and the surrounding community. The river "was one of the most polluted rivers in North America" by the 1960s due to unsustainable development (Hartig & Wallace, 2015). The East Riverfront project, aimed at catalyzing the riverfront, is one phase of the Detroit Riverwalk project (Hartig & Wallace, 2015). The non-profit Detroit Riverfront Conservancy has been leading the 3.5-mile-long plan to connect Huntington Place and Bell Isle through "a revitalized riverfront, new parks, and trails" (McMurtrie, 2023). The plan was completed in October 2023, having been 20 years in the making (McMurtrie, 2023).

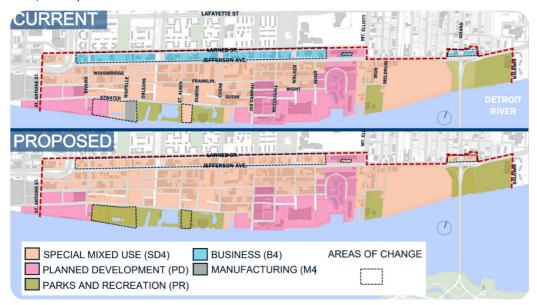


Figure 24: 2019 East Riverfront's Zoning Changes (Source: City of Detroit, 2019)

To incentivize redevelopment, Detroit updated zoning at select areas on the East Riverfront to remove Business and Manufacturing zoning districts, replacing them with Special Mixed Use and Parks and Recreation districts (Figure 24) (City of Detroit, 2019). This provided increased access to the riverfront and encouraged new investment and activity in the area. The Detroit riverfront is now said to welcome around 3.5 million people every year (McMurtrie, 2023). In terms of economic impact, the Riverwalk has stimulated "\$1.5 billion in total public and private sector investment" and there could be "an additional \$700 – 950 million investment in the future" (CSL International, 2013, as cited in Hartig & Wallace, 2015). The city's efforts to create a more vibrant and connected riverfront, while not specifically TOD-focused, may nonetheless hold lessons for Cleveland's waterfront redevelopment ambitions.

Birmingham, Alabama

Birmingham's multi-modal transit facility is an example of a project that has connected multiple modes of transportation and contributed to reinvigorating a city's downtown area. The new facility opened in March 2018 and includes the Amtrak/Greyhound terminal and bus transfer center as well as street-level retail, community meeting rooms, and a police sub-station. There are future plans for other transit modes, including streetcars, high-speed rail, and commuter rail (Byington, 2020; Niles Bolton Associates, n.d.).



Birmingham's Intermodal Facility (Source: Niles Bolton Associates, n.d.)

Near the facility, a food market called Birmingham Central Market opened in 2019 at Birmingham Jefferson County Transit Authority's Central Station (Birmingham Times, 2019). A food market can have beneficial impacts for people who live in the area by making healthy foods more accessible. In Birmingham, around 70% of its residents live in areas designated as food deserts by the US Department of Agriculture (Birmingham Times, 2019). Birmingham's Intermodal Facility is an example of how transit stations can be used for more than just transit activities. This can provide insight into Cleveland's potential multimodal station and how it can also include programming focused on equity and healthy living.



Engagement

Community Survey

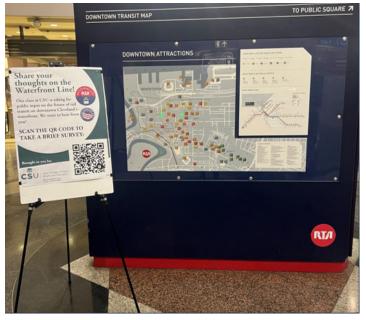
Process

Community surveys were designed and reviewed by the planning studio class and, along with the informed consent forms, were approved by the Cleveland State University Institutional Review Board. Online surveys and in person sessions were utilized to gather community input. The full survey can be viewed in Appendix B.

Online Survey: Qualtrics was the web survey platform used to administer the survey. Flyers with a QR code were handed out to the public, along with being shared through social media, new sletters, and articles.

In Person Sessions: In order to reach out to a further audience, in person sessions were conducted at the RTA Station in Tower City, the Cleveland Central Library, West Side Market, and Public Square. Two students were at a location for two hours, with the sessions taking place between March 10, 2024, and March 20, 2024. Flyers were available for the public, along with the chance to fill out a printed version of the survey.

Before starting the survey, respondents were required to verify that they consent to participating in the survey, are at least 18 years old, and understand that if they have any questions about their rights as a research subject, they can contact the Cleveland State University Institutional Review Board. Information was also given about the project's goal and how to contact the class instructors, Dr. Hilde and Mr. Kastelic. Respondents were made aware that participation is voluntary, and responses are anonymous.

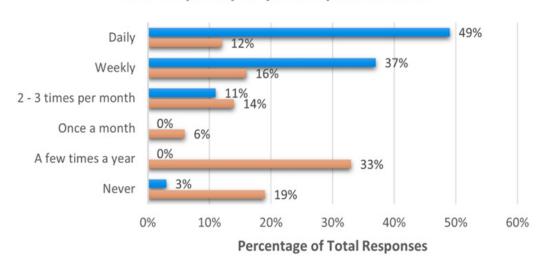


Preface to Results

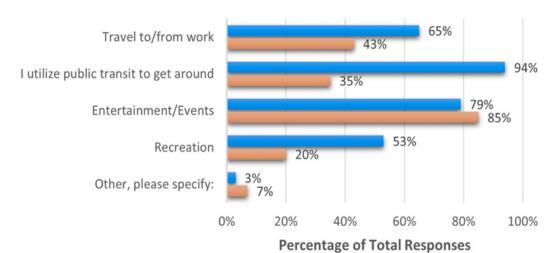
Community input is an important and vital aspect within a planning process. Results were used to inform our recommendations for the Waterfront Line and surrounding development. In conjunction with the responses, we need to acknowledge the demographic characteristics of the survey participants. In total, 371 survey responses were collected. 81% of respondents identify as white while 11% identify as Black or African American. Additionally, 40% of respondents stated that their household income is \$100,000 or more and 24% stated their household income is between \$60,000 and \$100,000. 33% of total responses were between the ages of 25 and 34 years and 23% were between 35 and 44 years. This is significant to note since based on data from the Pew Research Center, "Americans who are lower-income, black or Hispanic, immigrants or under 50 are especially likely to use public transportation on a regular basis" (Anderson, 2016). Although the survey results are still valuable within this planning process, it is important to note that the sample is not entirely representative of the demographics of transit riders, or those most likely to utilize the Rail Line.

Survey Results

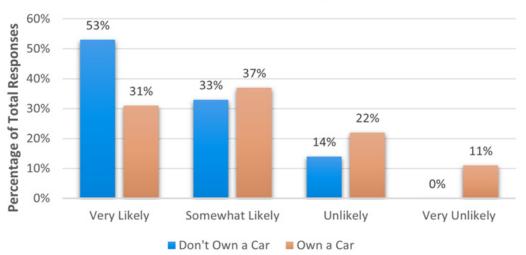
How frequently do you use public transit?



For what purposes do you utilize public transit?

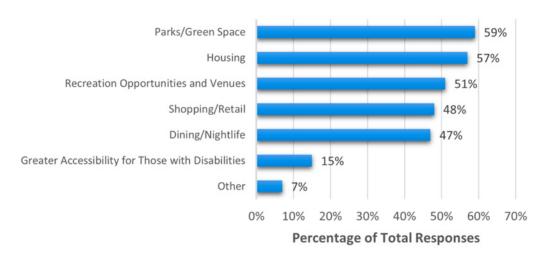


What is the likelihood that you would use the WFL if it resumed operations on a regular basis?

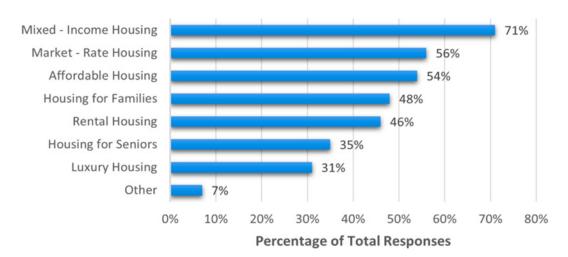


Survey Results

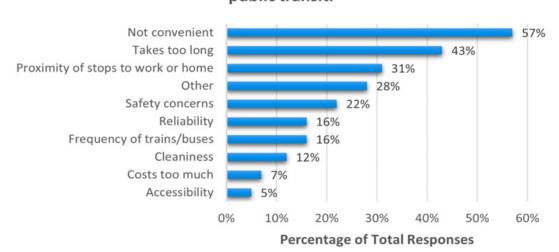
What are the top three amenities that you think are needed for the waterfront and WFL area?



What housing options would you like to see near the WFL?



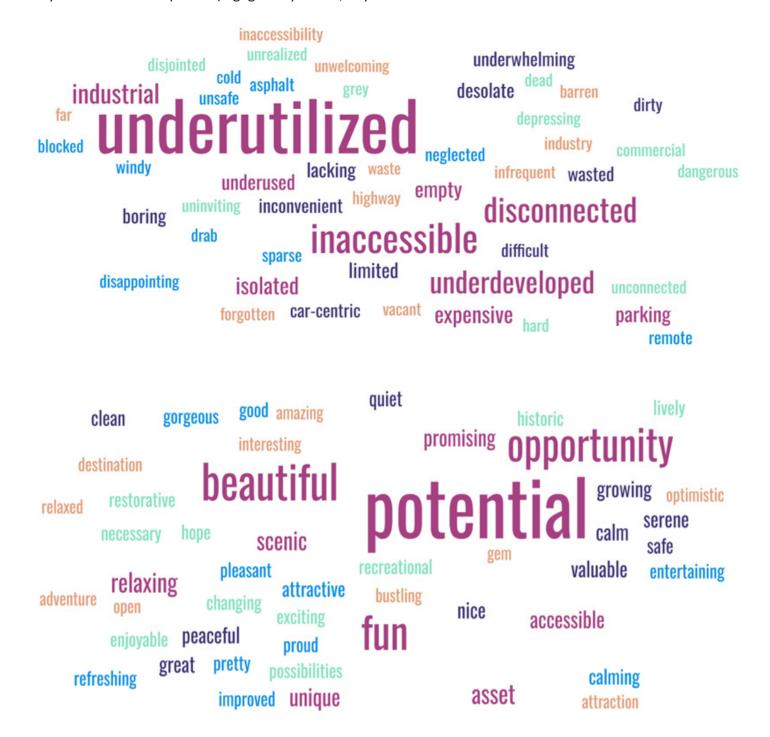
Please identify top three reasons why you do not use public transit.



Common Themes

Common themes from survey participants' responses include an emphasis on the need for an extension of the Waterfront Line, either to the east or making it a loop downtown. Right now, some participants do not use the Line because they can walk or bike to their destination in a short amount of time. The transit line is not viewed as the most convenient form of transportation. There were also comments supporting more green space, housing, density, and daily amenities development (e.g. grocery stores, day

care, medical offices) near the line. Participants also mentioned the need for social infrastructure, public third places, public art, transit station/stop improvements, and better marketing/wayfinding. Social infrastructure is "a set of physical places and organizations that shape our interactions" and helps build social interactions and relationships, while third places are defined as those that "facilitate social interaction outside the people you live or work with" (Florida, 2018; Liddy, 2023).



Stakeholder Interviews

In addition to hosting a public survey, we also expanded community engagement outreach to include those that we've identified as key stakeholders in our process and recommendations. These stakeholders include of course the RTA, the long list of businesses operating immediately adjacent to the Waterfront Line, and those most impacted by ridership, government agencies and regulatory bodies impacting policy and funding in this area, and the community development advocates most passionate about uplifting the Flats and waterfront areas.

We were ultimately able to connect with and interview 13 stakeholders representing a cross-section of these varied perspectives and interests. We asked what they felt were the greatest opportunities for growth and development, what they expected the greatest hurdles would be, how they envisioned the 10-year future of Cleveland's waterfront, and what creative ideas they had for repurposing the Muni Lot. From the responses, five common themes emerged:

- The importance of multi-model access and connectivity
- 2. Public perception of public transit
- 3. The need for consistent density
- **4.** The need for more open public spaces
- **5.** And the importance of cooperation and workshare between government agencies, private stakeholders and community partners

We are happy to find that these themes and the comments that comprise them generally aligned with the responses we received from the public survey process. This provides added confidence that any recommendation we make based on these responses represents both the general public as well as our government and private sector stakeholders.





Recommendations

Land Use & Zoning

Introducing Form Based Code (FBC)

Many cities across the US are embracing zoning reform, with a focus on improving predictably of redevelopment and enhancing connections via walking, biking, and public transit. Because the current zoning code in Cleveland was adopted in 1929 and has been subsequently revised for the past nearly 100 years, it has become harder to interpret. It has also hampered the development of the building typologies that cities traditionally had; namely mixed-use development, with storefronts on the ground floor and residences on the upper levels. Additionally, the current zoning code has restricted housing typologies and created car-centric built environments that are not accessible.

According to the Form Based Codes Institute (FBCI), Form Based Code is defined as:

"Land development regulation that fosters predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. A form-based code is a regulation, not a mere guideline, adopted into city, town, or county law."

In short, Form Based Code regulates for creating compatible and people-centered urban design, rather than solely based on use of a property.

Conventional Zoning

Density use, FAR (floor area ratio), setbacks, parking requirements, maximum building heights specified



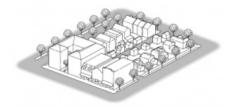
Zoning Design Guidelines

Conventional zoning requirements, plus frequency of openings and surface articulation specified



Form-Based Codes

Street and building types (or mix of types), build-to lines, number of floors, and percentage of built site frontage specified.



Characteristics of different zoning codes. (Source: StackSource Blog)

Cleveland's Form Based Code

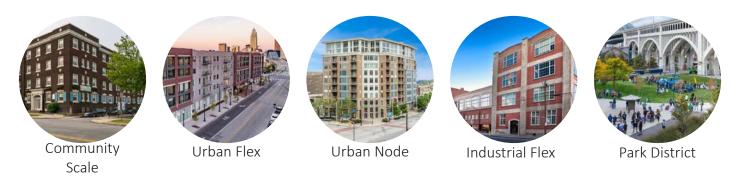
Cleveland's limited pilot for Form Based Code is intended to help set up Cleveland's future as a more sustainable city with new urban development. The pilot is being tested in four neighborhoods: Detroit Shoreway, two areas along Opportunity Corridor, and Hough. The City Planning Commission had a criterion for selecting these pilot areas; "The first was to pick areas that were adjacent to other large investments... the second was an area with a diverse typology of buildings and uses" (The Land Code, n.d.). The goal of these pilot geographies is to test how the new code works against the old code, and if successful, establish the code in other areas of the city as neighborhood plans are created.

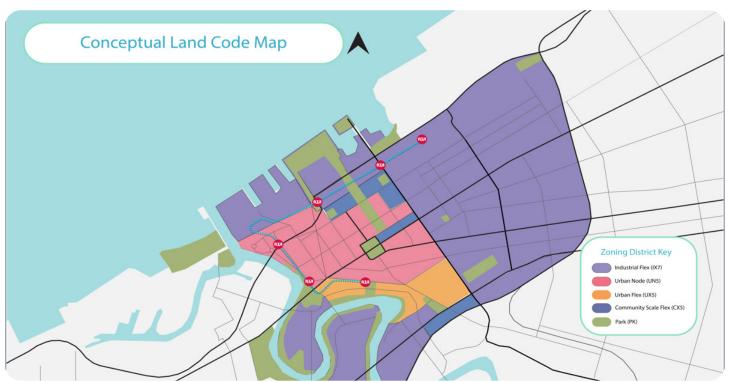
Implementing Form Based Code

After determining that the existing zoning districts within our study area were not compatible with proposed transit-oriented development, a discussion with the City of Cleveland and an analysis of the Form-Based Code occurred. It was determined that a comprehensive re-zone of the whole subject site, which encompasses the Waterfront Line and a half a mile around each station, was appropriate.

The way this was determined was by performing a thorough analysis of the existing conditions of the subject area. From this, we were able to determine the needs of the areas surrounding the Waterfront Line stations and what development can be used as a catalyst to increase ridership and re-open the Waterfront Line.

The placement of each of these districts was decided based on what land uses currently exist, what type of re-development we are trying to achieve, and what regulations seemed most appropriate for the areas. See Appendix C.1 for a fuller description of the proposed zoning districts and allowable uses in each district.





Future Form Based Code Map for the Study Area. Created by 17th Street Studios

Future Land Use

Future land use for the waterfront is envisioned as a densely populated, mixed-use neighborhood with a variety of amenities needed to live, work, and play in the area. By consolidating parking facilities into strategically located garages, surface parking lots will become expendable and be converted to a combination of housing, retail, and green space. This will improve the accessibility of the area by enabling different housing typologies, such as apartments, condos, and townhouses, to be constructed. Additionally, by continuing to convert the oversaturated office market into opportunities to live Downtown and near the waterfront, demand for amenities and green space will grow. Creating diverse housing typologies will meet the needs of more people by creating affordable options within the area as there is increased residential demand.

Deploying a "grey to green" strategy will also improve the waterfront area's livability by expanding access to green space and amenities that will improve demand for residential. Greens space improvements should be prioritized on areas fronting the river and the lake, but creating accessible and comfortable connections to these spaces will be important as well. One of the biggest existing issues is the lack of residential density and amenities near the Waterfront Line stations. By creating neighborhood spaces that feel welcoming to all, the area will thrive and transit facilities like the Waterfront Line will naturally become more vital and utilized. The Waterfront Line will become a key component of the accessibility and livability of the area by enabling a car-free or car-light lifestyle, where residents can utilize public transit to meet their needs.



Future Land Use Map. Created by 17th Street Studios

Future Development

The fundamental goal of development along the Waterfront Line is to build out enough residential density to support regular, efficient light rail transit service. To that purpose, intensive infill of mixed-income housing and neighborhood service retail can support equitable community growth and host impactful green infrastructure. Each zone, as designed, brings into focus a challenge to such commercial and residential development that plagues the whole of the Waterfront Line study area: excessive amounts of land dedicated to impermeable surface parking, nearly prohibitive costs of new construction and financing, as well as natural and built barriers to site access. Transit-Oriented Development (TOD) and Transportation Demand Management (TDM) are two principal frameworks that can help structure the approaches taken to meet these challenges. For each zone, we provide a development concept that articulates these challenges and explores a possible response that stems from TOD and TDM rationale.

Ultimately, long-term, phased planning that invests in the expanded suitability of Waterfront Line properties, creative finance strategies, and the will to execute boldly designed capital improvement projects will facilitate the access and livability that can build out a desirable density of transit-active residents.

TOD and TDM Guidance

Of the two principal frameworks guiding this issue, TOD is more passive regarding the market dynamics of surface parking than TDM, which has been formulated in a later time's sentiment of "right-size parking." Conventional TOD wisdom explains that surface parking exists where land values are too low to warrant a profitable and more intense development pattern. This rationale argues that as a general TOD plan is applied to the area, land values will naturally rise and make lots more suitable for more intensive uses that developers will capitalize upon. TOD advises that these lots should be "reduced through redevelopment and the construction of structured parking facilities" (Calthorpe, 1990). In a more proactive fashion, TDM promotes the elimination of parking requirements for both new and adaptive reuse projects. This should help to lower the total costs of design and construction for developers with properties that are still relatively low in value. TDM strategies aim to curtail any added future growth of surface parking and encourage the redevelopment of vacant surface space in the near-term.



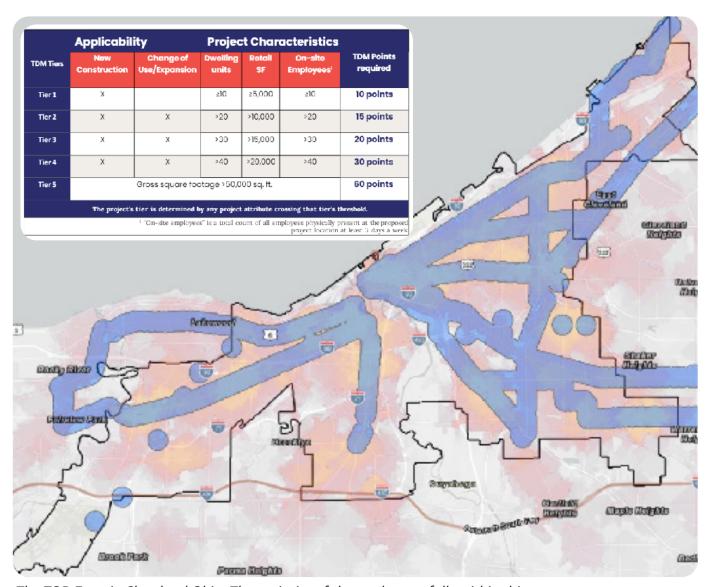
TOD Guidance. (Source: Cuyahoga County Planning)



TDM Examples. (Source: CATMA)

Cleveland recently passed TDM legislation that will impact future development in the area. Any new construction or renovation over 5000 square feet will need to provide options for alternative modes of transportation if it falls within a 1/4 mile radius of high frequency transit. Project proposals are scored based on a menu of items that must equal or exceed the tier it falls under.

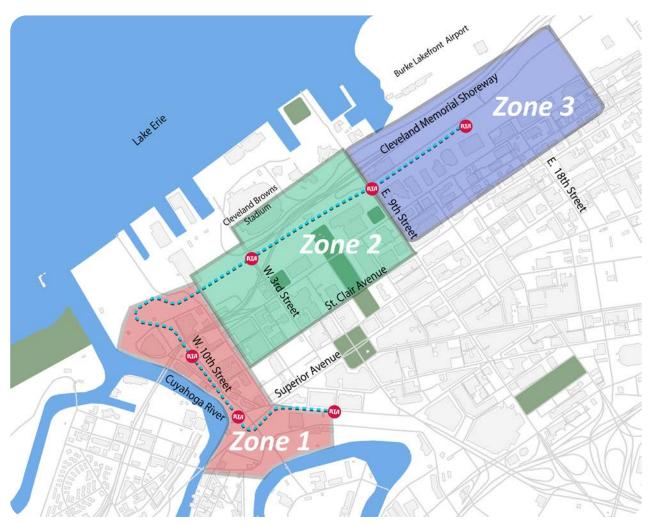
The legislation is intended to incentivize new development not to over-build parking, and make alternative modes of transportation more attractive. Any new construction in the area would likely be larger than 5000 sq. feet and thus would need to comply with the TDM Program. Examples of menu items include indoor bike parking, offering transit passes to residents at a reduced rate, and unbundling parking from monthly rents.



The TOD Zone in Cleveland Ohio. The majority of the study area falls within this zone. (Source: City of Cleveland Planning Commission)

Zone Conceptualization

To present our recommendations, the project area has been divided into three zones. Each of these zones can be thought of as a different typology of existing conditions and development opportunities. The map below shows these zones, which will be presented individually and in more detail.



Overview of Zones for Reccomendations. Created by 17th Street Studios

Zone 1

Zone 1 encompasses the Cuyahoga River to the east and West 9th Street to the west. Notable areas include Flats East Bank, Settlers Landing Park, and the Port Authority property.

Zone 2

Zone 2 begins at West 9th Street from the west and extends to East 9th Street. It includes North Coast Harbor which is home to Cleveland Browns Stadium, The Rock Hall, and Great Lakes Science Center.

Zone 3

Zone 3 starts at East 9th Street and covers the area east of Downtown. It includes the Municipal Lot and parts of Asiatown.

Physical Design & Public Realm

Current Wayfinding & Branding

The Waterfront Line has an established logo and brand that is located throughout the study area. The current logo incorporates the GCRTA typeface, colors, and "RTA" text symbol that is recognizable from all buses, light rail, and heavy rail. The Waterfront Line logo is unique by incorporating an image of a light-rail train and a blue wave that represents the water. The distinct logo creates a sense of specialty service given the unique branding and pole signs at the stations.





Existing RTA Waterfront Line Branding

Destination Cleveland currently has entertainment wayfinding boards to indicate major points of interest in Downtown Cleveland. The boards are near all the stations along the Waterfront Line, providing some orientation of tourist locations and landmarks. Currently these signs focus on an area that is approximately 1/4- mile from the station. While useful, the project team is proposing repurposing these signs indicating walking time and distance to key destinations. Taking into consideration the topographical constraints, walking times can vary drastically. The proposed entertainment signs will indicate the number of minutes from the Waterfront Line station to the point of interest. The proposed entertainment signs are to focus on the immediate points of interest within walking distance of the station. Given current conditions, the Flats East Bank Station and West 3rd Street have current opportunities to indicate average walk time to restaurants, parks and green spaces, museums, and recreational activities.



Existing North Coast Harbor branding. (Source: Guide Studio)

Proposed Wayfinding

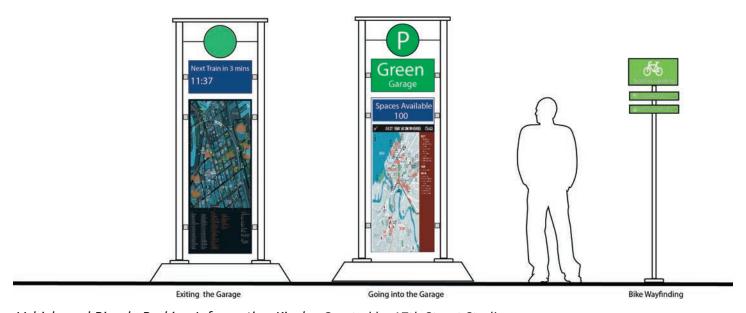
To build off current wayfinding near all stations, the project team is proposing additional wayfinding to create a sense of place along the Waterfront Line. When navigating areas around the Waterfront Line, it is often confusing and difficult to orient the spatial distance between known attractions. The below map indicates the proposed locations for future wayfinding to the Waterfront Line. The proposed wayfinding raises awareness of the Waterfront Line within the central business district. Specifically, at major connectors of West 3rd Street, East 9th Street, and Carter Road there can be more guidance to the light-rail line.



Proposed locations for new wayfinding and public art. Created by 17th Street Studios

The proposed wayfinding family encompasses a variety of elements:

- 1. **Historical Markers:** These markers will be strategically placed throughout the study area to educate visitors about the city's industrial past, cultural heritage, and the significance of the waterfront itself.
- 2. **Information and Map Signs**: These signs will be strategically positioned to provide clear directions and information about the surrounding area. They will prominently display anchor locations like museums, restaurants, and scenic viewpoints, along with other key points of interest.

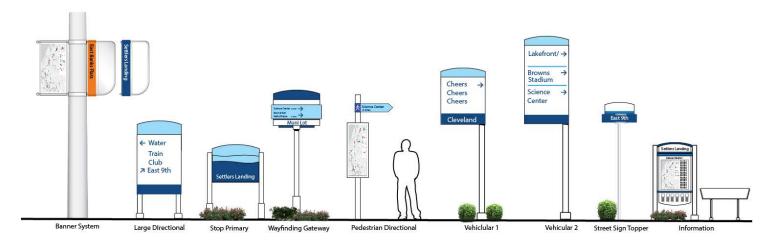


Vehicle and Bicycle Parking Information Kiosks. Created by 17th Street Studios

- 3. **Digital Parking Garage Signage**: A large digital sign will be installed at the proposed "green" parking This sign will offer real-time information on available parking spaces and surrounding area attractions. One side will be visible to arriving visitors, displaying details like restaurants, bars, and nearby attractions like Canal Basin Park. The other side, facing into the garage, will provide directions to key destinations and showcase upcoming waterfront events or enticing restaurant menus, promoting further exploration. This sign will also integrate with live train updates for the Waterfront Line.
- 4. **Bike Signage**: With biking culture becoming more adamant among residents of Cleveland, the signs prominently display where bike set zones and directions. These directions provide information on the surrounding attractions.
- 5. **Train Station Signage:** Large signs displaying which station riders are entering and exiting at.
- 6. **Environmental Integration**: The design of the wayfinding family will incorporate the surrounding colors of the environment, fostering a sense of cohesion and connection with the waterfront itself.

The designed wayfinding family is meant to complement the existing signage infrastructure, including the prominent RTA logo. These new signs are not intended to replace existing systems, but rather to enhance the overall user experience by providing a more comprehensive and user-friendly wayfinding network.

This expanded wayfinding system goes beyond traditional signage, utilizing diverse elements to create a more engaging and informative experience for all visitors navigating the waterfront area.



Wayfinding guide

Proposed Wayfinding by Zone

Zone 1: Connected to the Green Garage

As visitors arrive at Zone 1, a key focus of the wayfinding system will be surrounding the proposed "green" parking garage and facilitating a smooth connection to the surrounding waterfront area. Upon approaching the garage, a large digital sign will greet them, acting as a central hub for information and guidance. The wayfinding system in Zone 1 goes beyond this central digital sign. Complementary signage, strategically placed throughout the area, will reinforce directions to the garage and key destinations. This cohesive network will ensure a seamless arrival experience for visitors, encouraging them to explore and discover the treasures that await them beyond the parking lot.

Zone 2: Signage on West 3rd and West 3rd Station

The proposed way-finding family will complement the plan of transforming the car-centric environment around Wets 3rd Street and the West 3rd RTA station into a more enjoyable and accessible area for pedestrians.

Zone 3: Signage for Rapid Transit Stations and connection to surrounding Anchor Locations

Zone 3 wayfinding focuses on enhancing visitor orientation and navigation within the heart of the lakefront district. Here, the wayfinding family will play a critical role in seamlessly connecting visitors to key destinations like the Great Lakes Science Center, the Rock and Roll Hall of Fame, and the planned plaza adjacent to the proposed shipping container park.

Signage will be strategically placed near RTA stations, providing clear and concise directions to these anchor locations. Information and map signs will prominently display the destinations, utilizing consistent color schemes and visual elements to ensure immediate recognition within the wayfinding family. This visual consistency will guide visitors effortlessly through the area, promoting a sense of cohesion and ease of navigation.

Public Art

Public art can serve as an aesthetic feature and placemaking tool for the City of Cleveland and GCRTA. Throughout the study area, there are opportunities near the stations to beautify blank walls and create a sense of place. There are three key locations that could utilize art and wayfinding.



1) Along the west side of the Waterfront Line, near Flats East Bank, the backside of buildings directly face the Waterfront Line. Through collaboration with the building owners a new mural could be created that highlights the Waterfront Line. Space near Old River Road and the Waterfront Line could be ideal for a living green wall to complement green infrastructure and design.



2) On West 3rd underneath the Cleveland Shoreway Memorial, there is an opportunity to feature a local artist and highlight waterfront access.



3) The North Coast station on East 9th Street draws attention for its architecture and design. To make this a visual attraction that is recognizable, LED lights that change colors and mimic water motion could raise awareness of the access to transit and be an iconic building near a popular tourist area.



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The gateways proposed at either end of the station are an opportunity to boldly welcome individuals to the Waterfront Line. The use of a physical land marker or public art could highlight the beginning and end of the line. Some examples may include pavement paint that reflects the sun to reduce the urban heat island or signature lighting features specific to the waterfront.

Connectivity

Reviving Our Waterfront Line is a plan to support a connected and vibrant downtown Cleveland, where public access to the waterfront is genuinely prioritized and equitably delivered. A fully operational Waterfront Line that is integrated with current transit infrastructure, as well as future mobility connections generated by major projects such as the North Coast Master Plan, can play a critical role in strengthening cityto-shore connectivity. By creating stronger cohesion and connection between waterfront neighborhoods and designing safer streets for pedestrians and cyclists, our plan will enhance the area's livability and help attract new residents and visitors. An environment that is easy and safe to navigate without the use of a car will support greater transit ridership, including the Waterfront Line as well as other multimodal options. Just as a rising tide lifts all boats, a TOD-supported Waterfront Line will integrate with and complement Downtown's assortment of mobility and micromobility options.

The Multimodal Connectivity map highlights existing light rail, bus and trail infrastructure in and around the full project area, in addition to new connections already planned by the City. Intercity rail, also pictured, will likely benefit from a multimodal consolidation of services as a part of the North Coast Master Plan. There are two critical gaps in the network: 1) weak connectivity between the riverfront and the Downtown lakefront and 2) insufficient multimodal options along the East 9th Street corridor to the lakefront.

These gaps served as focal points for our exploration of opportunities to foster active mobility corridors. Several multimodal trails and paths lead into the area but end just at Downtown's edge, limiting the availability of safe, connected routes for pedestrians and cyclists. Though there are official plans to build more connections, including the Superior Midway and the North Marginal Trail, our plan proposes new trail



Current area-wide connectivity, including planned infrastructure. Created by 17th Street Studios

segments to bridge existing gaps. It also recommends road redesigns, expanded bus and shuttle/trolley service and intersection improvements to enhance safety and convenience for multimodal users. We describe these in more detail in the sections outlining Zone-specific recommendations.



Proposed future trail connections, road redesigns and intersection improvements. Created by 17th Street Studios

Network Integration

There are additional, longer-term opportunities to better integrate the Waterfront Line into the larger GCRTA network. We assess, based on available research and our interviews with stakeholders, that the short length of the Waterfront Line presents a challenge to its overall viability. Many of its stations are not only within walking distance of one another but are also within a reasonable walkshed of the Public Square/Tower City transit hub. Transferring to the Waterfront Line simply does not make sense for many people travelling into Downtown via the Red Line or bus.

17th Street Studios conceptually explored two extension scenarios for the Waterfront Line to improve its utility. Extending the light rail system would be a longer-term initiative that would require intensive study of cost, feasibility and equity considerations. We hypothesized that two scenarios were worth some initial examination: 1) an eastward extension to the future site of the Metroparks' Cleveland Harbor Eastern Embayment Resilience Strategy (CHEERS) project, and 2) a Waterfront loop that connects Downtown, the lakefront, Campus District, and AsiaTown.

Extending the line eastward could demonstrate its true connective potential by bolstering the City's efforts to restore and transform waterfront access to eastside neighborhoods. Utilizing the existing heavy rail right-ofway, the expanded line would reach into the historically marginalized St. Clair Superior and Goodrich-Kirtland Park communities; reconfigured bus lines could build connections to the line from neighborhoods just beyond, such as Hough. Alternatively, a Waterfront Line loop would serve a predominantly Downtown crowd, with sources of additional ridership likely to include students and staff members from CSU and Tri-C, other residents in the city's core, and the downtown workforce. A GCRTA study in 2000 determined that constructing such a loop would be feasible, and some local stakeholder groups have continued to press for this option. In the shorter term, a reactivated Waterfront Line could connect to Downtown destinations via new bus connections and serve as a cheaper and more nimble test for the viability of a light-rail loop.





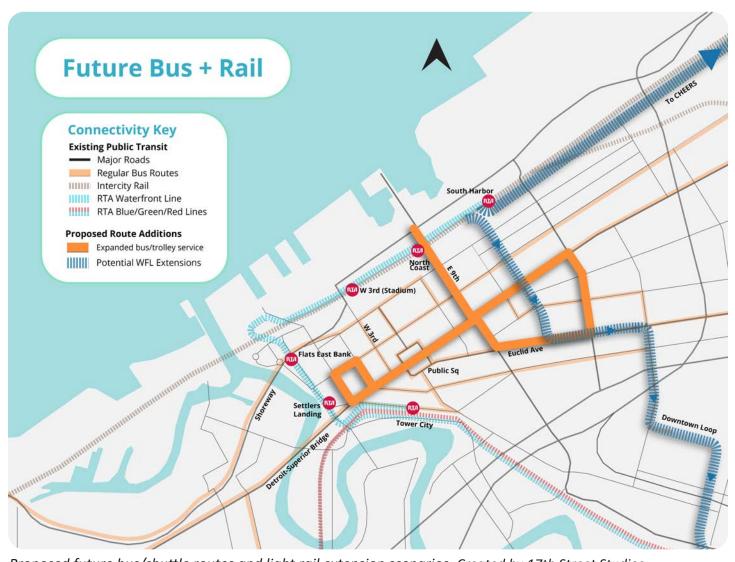
Multi-use trails are popular for recreation and create new connections (Source: NPS)



Seperated bike facilities provide a safe and convienent way for people on bikes to access destinations (Source: Alta Planning + Design)

Running trolley service down East 9th Street could be an effective test to determine demand for service to the Waterfront (Source: GCRTA) Our project team concluded that the two primary extension scenarios denoted in Figure 5 are not justifiable under current conditions.

Looking at the longer term, we do assess that more ideal future conditions are not only possible but are already being planned. An extension makes sense if paired with 1) other major development hubs coming online, including the North Coast Master Plan, Bedrock's Riverfront Master Plan, CHEERS, and other new projects, plus 2) intensive TOD infill along existing Waterfront Line stations. Increased demand and ridership resulting from these combined initiatives would create more ideal future conditions for either extension scenario.



Proposed future bus/shuttle routes and light rail extension scenarios. Created by 17th Street Studios

Park Development & Stormwater Capture

Across the study area, parks and green street corridors can support stormwater capture and ecosystem habitat as species move from one environment into the next. Innovative stormwater infrastructure transforms existing green spaces into destinations for exploration, discovery and wonder. Some look to Morgana Bluffs Nature Preserve as inspiration – a revitalized brownfield in the heart of Slavic Village that supports an emergent wet land and pollinator meadow that was once the site of Woolen Mills (West Creek Conservancy, 2018). Another example, the Cozad-Bates House Green Infrastructure Project, pays homage to the interpretive center and historical site with medicinal and metaphorical plantings that support soil stabilization (University Circle Inc., n.d.). These sites are sources of inspiration for what is possible along the Waterfront Line.

Development at the Waterfront Line should account for capturing and retaining the first 1" of stormwater onsite – grey water – to be reabsorbed into the groundwater supporting our Lake Erie and Cuyahoga River watersheds. Treatment trains, or more than one green infrastructure treatment developed to work in tandem on a single site, can help to divert stormwater from our combined sewer system back into our gardens. Treatment trains may be simple, functional and appeal to our senses. Green roof tops and living walls watered by gravity-fed irrigation systems are some examples, as are rain gardens that support our natural habitat. For this study's scope, the following future development sites, publicly owned lots and open space were identified as sites where stormwater capture can take place:



Morgana Run Nature Preserve. (Source: Slavic Village Development)

- Canal Basin Park
- Settlers Landing
- The Loop
- West 10th Street
- Flats East Bank
- Old River Road
- Superior Avenue
- East 9th Street

- Alfred Lerner Way
- West 3rd Street
- Lakeside
- Willard Park
- Fort Huntington Park
- Lakefront Municipal Lot



Future Stormwater Capture at the Waterfront Line. Created by 17th Street Studios

Park space should enhance stormwater capture and apply state of the art design and function. Park personnel should be able to guide visitors through educational programs about stormwater retention. One example, Cleveland Metroparks' West Creek Watershed Stewardship Center in Parma does this well. At the watershed center, many of the amenities are hands-on. Outside of the building, simple downspout diverters capture and move stormwater to a basin, then to a tiered hillside. The hillside gradually allows stormwater to be reabsorbed into the earth as it flows downstream to West Creek. Similar strategies can be applied to:

- Irishtown Bend
- Merwin's Wharf
- Settlers Landing

- Canal Basin Park
- Bedrock's Riverfront green space

The following parks and corridors were explored by 17th Street Studios as public places that can support green infrastructure that enhances access to the waterfront and climate resiliency.

- Settlers Landing
- Old River Road
- West 10th Street
- The Loop
- West 3rd Street
- Alfred Lerner Way

- East 9th Street
- Lakeside Avenue
- (Future) Memorial Shoreway Boulevard
- Lakefront Municipal Lot

Zone 1 Recommendations

Connectivity

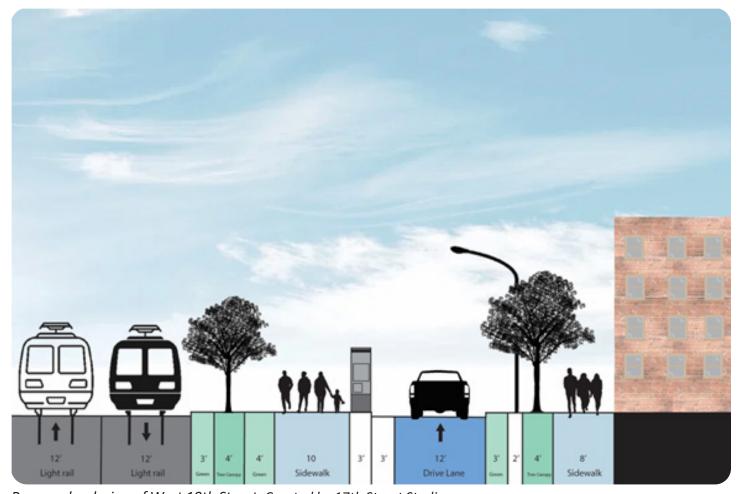
In Zone 1, which includes the Settlers Landing and Flats East Bank stations, bus service and urban trail connections are virtually non-existent. The steep grade change experienced by walkers and cyclists transiting to/from the Flats East riverfront from Downtown is also a challenge.



Wide streets, lackluster public right-of-way infrastructure (i.e. sidewalks and crosswalks), and limited disability access points present opportunities for short- and medium-term improvements. Alongside other public realm challenges – such as sparse seating, poor tree canopy, and underutilized green space – these connectivity issues serve as obstacles to creating neighborhood feel and a sense of cohesion with other Waterfront Line zones.



Existing Conditions at West 10th Street



Proposed redesign of West 10th Street. Created by 17th Street Studios

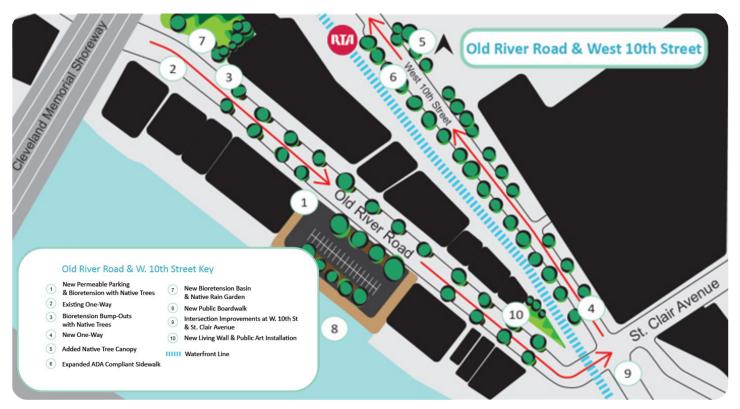
An important road redesign would create a pair of one-way streets at West 10th Street and Old River Road. This would effectively create a loop for car traffic through the Flats East area, potentially reducing congestion while also fostering safer and more pleasant conditions for the public right-ofway. Old River Road is already one-way, as is the northernmost stretch of West 10th Street.

Narrowing the drive lanes will create more sidewalk area for enhanced pedestrian access and green infrastructure. Paired with streetscaping interventions, placing both streets on a road diet aims to enhance safety and encourage alternative travel modes, to include Waterfront Line usage.

Any redesign of these roads should meet the City of Cleveland's Complete & Green Street goals as well. Surface lots along Old River Road can contribute to stormwater capture and lush green space while enhancing public access to the riverfront.



Inspiration for One-Way Street Conversion (Source: Urban Kchoze)



Old River Road Historic District & West 10th Street Site Plan. Created by 17th Street Studios

Other key recommendations include:

- Buildings should face the Waterfront Line stop, which means investing in the front and back facades of buildings that are adjacent to the Waterfront Line.
- Add bump-outs to streets that function as stormwater inlets and shorten crossing distances
- Plant native trees inside the new stormwater bump-outs to increase tree canopy and greening in the right-of-way.
- Widen the sidewalk along West 10th Street so that it is ADA compliant.
- Convert the existing Metroparks parking lot into a pervious parking lot with stormwater inlets and native trees.
- Build a living wall and/or public art at the intersection of Old River Road & West 10th Street.
- Build a public stormwater retention basin in the Old River Road Historic District, connecting the Flats East Bank Station to Old River Road.
- Paint large-scale murals on the retaining walls located at West 10th Street.



Large building
murals can help
bring vibrancy and
excitement to the
district
(Source:
Ponca City News)



Curb bump outs can function as both stormwater capture and traffic calming elements (Source: SF Better Streets)

Green Space

Zone 1 is ready for park and green infrastructure investment as evidenced by the current and future redesign of Canal Basin Park, the extension of the Ohio Erie Canal Towpath and up-and-coming development projects at the northern end of the Old River Road Historic District. The Port of Cleveland's commitment to net zero emissions by 2050 also helps to usher in momentum for innovative capital investment that supports climate action goals. Zone 1 presents a unique opportunity to align stormwater capture and renewable energy with existing green space, surface lots, corridor redesign, and pilot projects that become destinations for the city.







Existing Conditions at Settlers Landing

Investment in Settlers Landing should be sensitive to the redesign of Canal Basin Park, the extension of the Ohio Erie Canal Towpath, and the site's historical significance for Cleveland. It should also create a sense of place where visitors can learn about the park and the importance of the area to the city's history.

Key Recommendations

Design
stormwater
gardens that
are resilient
and become
destinations to
explore

Expand recreational activities

Increase paddler and kayak access to the shore

Settlers Landing should enhance active recreation and relaxation for all ages and abilities.





Settlers Landing Site Plan. Created by 17th Street Studios

Upgrade to ADAcompliant sidewalk and railing repair. Update splash pad where the fountain currently exists.

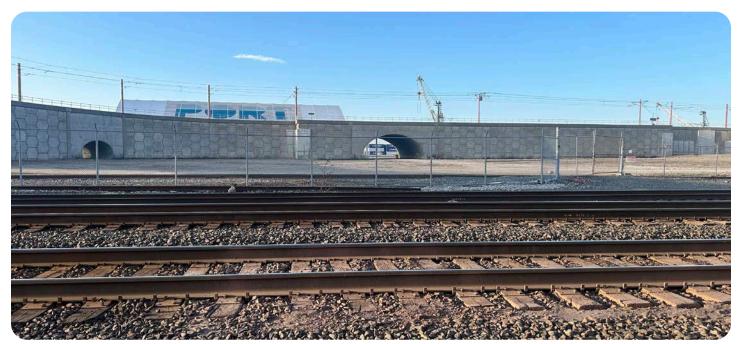
New biodiverse stormwater gardens where lawns exist.

Settlers Landing historical signage.

Feasibility study for paddler and kayak access channel.

Study the condition of the bulkhead.

The Loop

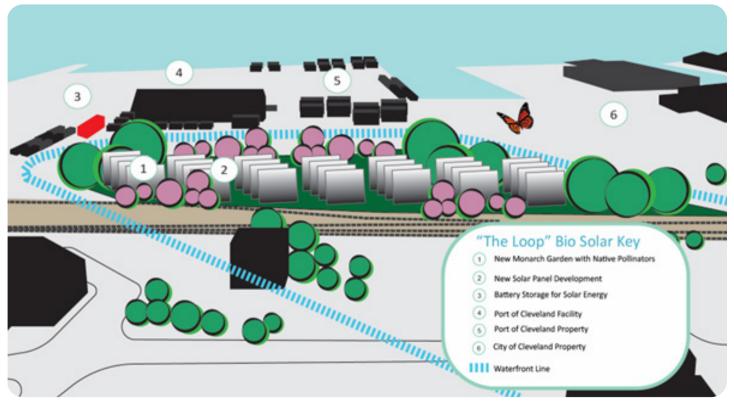


Existing conditions at The Loop

Renewable energy that is sensitive to habitat and migration patterns combines the best of innovation from landscape design, engineering, and ecosystem science. The Port of Cleveland property completely encircled by the Waterfront Line, and endearingly named "The Loop," is one such location that can accommodate creativity that supports Port of Cleveland's Climate Action Plan goal of net zero carbon emissions by 2050. Due to it's isolation, The Loop is unaccommodating to traditional development but presents a unique opportunity to support clean and green energy - a monarch habitat that is sustained by solar-powered stormwater irrigation. Just west of the Port and across the Cuyahoga River is Wendy Park Monarch Migration Station, which supports the annual migration of the Monarch Butterfly over Lake Erie, south to Mexico every year (Cleveland Metroparks, 2024).

Our recommendation for The Loop includes a feasibility & impact study of bio solar that supports monarch migration.

The Loop may accommodate a 1578.9 DC kilowatt system, producing up to 2 million kWh per year (See Appendix C.3; PVWatts Calculator). The 2-acre bio solar habitat may generate enough energy to power 75% use of 320,000 Port of Cleveland facility in addition to its ecological benefits (Elevate Pro-Forma). ROI after 15 years is 61%, with an IRR (internal rate of return) of 4.66%. Energy offloading and community benefits should be considered with the feasibility study.



The Loop Site Plan. Created by 17th Street Studios

"Solar gardens" in Colorado and Massachusetts are examples of agrivoltaics — commercial agriculture supported by solar power — and can show us what is possible when stormwater capture systems are built into solar development. Grey water can be harvested and used to irrigate gardens, crops, and natural habitats. For The Loop, a bio solar park that supports monarch habitat would be the first of its kind for the city.



Inspiration for The Loop Bio Solar Park

Zone 1 Future Development

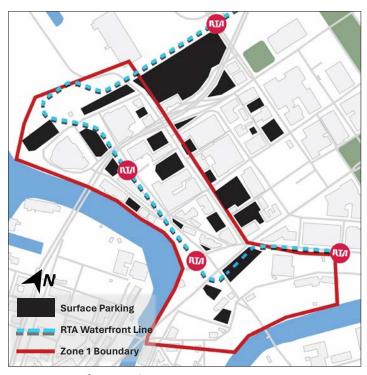
Parking Supply

Zone 1 is arguably more attractive than either Zone 2 or Zone 3 for private investment in mid-to-small scale mixed-use neighborhood redevelopment. Recall that the 10-min walkshed of Zone 1 Waterfront Line stations offer kinder capitalization rates (meaning sooner returns on investment), more rental units at higher average rents, and more retail space with lower vacancy rates than other station walksheds. Zone 1 has far to go to reach the density desired for high efficiency light rail but there is momentum here.

The most visible and imposing challenge for that momentum to continue is the amount and size of surface parking that inundates and surrounds Zone 1. Between the Cuyahoga River and West 3rd Street alone, there are at least 3,774 parking spaces among 25 lots. While this is true of the whole Waterfront Line study area – where an estimated 23% of land within the 1/4-mile buffer of the transit line is presently used as surface parking – it is particularly obstructive in Zone 1. Here, these pockets of asphalt punctuate what could be more continuous mid-rise neighborhood fabric or permeable open space. Further complicating the issue is the market incentive to hold these lucrative surface lots that profit greatly off of weekend visitors to businesses in the Flats and occasional event parking.

This guidance is strained in the context of Zone 1, where surface parking lots are not necessarily held because of low redevelopment values nor because they were required by zoning policy. In this autocentric context, parking is not the accessory feature of some development that can be excused from the project but the main feature of the development project itself. Compared to the cost of new construction, the interest on loans to afford new construction, maintenance, staffing, and the continuous hassle of leasing, it can appear more efficient

to sell parking than build new. Instead, these parking lots are strong real estate plays in their own right. Worse still, it will only get more profitable the scarcer TOD and TDM strategies would hope to make it. Each lot holder wants to be the last one standing. Furthermore, fierce commuter preferences for driving — whether because they find transit too inconvenient, biking too dangerous, and/or walking too uncomfortable — will sustain the revenues of surface lots and thwart initiatives for removing any convenient parking via explicit policy.

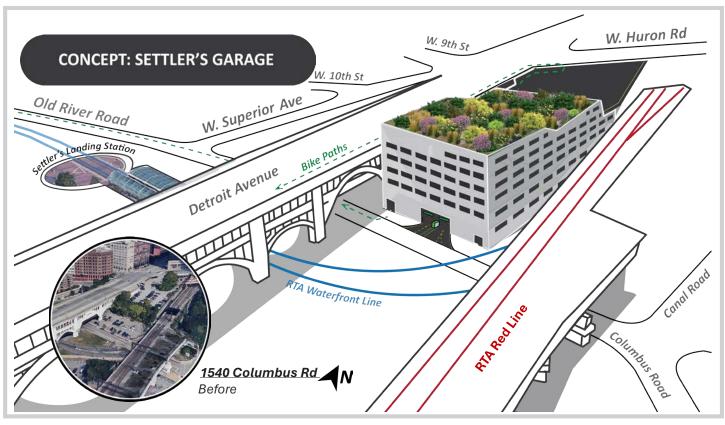


Existing Surface Parking in Zone 1

Strategy and Response: Green Garage

The most direct intervention on this issue may be to levy large taxes on parking or to outright disallow the use of land for surface parking in the city. In lieu of these strongly progressive policies, strategies to reduce the amount of surface parking that already exists may use financial incentives and/or design practices to engage and steer both the parking market and commuter's perception of transportation alternatives. Incentives can be employed to encourage developers to remove parking voluntarily. In this spirit, TDM policy in Downtown Cleveland rewards development proposals for the removal of parking with points toward their newly required TDM plan. An even more compelling incentive to remove parking may come in the way of a "parking removal" grant program that can apply toward the capital needs of any hopeful proposal. Design can be employed to meet traveler preferences where they are at and connect them to transportation alternatives in more comfortable, convenient, and exciting ways.

The Green Garage concept is a design exercise in exploring how drivers may be folded into an improved downtown transit network where their direct exposure to alternative transportation modes can convince them of the convenience, safety, and appeal of alternatives to driving. Additionally, Green Garage can serve as a multi-purpose transit node for active local travel, and as a host for impactful ecological services.



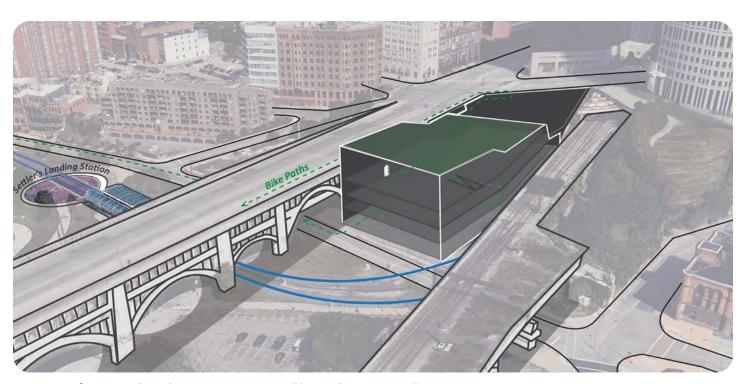
Rendering of potential Settlers Garage. Created by 17th Street Studios

Design To Manage Traveler Behavior

The key placing of this concept, by Settlers Landing Station, can concentrate parking on the margins of the downtown transit network, easing weekend traffic out-flow and controlling for the price of parking as surface lots along the Waterfront Line itself are incentivized to build up. This allows the Garage to function as a synapse between Downtown circulation and visiting drivers. Green Garage may out-compete surface lots in terms of safety, shelter, easy access on Detroit Avenue and Columbus, as well as easy egress from Downtown to help with weekend nightlife outflow.

Built to Support Alternative Mobility

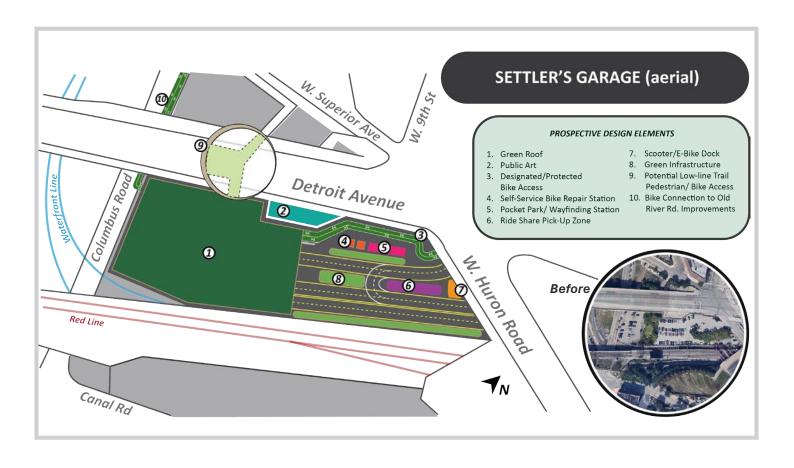
Upon arriving to Green Garage, travelers can be immediately engaged in Waterfront Line branded wayfinding which can direct them to Settlers Landing station which is just 200 feet away. They are also directed to myriad other transit options to explore the city further, and an overall more pedestrian-friendly experience. On foot or bike, the site can serve as a small multi-purpose transit node that supports cycling, e-scooters, electric vehicle charging, rideshare and more. A protected bike path built into the structure itself can assist cyclists traversing a significant grade change and busy intersections. Furthermore, this concept can host impactful ecological surfaces by reintroducing an acre or more of biodiverse green space to the surface plane via a green roof and other installations.



Massing of potential Settlers Garage. Created by 17th Street Studios

Built to Transition

While it is a parking structure, it may also be a stepping point between a commuter base that is devoutly cardependent and a commuter base that is more familiar with and willing to engage with the Waterfront Line and other transit options. All the while, Green Garage can provide tangible support for travelers who are already eager to move through the city without a car. Whenever it comes to pass – as an outcome of effective design choices, taxing, and zoning policies – that demand for parking is no longer present, Green Garage can be made easier to convert with mindful engineering at the outset. Considerations can be made for the load bearing capacity of each floor, the placement of elevators and stairwells, as well as the orientation to sunlight, that collectively prime the garage for adaptive reuse after parking (intentionally) obsolesces.





Green garage concept (Source: Inhabitat)



Herrity Garage green roof (Source: Flickr)

Zone 1 Concept Map

The first zone starts along the Cuyahoga River and ends at West 9th Street. Three main sites were discussed within Zone 1 that will help reach the transit-oriented development goals in the area. First, the class considered the site located between the southern bend of the Waterfront Line, east of James Street and north of Canal Road. This site is called the Robert Lockwood Lot. Currently, this lot exists as a vacant surface lot, however its location holds numerous opportunities due to its proximity to Settlers Landing Station and Tower City Station. This site is envisioned as a small-scale multi-modal hub. We are introducing a parking garage with a green roof, which connects to the Detroit-Superior High-Level Bridge. As discussion has occurred regarding activating the middle level of this bridge, we have proposed bike connectivity from the parking garage to the bridge. Along with this site development, proposed self-service bike repair stations, ride share pickup, scooter/e-bike infrastructure is proposed. Additionally, public art and green infrastructure is proposed to bring the site alive. The goal of this site is to act as a connectivity hub for the surrounding area.

The second site within Zone 1 that was considered is Settlers Landing. Settlers Landing is unique to the other considered sites in Zone 1 as it has the biggest asset, the Cuyahoga River, and a tremendous view of Nautica Pavillion. Currently, with the Waterfront Line largely out of service, there is not much of a need or desire for residents to utilize Settlers Landing. We propose significantly enhancing the tee canopy of this site while introducing pedestrianfocused amenities such as public art, live walls, and park benches. Additionally, a Cleveland script sign is proposed, like the others found around the city, which offers residents and visitors a great photograph opportunity with Nautica Pavillion in the background. Lastly, a kayak drop-in dock is being proposed along with a kayak/small boat storage hut. The idea behind these proposals is to reform Settlers Landing into a destination that residents and travelers would like to visit. In turn, this will increase the need for the Waterfront Line.

The third site is known as The Loop site. This site is located on the Port Authority's property and is a vacant space surrounded by the Waterfront Line with no accessibility. We proposed to green this space along with installing solar panels to help create energy for operations in the area. This aligns with the Port Authority's goals in achieving a more sustainable and climate-friendly practice.



Zone 1 Concept Map. Created by 17th Street Studios

Zone 2 Recommendations

Connectivity

Zone 2, which includes the West 3rd and North Coast RTA stations and major entertainment and recreation assets along the Downtown lakefront, faces even greater connectivity challenges. Our group recommends safety and green infrastructure interventions along key north-south routes, including both West 3rd and East 9th. In addition, we identified Alfred Lerner Way and Lakeside Avenue as priority candidates for redesign into safer, greener transportation routes.

Earlier, we noted the critical connectivity gap between the riverfront and Downtown lakefront. This presents a longer-term opportunity to build a safe and low-stress multimodal connection that would link existing trails - including the Lakefront Bikeway and the Towpath Trail – to the North Coast Harbor district. Our team identified West 3rd Street as a contender for transformation into a Complete & Green Street, which would prioritize safety, connectivity, sustainability and equity for all users regardless of age or ability. Placing West 3rd on a road diet would create space for an active travel corridor that could, at its northern end, seamlessly fuse with North Coast Master Plan trail connections. While an all-purpose trail or protected bike lane would provide the greatest benefit from an all-ages/all-abilities perspective, an engineering study could identify the most suitable placement and design.

Another Zone 2 contender for a Complete & Green Steet treatment is East 9th, which would benefit from improved multimodal connections and traffic calming. This busy corridor is one of Downtown's most auto-centric streets, with wide drive lanes, no bike facilities, unsafe pedestrian crossings, and very limited bus service. Given its role as a critical connector to the lakefront, a redesign would support the City's North Coast Master Plan, as well as its Vision Zero and 15-Minute City goals. The 2024 NOACA study referenced earlier also identified this core thoroughfare as a candidate for a Complete &

Green Street transformation.

To enhance east-west connectivity, we propose:

- 1) Examining the potential for closing Alfred Lerner Way to vehicle traffic to allow people to safely walk and bike through the area.
- 2) Placing Lakeside Avenue on a road diet and introducing bike facilities. The conversion of Alfred Lerner Way to a pedestrian-only thoroughfare would likely hinge on the reconfiguration of the Memorial Shoreway into a boulevard as part of a finalized North Coast Master Plan.

Zone 2 Overview

Zone 2 includes West 3rd Street and East 9th Street as the west and east boundaries. Alfred Lerner Way extends between West 3rd and East 9th Street, with Voinovich Park located at the top, northernmost point of East 9th Street. West 3rd and East 9th corridors would benefit from short- and long-term interventions that enhance stormwater infrastructure. Combining stormwater capture with road diet interventions can accomplish two things – increased access to our waterfront and climate resiliency by diverting polluted stormwater from our natural waterways.

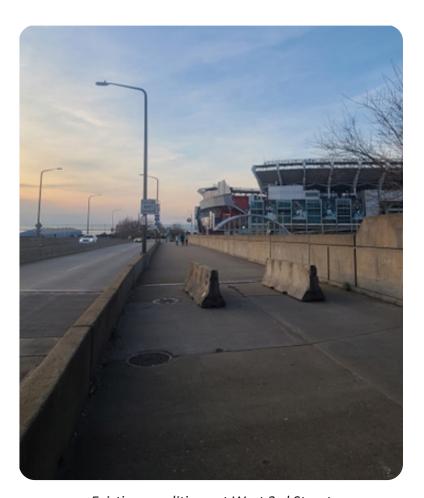
North Marginal Trail, running the length of North Marginal Road adjacent to Burke Airport, should be included in our understanding of Zone 2. Set to begin construction this year, this 2.7-mile off-road paved route represents a portion of the Cleveland Lakefront Bikeway and links into Cleveland's larger regional trail network. Running east-west between East 9th and East 55th streets, it will connect the Downtown lakefront with the future CHEERS project. The trail head will be a short walk from the Waterfront Line's North Coast Station.

West 3rd Street

Wide driving lanes traveling north and south and a concrete overpass with a protected pedestrian walkway characterize the stretch of West 3rd between Lakeside and the Browns Stadium. The Amtrak station can be accessed here by motorists only, and the on/off ramps for the Cleveland Memorial Shoreway create an awkward and sometimes hostile environment between motorists, pedestrians, and cyclists. Crosswalk striping at the Shoreway/ West 3rd intersection is virtually nonexistent due to a high volume of motorist traffic.



West 3rd Street Station

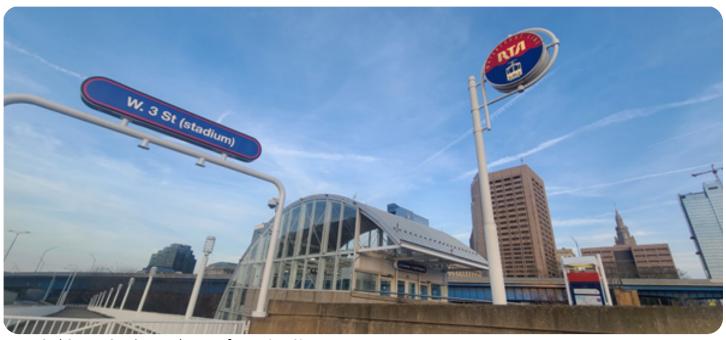


Existing conditions at West 3rd Street

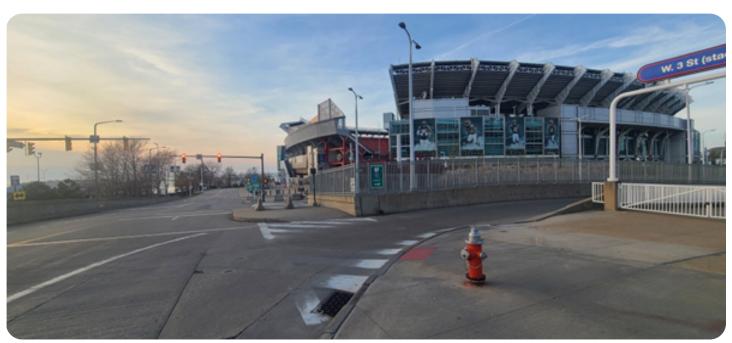
West 3rd Street meets Alfred Lerner Way north of the Shoreway on/off ramps. Our first recommendation is to close this access road to through traffic. The road connects the Browns Stadium to the North Coast Harbor district and is the most direct route from West 3rd to East 9th where the Lakefront Bikeway picks up at the North Marginal Trail. Closing Alfred Lerner Way to through traffic will create a space for novel experiences, like the Browns Village or even pop-up markets that help to keep visitors at the lakefront. As an interim use, it can support connections between the lakefront destinations and will be complementary to park amenities north of Browns Stadium.

Second, a dedicated, protected bike lane on the western side of the road would enhance flow between Superior, St. Clair, Lakeside, and the North Coast lakefront park. The feasibility of a protected bike lane between Superior Avenue and the future North Coast lakefront park should be explored as a next step to this study.

We also recommend public art along the eastern side of the overpass to soften the concrete pedestrian thoroughfare. Planter boxes that capture stormwater and utilize a gravity-fed irrigation system could also help create physical barriers between pedestrians and traffic in the thoroughfare while supporting stormwater goals.



West 3rd Street Station and Waterfront Line Sign



West 3rd Street & Cleveland Memorial Shoreway On-Ramp

West 3rd Street



West 3rd Street Site Plan. Created by 17th Street Studios



Rendering of West 3rd Street overpass with separated bike lanes and public art. Created by 17th Street Studios



Rendering of Alfred Lerner Way Closed to Traffic. Created by 17th Street Studios



Rendering of Raised Crosswalks at West 3rd and Memorial Shoreway. Created by 17th Street Studios

East 9th Street

East 9th Street is the gateway to our lakefront activities and is steps from the North Coast Waterfront Line stop, yet the environment is hostile to those on foot and on bike. Between Lakeside Avenue and Alfred Lerner Way, a steep grade change plus narrow sidewalks make the walking environment inhospitable. There is no dedicated, protected cyclist infrastructure either. Like West 3rd Street, East 9th prioritizes motorists over pedestrian and cyclist connectivity.

Our primary recommendation for East 9th Street is to create a tree-lined street and to build a road diet between the Cleveland Memorial Shoreway on&off ramps and Lakeside Avenue. Increased tree canopy along the right-of-way coupled with a center median that allows for stormwater capture would help to meet climate action goals and reduce the wideness of existing lanes, which promote speeding and distracted driving. A center median can offer a respite for small- to medium-sized trees while allowing stormwater to flow into the tree beds, like those along Cleveland's Fleet Avenue. We also recommend expanded sidewalks and dedicated, protected cyclist infrastructure that connects North Marginal Road to the future Cleveland Midway cycletrack at Superior Avenue.



North Coast stop on the Waterfront Line. This stop could be repurposed and combined with a new Cleveland Multimodal Station.





East 9th Street Site Concept. Created by 17th Street Studios

The Land Bridge

The North Coast Master Plan details the construction of a land bridge that would stretch from Mall C, over the rail line, the Memorial Shoreway, and Alfred Lerner Way to the Browns Stadium. Once realized, the land bridge would connect visitors to the heart of our urban core and invite Cleveland tourism to our greatest asset, Our Waterfront. The land bridge promises pedestrian and cyclist access to the lakefront, plus the demand for it.

A question that was posed to us early on was whether the land bridge would render West 3rd Street and East 9th Street north-south connectivity meaningless since cyclists and pedestrians would be able to move safely between our urban core and the lakefront. We view the users of West 3rd, Alfred Lerner Way and East 9th as distinct from those utilizing the land bridge to cross over the rail line and tracks to the north side of the stadium, where the North Coast lakefront park is envisioned.

Alfred Lerner way can be the place where the Browns Village is realized with outdoor pop-up markets, live music, festivities and more. Users of the land bridge may want to engage with the open street, and it would give visitors a reason to stay, dine and explore. The land bridge will provide one north-south connection choice for pedestrians and cyclists in Zone 2, but Alfred Lerner Way is the most direct eastwest connection that can accommodate recreation, daytime activities, and nightlife. Alfred Lerner Way also serves as the front door to the Browns Stadium, Great Lakes Science Center and the Rock and to Roll Hall of Fame. If closed to through traffic, the street can be activated to create synergies between the institutions.

Lakeside Avenue

Connecting West 3rd and East 9th south of the Cleveland Memorial Shoreway is Lakeside Avenue. Lakeside is home to Cleveland City Hall, the Public Auditorium, County Probate Court and the Huntington Convention Center. It is also home to a number of existing parks and green spaces.

These existing public green spaces should enhance stormwater capture by turning lawns into native gardens and increasing tree canopy wherever possible. Like East 9th Street, Lakeside Avenue between West 3rd Street and East 9th Street can feature a center median where small trees can be planted and irrigated by stormwater inlets. A center median might also serve as a protected pedestrian zone.

Tree canopy in the right-of-way along Lakeside Avenue should be increased to add color and greening to the city's civic core. Right-of-way tree canopy offers shade and a reprieve from hot, sunny days. Enhancing right-of-way tree canopy builds equitable climate resiliency, especially for the Cleveland urban core. Surface lots behind City Hall and the County Probate Court could feature solar-powered charging stations and shade with underground parking available.

Zone 2 Future Development

TOD Infill and Financial Feasibility

In Zone 2, the Waterfront Line's West 3rd Station is an informative subject for exploring how intensive transitoriented development infill can be realized along the whole of the line. TOD literature provides broad targets for building the residential density around transit stations needed to justify regular light rail service.

Development designed to meet these targets should also reflect the needs of the community as revealed in public engagement efforts, housing, and retail studies. While a development project committed to this design can perform well in terms of cashflow, the availability of gap financing compared to the cost of new construction ultimately requires a contribution of developer equity that is likely too large for the average developer to find merit in pursuing. Investigating the eligibility and impact of potential gap financing sources underscores some important financial considerations for any TOD infill strategy to be devised around the Waterfront Line.

Firstly, any long-term infill planning strategy should be mindful of how even small, seemingly low-impact or high-cost projects in the near-term can avail major financial resources down the line. Relatedly, long-term TOD infill strategies can benefit from investing in a capacity to scale and phase projects intentionally to maximize financial resources across time, and to secure and package sources that can be particular and often in conflict with each other.

Lastly, a Waterfront Line-focused infill development strategy should aim to take full advantage of Downtown Cleveland's new Shore-to-Core-Shore Tax-increment financing district and take every opportunity to articulate that the RTA Waterfront Line is *the* standing asset that moves residents from one shore to the next. And as such, a Waterfront Line TOD infill plan warrants as much funding as any other large-scale Downtown redevelopment proposal that the Waterfront Line may serve to connect and cohere.

TOD Prescriptions and Site Suitability

Conventional TOD literature prescribes that the 1/4-mile radius (130 acres) of a light rail transit stop should feature 10 housing units per acre and 50K square feet of retail and office space (Calthorpe 1990). The 1/4-

mile radius of West 3rd Station currently contains only 122 units out housing of an ideal 1,300 housing units and contains about 10.8K square feet of retail beyond what is prescribed. This retail is primarily made comprised of Food and Beverage businesses and sits at the very edge of the ¼-mile buffer. Meanwhile, there is only 128K square feet

% Mile Radius 130 Acres

"The Pit" 4.22 Acres

of green space within this boundary – mostly lawn. A long-term vision for this 130-acre area would see an addition of 1,178 housing units. With a quarter of this area spoken for by the Port Authority, a second quarter

occupied by the Browns Stadium, and a third quarter occupied by the Justice Campus, the obvious choice of where to meet TOD targets with infill development is the undeveloped south-western lot, colloquially known

as "The Pit." At 600 Front Avenue, this 4.22-acre (184k SF) site is wholly within the 1/4-mile radius of West 3rd station and only a 1-minute walk to the Waterfront Line at its closest point. The property is presently used as 810 surface parking spaces. By area, this is a fifth of all lot parking between West 3rd and the riverfront that can be replaced with more intensive uses that further neighborhood development goals. The lay of the site about forty

feet below the grade of the rest of Downtown presents a design challenge for retail and housing uses. Three floors of pediment or structured parking can bring the site up to street level.



"The Pit," a proposed candidate for TOD infill in Zone 2

Programming for Present Needs

Mixed-use development along the Waterfront line at this time should prioritize retail that offers Goods and Services (NG&S) that support a neighborhood's everyday needs. A retail market analysis conducted specifically for redevelopment potential in the Pit reveals that the surrounding consumer demand can support NG&S businesses that specialize in grocery products, daycare services, and pet care (Appendix [XX]). The addition of speculative space for Food and Beverage retailers can round out and support this business mix in an area that has been particularly favorable to dining establishments.

Moreover, housing at the Pit should be mixed income, holding space especially for working-class renters who earn 60% of the adjusted median household income (AMHI). For a delivery of 118 units, at least 40% of units should be affordable. At the same time, these projects should invest in constructing spaces that allow for meaningful social interaction and environmental health. Figure 25 details the estimated size of these elements, constituting the proposal of a development project at the Pit that is both TOD driven and responsive to community needs.









Neighborhood Goods and Service Retail

Grocery 35k SF

Day Care 10k SF

Pet Goods 2.5k SF

Restaurants 12.5k SF





Mixed Income Housing (60% AMI - Working Class)

Market Rate Apt. Affordable Apt.
71 Units 47 Units



Communal Space

Park & Public Realm 31k SF

Figure 25. Relative size of development elements for The Pit



An example of an urban scale pet goods store (Source: Pinterest)



An example of a Downtown retail and grocery store (Source: Biz Journal)



Recently opened Fairfax Market in Cleveland (Source: Freshwater Cleveland)

Project Feasibility

The performance of this program suggests that a project in this area, that provides these amenities, can be profitable and has positive investment value. Projected revenues include triple-net retail rents of 22.85% or less and an average market-rate apartment rent of \$1.78 per square foot. Affordable housing unit rents are limited to 60% AMHI maximums of \$820-\$1,175 per month depending on the room count. Additional revenues stem from unbundled and public parking that may be concentrated within three stories of above ground structure that are necessary to bring the retail level stacked above up to street grade. With a capitalization rate of 9%, this proposal is valued at almost \$48 million. The project's net operating income can support the debt service of two, fairly reserved loans: a senior mortgage for 60% of the project's value with an interest rate of 8.25% over thirty years; and a subordinated mortgage for 10% of the project's value with an interest rate of 7.75% over twelve years. Servicing this debt is manageable in the first stable year with a combined debt service coverage ratio of 1.08. A combined coverage ratio of 1.30 is preferred but for the purposes of a preliminary feasibility study, the project demonstrates promising financial tenability. However, regardless of its performance or social benefit, this proposal's estimated project cost of \$84 million requires a contribution of developer equity that may be too large to deem feasible – 21/8% of the capital stack (project funds) (Figures 2 and 3). This results in an internal rate of return for the developer of 7%. Meaning, even if a developer were to have the cash necessary to bring this project to fruition available to them, the present value of this project for an investor - the future amount returned after all debts and investors are repaid - may be too small compared to other investment opportunities. See Appendix [XX] for additional data and analysis.

Sources and Uses

The amount of developer equity required may be reduced by securing more financing from other sources that can bridge the "gap" between project funding and projects costs: Sources and Uses. Beyond the two sources of debt described as senior and second mortgages above, the sources of funding that may

be tapped to construct this project are myriad as are their impacts on the feasibility and character of the development project.

Tax credits are the most impactful tool available for a project of this scale and purpose.

New Market Tax Credits are especially so. The Census Tract containing the Pit Site and most of the Warehouse District, however, is ostensibly not eligible for this program based upon its most recent update with 2020 American Community Survey 5-year census data. While there has been minimal population change in this tract (in absolute numbers) over the last 10 years, the tract has oscillated in and out of eligibility for New Market Tax Credits depending on the measure of its poverty population as a percent of the whole tract according to statistically derived, 5-year estimates. Interestingly, the Pit remains eligible for Opportunity Zone investments which offer some tax sheltering to investors that are willing to invest in projects that aim to invest in distressed communities for a lower return than typically expected.



Figure 26. Capital Stack: Relative size of Project Funding Sources

Low-Income Housing Tax Credits from both the State of Ohio and the Federal department of Housing and Development are the premier resources for building affordable housing. Additional sources related to affordable and energy efficient housing present as the City of Cleveland's Housing Trust Fund, the federally administered 45L tax credit for multifamily home builders, and Solar Tax Credits. These particular sources often require a certain percentage of the development's proposed units rented at affordable price points and/or require the hiring of contractors at prevailing wages and/or significant installation costs. These sources may appear to cost more than they offer in terms of revenue stream and construction costs but in the long-run, well placed affordable housing around the warehouse district or the Pit can regulate the eligibility of the whole area for larger, more catalytic funding sources like New Market Tax Credits. Poverty should neither be concentrated nor so diffused that whole communities cannot reliably expect the subsidy resources they need to grow.

The Transformational Mixed-Use Development tax credit (TMUD) is another instrumental tool that can contribute a sizeable 10% of the total cost

of development if the project can demonstrate a namesake transformational impact. The availability of this source will entail requirements for the physical size of the development and a reasonable estimate of the project's tax impact that is greater than the size of the credits awarded. This estimate would include the sales tax upon the estimated \$26 million in expected annual purchases, income tax on an assumed 139 permanent jobs and 118 new households, as well as direct and surrounding property values. Any tax abatements, however, do not contribute to the estimate of the project's tax impact, complicating the compatibility of TMUD and other tax abating sources.

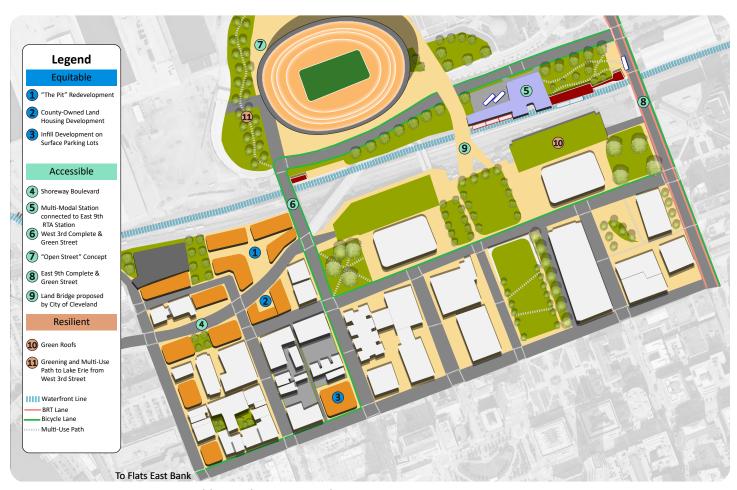
Tax Increment Financing (TIF) is another critical source for a project of this kind that may be made all the more available by Downtown Cleveland's recently established Shore-to-Core-to-Shore TIF District. The true potential of this source to enable a TOD Infill proposal for the Pit is not entirely known. The timescale and size of the TIF district it has created may be the most instrumental resource in realizing redevelopment in the Pit or elsewhere along the Waterfront Line.

	SOURCES			USES			
33.3%	First Mortgage	\$ 28,108,558		Acquisition	\$	1,159,200	1.4%
5.5%	Second Mortgage	\$	4,684,760	Brown Field Remediation	\$	505,538	0.6%
0.9%	Housing Trust Fund	\$	750,000	Site Prep	\$	919,160	1.1%
6.7%	Opportunity Zone Investor	\$	5,621,712	Construction	\$	49,488,400	58.69
21.8%	Developer Equity	\$	18,396,088	Garage Construction	\$	7,500,000	8.9%
3.5%	Deferred Developer Fee	\$	2,939,164	Contingency	\$	5,698,840	6.7%
0.7%	Brownfield Remediation Grant	\$	570,904	Green Space/TDM Infra	\$	2,480,000	2.9%
0.3%	Green Infrastructure Grant	\$	250,000	Soft Costs	\$	5,727,953	6.8%
0.3%	Solar Tax Credit	\$	217,648	Developer Fee	\$	2,939,164	3.5%
0.3%	45L Credit	\$	271,400	Construction Financing	\$	8,023,917	9.5%
10.0%	TMUD	\$	8,444,217				
1.4%	LIHTC	\$	1,187,722				
7.1%	Tax Increment Finance	\$	6,000,000				
8.3%	New Market Tax Credits	\$	7,000,000				
100%	TOTAL	\$	84,442,171	TOTAL	\$	84,442,171	100%
				Variance	\$	(0)	

Figure 27. Capital Stack: Relative size of Project Funding Sources

Zone 2 Concept Map

The second zone is from West 9th St to East 9th St. Encompassing the North Coast Harbor area. While there are many moving pieces in this area, there is perhaps no greater opportunity then the impact of a street-level Shoreway Boulevard proposal that is currently being studied by the City of Cleveland's North Coast Master Plan. As it exists, the Shoreway is a major barrier to the lakefront and prevents viewsheds from being accessed at ground level. The opportunity to re-create the street grid and improve the connectivity between Lakeside Avenue, Summit Street, and West 9th Street could spur new development interest on county-owned land that is only used for parking currently. New developments could front the Shoreway Boulevard with ground floor amenities and housing above. Additionally, "The Pit" as it is colloquially known, would see benefit from its improved connectivity to the rest of Downtown Cleveland and thus could be developed over time with mixed-income housing and retail amenities for downtown residents. Because of the need to consolidate parking, a multi-story garage as part of The Pit site is proposed and can help incentivize the redevelopment of other surface parking lots in the vicinity.



Zone 2 Concept Map. Created by 17th Street Studios

A new multi-modal station has been discussed as part of the North Coast Master Plan, consolidating inter-city transit facilities such as Greyhound Buses & Amtrak into one centralized facility. Because the East 9th RTA Station is an iconic structure, it should be re-utilized and connected to the new multi-modal station. With a direct connection to the Shoreway Boulevard and the RTA Waterfront Line as part of a refreshed East 9th Street Station, this would bolster connectivity for tourists and visitors. Also, if the land bridge proposed by the city of Cleveland is constructed, connections to the multi-modal station should be studied. These three connections can create a more dynamic and busier hub for transportation activities and help Cleveland position itself to attract more frequent inter-city transit services.

Once West 3rd St and East 9th St are reconfigured to become "Complete and Green" streets, pedestrian and bicycle traffic will have less difficulty reaching lakefront amenities and thus a safer connection for all will be established. As part of this concept, Alfed Learner Way will become a pedestrian/bicycle only plaza and a multi-use trail leading directly to the lakefront will extend from West 3rd Street. Additionally, West 3rd Street north of the Shoreway will be an "open street" that is closed to vehicular traffic, with the exception of the Port Authority, emergency vehicles and Browns personnel as needed. Creating this safe and pleasant connection to the lakefront will drive more activity and create a better game-day experience, where pop-up events and tailgating parties can take place in the scenario the Muni Lot is redeveloped.



Current Browns game tailgating in the Municipal Lot presents a challenge for redevelopment, but could be moved to a pedestrian-only West 3rd Street. (Source: Spectrum News)



Example of a pedestrian-only or "open street" in New York City's Times Square. (Source: Global Designing Cities Initiative)



Buffalo's recently rebuilt Amtrak Station (Source: Empire State Passenger Association)



A new multi-modal facility in Troy, Michigan (Source: Neumann Smith)

Zone 3 Recommendations

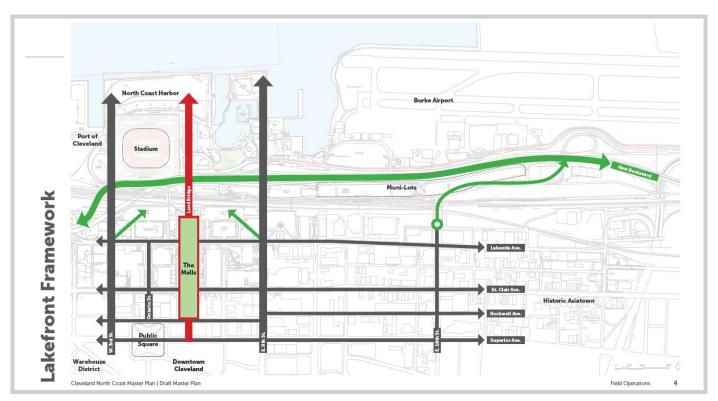
Connectivity

Zone 3, host to South Harbor Station and the eastern terminus of the Waterfront Line, is largely defined by the Muni Lot site. The roughly 20-acre site is barren, largely devoid of trees and greenspace, and deeply disconnected from the rest of Downtown and the lakefront. Apart from the Waterfront Line station, there are few viable access points for walkers, cyclists, or micromobility users. The site is surrounded by industrial activity and any car-free journey to nearby amenities is difficult and time-consuming. Waterfront Line users end their journey there, and lack of bus service means that they cannot transfer easily to any other public transit route to reach onward destinations.

The implementation of major transit-oriented development projects in Zone 3 would create the density conditions needed to support enhanced connectivity. In addition to regular Waterfront Line

service, an extended East 18th Street paired with a Complete & Green East 9th Street with new bus/trolley service would greatly enhance access for residents, visitors, and the workforce. In the longer-term, an extension of the Waterfront Line – either as an eastern expansion, a Downtown Loop, or both – would further bolster this network.

A key proposal for transforming Zone 3 into a more connected, walkable, and livable district is to extend East 18th Street northwards from its current terminus at Davenport Ave. This route will provide vehicle and pedestrian access 1) south to Lakeside Ave East via a bridge over the rail lines and 2) a safe and convenient connection to a future new boulevard that replaces the Shoreway. The latter extension would also enable multimodal users to reach the future North Marginal Trail.



Lakefront Framework showing East 18th Connector. Source: City of Cleveland North Coast Connector Plan

Zone 3 Future Development

Cleveland Municipal Lot

The Cleveland Municipal Lot has been a focus of redevelopment plans in Downtown Cleveland for many years. As it currently stands, there are approximately 2,300 parking spaces, which remain mostly unused except for during Cleveland Browns home games when crowds of fans gather in the lot for tailgating activities. The Cleveland Browns play between eight to ten home games per season on average, leaving the site underutilized for much of the year. The lot is located just south of Burke Lakefront Airport, a nearly 450-acre site, also city-owned, positioned directly on the lakefront.

The City of Cleveland, local organizations, CDCs and planners have worked diligently to carefully develop and propose solutions to break the physical, economic, and racial inequities which exclude residents from lakefront access. The proposed redevelopment of the Muni Lot has considered these plans and recommendations and aligns well with the goals to increase accessibility and usability of two of Cleveland's key assets: the public transportation system and the lakefront.

Downtown Cleveland using By redesigning (TDM) transportation demand management concepts, the City aims to influence more competitive transportation options with already existing infrastructure and reduce single occupancy vehicle trips.

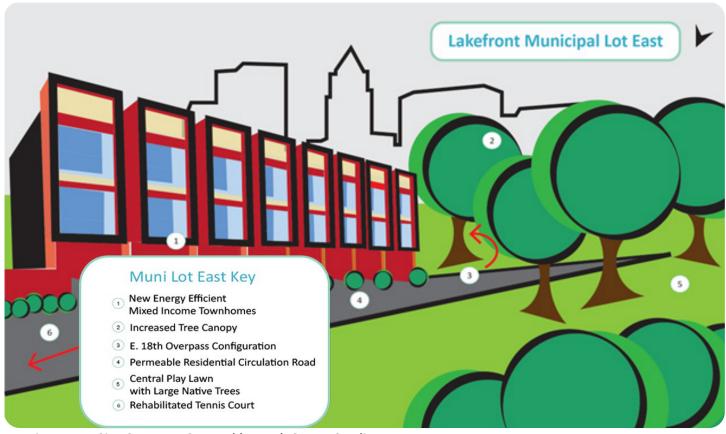
Development Constraints

The Muni Lot has several constraints which must first be resolved to activate a neighborhood destination center and create a dense urban environment that supports overall public transit usage and increases Waterfront Line ridership. The largest constraints are related to overall accessibility and include limited walkability, steep grade changes, and barriers presented by the presence of the Cleveland Memorial Shoreway.

Walkability: From South Harbor Station, the closest commercial destination is Noble Beast, only a 700-foot linear distance away. Traveling to Noble Beast on foot would increase your distance by nearly 8 times. Heading west from South Harbor station, the only available path available would require a 1-mile distance; heading east would require approximately 2.5-miles (Figure 1). Walking is the least accessible and most time-consuming method of travel while driving would only take 3-4 minutes as opposed to 30-60 minutes.

Elevation/Grade Change: The North Coast Master Plan details the extension of East 18th Street over the rail and connecting to the proposed Shoreway Boulevard near the eastern end of the lot. However, due to the grade change from South Marginal Road and across the rail, a land bridge of some sort would be recommended to preserve existing rail and increase full and safe accessibility for all walkers, riders, and drivers. Ultimately, the extension of East 18th would pass through the approximate center of the lot and connect to the Shoreway, splitting the site into two. We will refer to these sites as Muni West and Muni East. The split presents an opportunity to add a roundabout between the lots, creating accessibility from the Shoreway from the north, access on the east and west lots, and over the rail and South Marginal Road.

The Shoreway: This bypass freeway directly north of the Muni Lot serves as a primary connector between downtown Cleveland and the near west side suburbs, providing a convenient transportation alternative to nearby highways. Redesigning the Shoreway into a boulevard would increase safety for pedestrians, increase access to the lakefront, and allow a streetscaped boulevard to better shield any future Muni Lot development from the effects of severe storms, lake effect weather, and floods.



Muni Lot East Site Concept. Created by 17th Street Studios

Muni Lot East

Much of the impervious parking surface that makes up the entire length of the Lakefront Municipal Lot should be evaluated for its ability to divert stormwater or capture stormwater according to grade and slope. For Muni Lot East, tree canopy should be increased significantly as the proposed intensity of housing development is lighter in this section. A localized park featuring a bioretention like that recommended for Muni Lot West could be explored here as well. New sidewalks and access roads built within the site should support our groundwater and watershed.





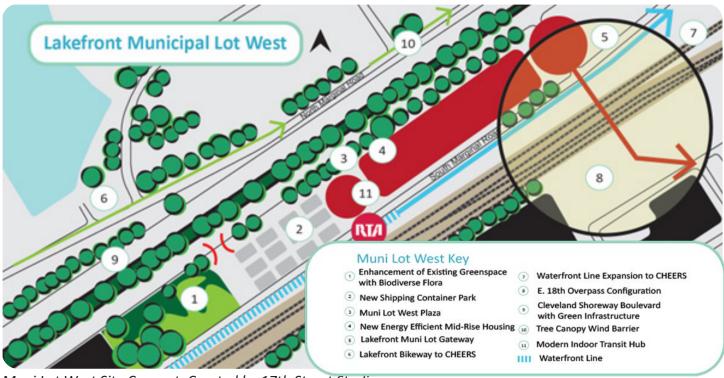








Muni Lot East Inspiration



Muni Lot West Site Concept. Created by 17th Street Studios

Muni Lot West

Muni Lot West represents one-half of the complete Lakefront Municipal Lot site. Park space at the western edge can be expanded and developed in a way that supports monarch migration and stormwater diversion. Impervious surface across the footprint of Muni Lot West should be evaluated for its ability to divert or accommodate stormwater and gravity-fed irrigation systems. Tree canopy along the future Shoreway Boulevard and across the entire site will help to enclose the property and create a natural wind and sound barrier.













Muni Lot West Inspiration

Successive Scenario Framework for Redevelopment

The scenario framework was developed by identifying four site-specific goals for Zone 3: connection, density, sustainability, and suitability to outline a path towards a neighborhood center in the Muni lot.

Linkage: The Muni Lot's lack of connectivity to the rest of Downtown is the greatest challenge and was highly analyzed by students. The proposed connectivity aligns with the North Coast Master Plan by converting the Shoreway into a boulevard to decrease traffic and speed, create safe access for pedestrians and cyclists, and overall decrease the need for reliance on cars. The redevelopment encourages the extension of East 18th, to allow full access to the site.

Density: Housing analysis data reveals only one existing housing development is located within a ¼-mile of the Muni Lot and adjacent existing amenities are few to none. Otherwise, the site is surrounded by industrial facilities and Burke Airport. Density can be achieved by directing growth into compact development patterns and assist in the city's TOD and TDM goals.

Affordability: Redeveloping the site into an efficient use of the land will help to preserve open space and allow affordability for diverse households at various costs. To serve the range of households, a mix of housing types will be provided on site. While Muni West will be more commercially driven in a mid-to high-rise style, Muni East is recommended to be a higher density, row style housing to accommodate varying household needs and create a sense of community. Affordable housing also speaks to one of our key principles, equity. Proposing affordable housing into the scenario framework creates opportunities to improve major gaps in housing needs identified in the Housing Analysis presented earlier in this report.

Suitability: By creating a mixed-use destination with core commercial amenities located adjacent to the transit stop, transit use will become more attractive. The area will space will allow for convenient shopping and entertainment uses. To reduce auto travel, the site is located within a very short distance to the South Harbor station and studies show that the greatest

pedestrian capture rate for public transit occurs when transit stops are within a ¼ mile walking distance from home or office.

The combination of uses and accessibility in the Muni Lot will make for a site which is more human-scale and community-oriented. Street-level retail space will encourage pedestrian-oriented travel and support the Waterfront Line's revitalization. Creating a synergy between land use and transit will deliver results in the form of "increased ridership and, therefore, revenue, expanded shopping and housing choices, community revitalization and placemaking, and environmental and air quality improvements" (Center for Transit-Oriented Development). A mixed-income TOD will balance both market rate and affordable housing while allowing residents to stay in an established community.

Livable amenities are key to the proposal. Livable amenities could include a grocery store or fresh food market, health clinic and pharmacy, a dental office and more. By providing access to daily needs without the need for driving in a single-use auto, residents can live comfortably.

Muni Lot Scenario Study

The location, mix and configuration of the land uses in the TOD are designed to encourage convenient alternatives to automobiles, and provide a model of efficient land utilization to create more identifiable and livable communities. For the Muni Lot to be redeveloped and aligned with TOD goals, the site constraints must be considered and resolved to successfully incorporate the Muni Lot into a usable, neighborhood center. The following scenarios (Figure 28) explore interventions and open possible outcomes for the site.

Muni Lot Scenario Study: New Development Potential with Every Successive Resolved Constraint.

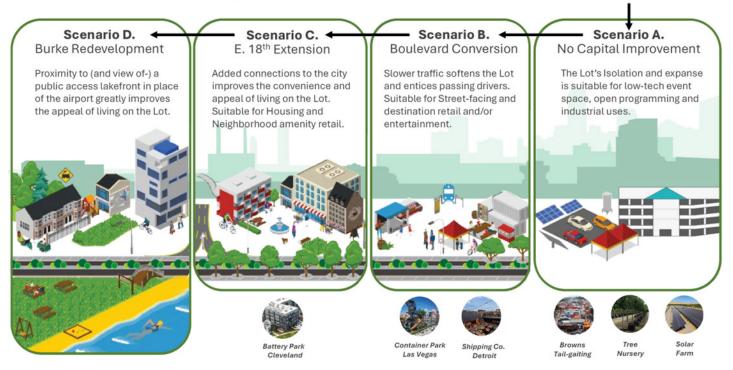


Figure 28: Muni Lot Scenario Study. Created by 17th Street Studios

Strategy and Response: Muni West & East

Phasing is a critical component to the successful redevelopment of the Muni Lot into a neighborhood center.

Phase I will include a Shipping Container park on the Muni West site that provides livable amenities such as grocery, light retail suitable for small businesses, eateries, and more to stimulate economic development, bring interest and awareness of the site's future redevelopment plans, and create local job opportunities. Strategically locating the "ship park" close to South Harbor Station will encourage ridership and accessibility. A Plaza Entrance will be developed to increase visibility and enhance visitor interactions. Finally, de-paving the lot next to North Coast garage

Container parks have been created in many cities across the world to provide unique shopping and dining experiences

and introducing greenspace will act as a public gathering space. As part of Phase I, we recommend greening along the Shoreway to combat and provide a barrier from the lakefront weather conditions.

Phase II would see mid-rise mixed-use residential that aligns with form-based code and FAA restrictions. To stimulate pedestrian activity and to provide economic incentives for the development, a mixed-use building will enable a transit-supported neighborhood by creating the necessary density. Situating housing and retail in close proximity allows residents to walk or bike for daily trips, the provisioning of jobs within walking distance of transit will encourage use for commuting, and conveniently located retail areas allow shopping to and from work and home.



Zone 3 Concept Map

Zone 3 shares a lot of the same structural constraints as Zone 2. The Shoreway and Muni lot as they exist today remove the lakefront from downtown's grid, but there are existing proposals that could drastically change this dynamic. We are confident that improved transportation infrastructure like the Shoreway Boulevard and phased mixed-use development support one another in spurring development that activates this part of the Waterfront Line.

Out of the three zones mentioned, Zone 3 is the site most dependent on adjacent proposals and should be thought of as a long-term multi-phased strategy. With Lakefront Municipal Parking Lot as our main development focus, we believe this site can play a key role in connecting the lakefront to greater downtown.

The Municpal Lot will need to be a phased development involving multiple public and private partners. The city can issue an Request for Qualifications (RFQ) or Request for Proposals (RFP) to attract a joint-development partner that can address the site in phases. Adding housing density and retail on this site in different forms such as townhouses or mid-rise mixed use buildings will attract people to the area. Some parking options should remain closest to the RTA Station to allow for some vehicular access. Additionally, the East 18th Street connection proposed by the City of Cleveland and Ohio Department of Transportation would serve as an enhanced connection to the Municipal Lot from Downtown. The opportunity at The Municipal Lot could serve to create an entire new neighborhood and regional destination over time.



Zone 3 Concept Map. Created by 17th Street Studios

Comprehensive Map



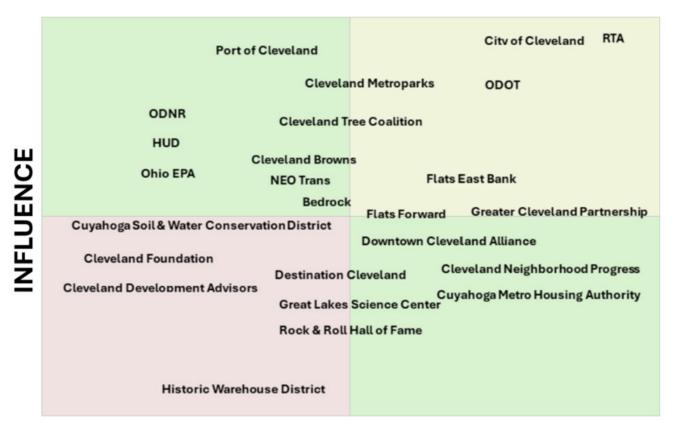
Implementation

Stakeholders and Partners

As part of the implementation process, we expect a high degree of stakeholder and partnership participation as an integral component to successful development outcomes. Already a tremendous amount of work and progress has been made towards the betterment and beautification of Cleveland's waterfront. We view this plan not as stand-alone recommendations or independent initiatives, but

instead envision these development concepts as complements to existing programs. Our mission and guiding principles align with many others working to support and uplift the waterfront community, and we hope to be a catalyst to progressing the goals of these projects and our own.

KEY STAKEHOLDERS & PARTNERS



INTEREST

Funding

Potential Funding Partners

ORGANIZATION	CONNECTION TO PROJECT	ALIGNMENT
Bedrock	Primary developer of Tower City and Collision Bend Riverfront Project	Zone 1
City of Cleveland	Client	Zone 1, 2, 3
Cleveland Foundation	Community-based philanthropic organization that awards grants in various program areas	Zones 1, 2, 3
Cleveland Metroparks	The trailways and planned waterfront improvements span from Settlers Landing to the CHEERS project	Zones 1, 2, 3
Cuyahoga County Neighborhood Access & Equity	Part of the Federal Reconnecting Communities Pilot and Neighborhood Access and Equity discretionary grant	Zone 1
Destination Cleveland	Non-profit organization dedicated to building a more dynamic downtown	Zones 1, 2, 3
Federal Government	Department of Transportation currently planning changes to I-90; Tax incentives for commercial solar farm	Zones 2, 3
Greater Cleveland RTA	Owner/Operator Waterfront Line	Zones 1, 2, 3
Jack, Joseph, and Morton Mandel Honors College	Grants to transform public lakefront parks on Cleveland's east side	Zone 2
Monarch Joint Venture	Grant funding for proposed Monarch Habitat	Zone 2
Ohio Department of Natural Resources	Regulatory body and potential partner in planned green infrastructure	Zone 1, 2, 3
Ohio Environmental Protection Agency	Great Lakes Water Quality Agreement; Cuyahoga River Area of Concern	Zone 1, 2, 3
Port of Cleveland	Located adjacent to Waterfront Line and is key piece of property tied to our "Loop" recommendations	Zone 2
Rock and Roll Hall of Fame	Key attraction along the Waterfront Line	Zone 2
State of Ohio	Ohio Department Of Transportation responsible for road and bridge construction	Zone 1, 3
State of Ohio	State capitol improvements	Zones 1, 2
US Dept of Energy and Transportation Collaborative	Prospective funds for EV Charging Stations	Zones 1, 3







DEPARY

FUNDING COMMITED TO THE WATERFRONT







Specific Grants for projects based on application and criteria



Partnership Funding



6 million and growing



100 Million



3.5 billion



Micro Grants

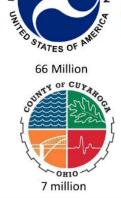


CLEVELAND

60 million



Partnership Funding



stages for Innerbelt Improvements

OFTRA

23 MIL over 2



Cuyahoga Riverfront Master Plan

Detroit Superior Bridge & Viaduct Bridge Trails Complete & Green Streets Ordinance Transit Demand Management North Coast Master Plan **Canal Basic Park Framework** Sustainable Cleveland Municipal Action Plan **Cleveland Climate Action Plan**

CHEERS

North Marginal Trail Heritage Park & Rivergate Expansions **Redline Greenway Expansion**

Flats East Bank Phase III Greater Cleveland Partnership All In Plan

Cleveland Neighborhood Progress Strategic Plan

Cleveland Tree Plan

EPA Cuyahoga River Area of Concern

Timeline

Community Engagement

Action Step	Priority	Timeframe
Incentivize WFL use for waterfront activities and events with free transit passes.	High	Long-term
Offer WFL passes with waterfront parks and recreation programming.	High	Long-term
Collaborate with waterfront project consultants to continue gathering public input.	High	Long-term
Collaborate with the tourism industry to subsidize WFL fares for visitors and event attendees.	High	Long-term
Collaborate with businesses and public/non-profit employers to subsidize WFL fares for employees.	High	Long-term

Tourism and Local Economy

Action Step	Priority	Timeframe
Develop collaborative marketing campaigns for Waterfront Line businesses.	Medium	Medium-term
Facilitate the introduction of new merchants at diverse price ranges, with a diverse profile of business owners.	High	Medium-term
Increase retail foot traffic by enhancing the pedestrian experience through social infrastructure.	High	Medium-term
Develop and implement a strategy to highlight important cultural and historical landmarks within RTA stop walksheds.		Medium-term
Explore food co-op and food share models that promote healthy living.	High	Short-term

Mobility Network

Action Step	Priority	Timeframe
Define trail route(s) that connect the Cleveland Foundation Centennial Lake Link Trail, the Red Line Greenway, the Superior Midway and other regional connectors to the Lakefront Bikeway.		Short-term
Create programs that encourage biking and exploration along the waterfront.		Medium-term
Identify and prioritize cyclist and pedestrian routes north-south to the lakefront and east-west to the riverfront.		Medium-term
Recommend accessibility treatments for priority routes to the waterfront.		Medium-term
Create a marketing strategy to promote ridership in partnership with businesses and institutions.		Medium-term
Create an identifiable brand at each Waterfront Line Station.	High	Medium -term
Recommend locations for bus stops and connections.		Medium-term
Improve existing ADA infrastructure to meet new requirements.		Short-term
Continually focus on measures that will increase safety (better lighting, increased access to security, cleanliness of stations and rail cars, etc.).		Long-term
Conduct feasibility study to explore the extension of the Waterfront Line to the Cleveland Harbor Eastern Embayment Resilience Strategy (CHEERS) project.	High	Medium-term
Conduct feasibility study to explore the extension of the Waterfront Line downtown to Tri-C Metro Campus.	High	Medium-term
Research funding mechanisms and identify capital schedule for both extension scenarios.		Medium-term

Health, Public Space & Environment

Action Step	Priority	Timeframe
Identify opportunities to plant and maintain trees to support City's goal of increasing tree canopy coverage to 30% by 2040.	High	Long-term
Incorporate stormwater management practices into Waterfront redevelopment, such as capturing and irrigating grey water.	High	Long-term
Reduce hardscape and impermeable surfaces to mitigate urban heat island and reduce stormwater runoff.	High	Long-term
Create and support habitat for urban wildlife through increased vegetation and green space buffers.	High	Long-term
Implement interpretive informational signage that elevates safe ecological practices.	High	Medium-term
Use public art as a medium to connect with the history and culture of the waterfront and attract visitors.	High	Short-term
Identify opportunities to incorporate wayfinding into public art in highly visible locations.	High	Short-term
Create and implement updated, branded signage specific to the Waterfront Line stations to build the area's identity.	Medium	Medium-term
Include audio and visual accommodations for public art & wayfinding.	High	Medium-term
Ensure public space is well maintained and in good repair along the Waterfront Line.	High	Medium-term
Install bike infrastructure such as racks & bike repair stations.	High	Short-term
Fund and implement safe, universally accessible, pedestrian- supportive infrastructure connecting WFL stations to nearby destinations and attractions.	High	Long-term
Enhanced public spaces near WFL stations including public green spaces and social spaces.	High	Long-term
Prioritize public/community resources near the WFL stations.	High	Long-term

Equitable Transit - Oriented Development (ETOD), Land Use & Zoning

Action Step	Priority	Timeframe
Create mixed-income, equitable housing options around the Waterfront Line.	High	Long-term
Rebrand a family-oriented and safer downtown by elevating existing and future green spaces, parks and shopping.	High	Long-term
Incentivize green infrastructure, nature-based solutions & renewable energy in TOD projects.	High	Long-term
Incentivize new Neighborhood Goods & Service retailers through streamlined permitting processes, fee waivers, and tax relief.	Medium	Short-term
Package available financial tools to assist businesses that specialize in neighborhood goods and services.	Medium	Short-term
Explore financial tools to attract local grocery chains that offer fresh, affordable food options.	Medium	Short-term
Expand and adopt form-based code for the Downtown waterfront area	High	Short-term
Establish a surface parking lot tax on downtown lots to encourage redevelopment	High	Short-term
Follow Complete & Green Streets guidelines on street reconstruction projects to create compatibility with walkable TOD-friendly land uses	High	Ongoing
Identify excess publicly owned land and issue RFPs incentivizing housing development	Medium	Short-term
Update citywide comprehensive zoning & land use plan	High	Long-term
Add diverse housing typologies that attract people of all incomes and age groups	High	Short-term
Add diverse retail amenities that meet daily needs and enable more people to work, live, play in Downtown	High	Short-term
Expand greenspace access downtown through repurposing public land and redesigning existing greenspace to be more accessible and welcoming	Medium	On-going
Incentivize city employees and major employers to utilize RTA by enrolling in Commuter Advantage program	Medium	Short-term
Continue to lead the way in office to housing conversions through strategic incentives packages	Medium	On-going

Meet The Team



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James Kastelic *Professor*



Sam Munro Student



Mae Thompson Student



Nate J. Lull *Student*



Krystal Sierra
Student



Edgardo (EJ) McGorty



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Jody Oelbracht

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Diane Kravanya *Student*

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