

Achieving Environmental Justice for Disadvantaged Communities in Industrial Recession Urban Areas

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Abstract

Urban areas dealing with industrial decline often face problems like empty land, polluted environments, and broken social connections. This study looks at Cleveland's St. Clair-Superior neighborhood as an example of how industrial changes have created unequal access to resources. To promote equity in urban planning, the research focuses on reducing the extra challenges faced by underserved communities and improving the lives of local residents. Using tools like GIS mapping, fieldwork, and input from the community, the study explores ways to increase green spaces, reuse empty lots, and preserve cultural identity. The findings highlight the need for a well-rounded approach that includes environmental, social, and cultural factors. The suggested solutions show how planning with equity in mind can help transform struggling neighborhoods into strong, connected communities. This model can guide other cities facing similar issues.

Keywords

Environmental Justice, Urban planning, Industrial recession, Spatial inequity, Community engagement

1. Introduction

Urban spaces are changing as industries shift, impacting communities that depend on them. The recession of heavy industries has left vacant sites, altered populations, and disrupted social and economic structures in many cities (Hegerty, 2019). This calls for redesign for the urban planning to address decay, underused land, and demographic changes (Bertolini, 2011). Environmental Justice offers the principle for ensuring everyone has access to safe, healthy environments. Environmental Justice focuses on improving conditions in disadvantaged areas by enhancing environmental quality, reducing health disparities, and fostering social ties (Agyeman et al., 2016).

Cleveland's St. Clair-Superior neighbourhood, affected by industrial recession, exemplifies the need for Environmental Justice-oriented interventions. This community faces issues such as vacant land, pollution, and limited green space ("ST. VITUS CHURCH | Encyclopedia of Cleveland History | Case Western Reserve University," 2020). Through spatial analysis, field studies, and community input, this research suggests ways to improve access, repurpose vacant areas, and support cultural renewal. These strategies aim to create healthier, more inclusive urban spaces, offering a model for other cities facing similar problems.

2. Literature Review

2.1. The Impacts of Industrial Shifts and Recession on Urban Environments

Urban spaces are undergoing transformative shifts due to evolving economic and industrial demands,

resulting in notable changes to the spaces on which communities depend for livelihoods. With the departure of heavy industries from urban areas, industrial sites are left vacant, populations shift, and the social and economic fabric of cities deteriorates (Pottie-Sherman, 2020). These transformations, especially in post-industrial cities, underscore an urgent need for restructured spatial and environmental planning to address issues like urban decay, underutilization of land, and population migration and change (High, 2003).

In the United States, many industrial-based cities such as Detroit—historically driven by automobile and metal industries—have confronted these challenges since the 1950s (Hegerty, 2019). Economic recession and industry shift alongside crises like the subprime mortgage collapse, have accelerated population decline, unemployment, and an increase in violent crime rates, particularly in cities within the Northeastern and Midwestern U.S. The exodus of highly educated, high-income residents, combined with an influx of diverse demographic groups, has created complex spatial challenges, intensifying social tensions, unemployment, and economic disparity. The economic and social changes caused by industrial decline highlight the urgent need for urban planning strategies to deal with its unintended effects. This is especially true for cities facing industrial recession. A major result of these changes is the increase in vacant land and abandoned buildings. These contribute to fragmented urban spaces, social isolation, and health problems. As Garvin (2013) points out, empty lots can harm both mental and physical health. They lower neighborhood morale, weaken community ties, attract crime, and make areas less safe. This is also the root of the issues facing cities in the industrial recession. (Pottie-Sherman, 2020)

This change in land use often places a heavier burden on disadvantaged neighborhoods. It increases environmental inequalities by reducing the quality of resources and adding social stress. Long et al. (2018) note that abandoned industrial sites often leave behind pollutants. These harm vulnerable communities the most and limit access to safe and healthy public spaces. These are the real challenges that cities in industrial decline are facing today.

2.2. Environmental Justice in Industrial Recession Area

Environmental Justice (EJ) can be regarded as a field that draws from and integrates theory and practice in a mutually informing dialogue, environmental justice can be understood as a form of social *praxis* (Prilleltensky, 2001). Principles for Environmental Justice emphasize the right of all individuals to equitable access to safe, healthy environments, regardless of race or socioeconomic status. The origins of the Environmental Justice movement, such as the 1982 protests in Warren County, North Carolina, (GAO, 1983) highlight a longstanding struggle against environmental discrimination. In this case, 414 activists were arrested while protesting the placement of a toxic waste facility in a predominantly Black and low-income community, sparking national conversations on the need for environmental equity. (McGurty 2007) As Environmental Justice principles gained momentum in the 1980s and 1990s, the movement expanded from opposing environmental burdens to advocating for equal access to environmental benefits like green spaces, clean air, and safe housing infrastructure. (Morello-Frosch et al. 2002)

Over the years, the scope of Environmental Justice has broadened, increasingly overlapping with sustainability goals to improve quality of life within a holistic framework. (Choi et al., 2020) Environmental Justice advocates argue that access to a healthy, fulfilling life should be available to all, highlighting the need for resources that empower individuals to make meaningful life choices with happiness, safety and the sense of belonging. (Sze and London, 2008) This evolving focus incorporates Environmental Justice principles into sustainable urban planning, underscoring that environmental protection should be accompanied by equitable distribution of environmental assets and resources, targeted for the long-term development. Today, the Environmental Justice movement supports the creation of green spaces, access

to recreational areas, and environmental protections that allow all residents, including marginalized groups, to benefit from a higher quality of life. (Rawls, 1958),

For industrial recession cities, incorporating Environmental Justice into urban planning has driven efforts to re-envision and repurpose vacant and deteriorating spaces through innovative regeneration projects. By revitalizing neglected areas and enhancing green spaces, cities can mitigate environmental hazards and bolster social equity. Cities like Detroit have embraced Environmental Justice principles by converting former industrial land into productive agricultural zones, thereby fostering economic growth and improving environmental quality. (Schilling and Logan, 2008) These conversions serve as a model for creating spaces that promote community well-being while addressing the historical imbalances that have disproportionately impacted disadvantaged neighbourhoods. Integrating Environmental Justice into urban planning represents a comprehensive approach to rectifying inequities and achieving sustainability, aiming to create healthier, more inclusive urban environments.

The integration of Environmental Justice within urban planning reflects a shift toward using spatial and environmental strategies to redress inequities in industrial recession cities. By advancing initiatives that prioritize equitable distribution of urban resources and sustainable growth, cities can enhance quality of life and ensure all residents can benefit from safe, accessible, and vibrant public spaces.

2.3. St. Clair-Superior in Cleveland

Cleveland is a typical example as the industrial recession city. It is a major city located in northeastern Ohio, U.S., rests on the southern shore of Lake Erie. As a prime example of the industrial decline affecting many Midwestern cities, Cleveland's location along a river and lakeshore fostered its development into a significant commercial and industrial hub during the late 19th century, attracting large waves of immigrants and experiencing robust population growth. However, by the 1960s, Cleveland's economy began to slow as manufacturing declined, and suburbanization trends gained momentum. This shift was further exacerbated by the restructuring of key industries, notably the steel and automotive sectors, leading to substantial job losses within Cleveland and the surrounding region. The industrial transformation left a lasting impact on urban land use, contributing to industrial pollution and complicating the equitable distribution of environmental resources. (Council, 2020)

St. Clair-Superior, a historic and well-known neighborhood on Cleveland's East Side, is bounded by E. 30th Street to the west and Martin Luther King Jr. Drive to the east. Known as one of Cleveland's oldest and most culturally diverse neighborhoods, St. Clair-Superior has retained much of its Polish and Slovenian cultural heritage while welcoming newcomers from various parts of the world. Initially, the community was predominantly composed of white residents of Eastern European descent. However, notable demographic shifts in the 1990s and 2000s transformed the neighborhood, and by 2020, approximately 75.6% of the residents identified as African American, 18.8% as white, and 5.8% as Hispanic. ("St Clair-Superior neighborhood in Cleveland, Ohio (OH), 44103, 44108 subdivision profile - real estate, apartments, condos, homes, community, population, jobs, income, streets," n.d.)

Despite this cultural vibrancy, St. Clair-Superior faces significant environmental and infrastructural challenges. Heavy industry and manufacturing plants were initially concentrated along the railroad tracks and high-capacity transportation roads lay on the north of St. Clair Avenue, a legacy of Cleveland's industrial expansion. However, with the impact of industrial decline, many of these former industrial sites and associated land in St. Clair-Superior have become vacant or severely underutilized. Such kind of vacant and gap zone also became a kind of block to the access of other functional spaces. Access to natural resources and recreational spaces remains limited due to infrastructural barriers, such as Interstate 90 and major

railroad tracks, which restrict access to Lake Erie, Gordon Park, and even nearby Rockefeller Park. Consequently, St. Clair-Superior experiences significant environmental resource inequities, as evidenced by poor infrastructure, unplanned vacant land, and limited access to public open spaces. These disparities result in lower health outcomes and diminished economic value for the area. Additionally, high levels of vacant land can foster the rate for violent crime, and restricted access to green spaces has adverse impacts on residents' physical and mental health. Such poorer reputation, in fact, inhibits economic development in the community, reinforcing the notion of environmental inequity within this community.

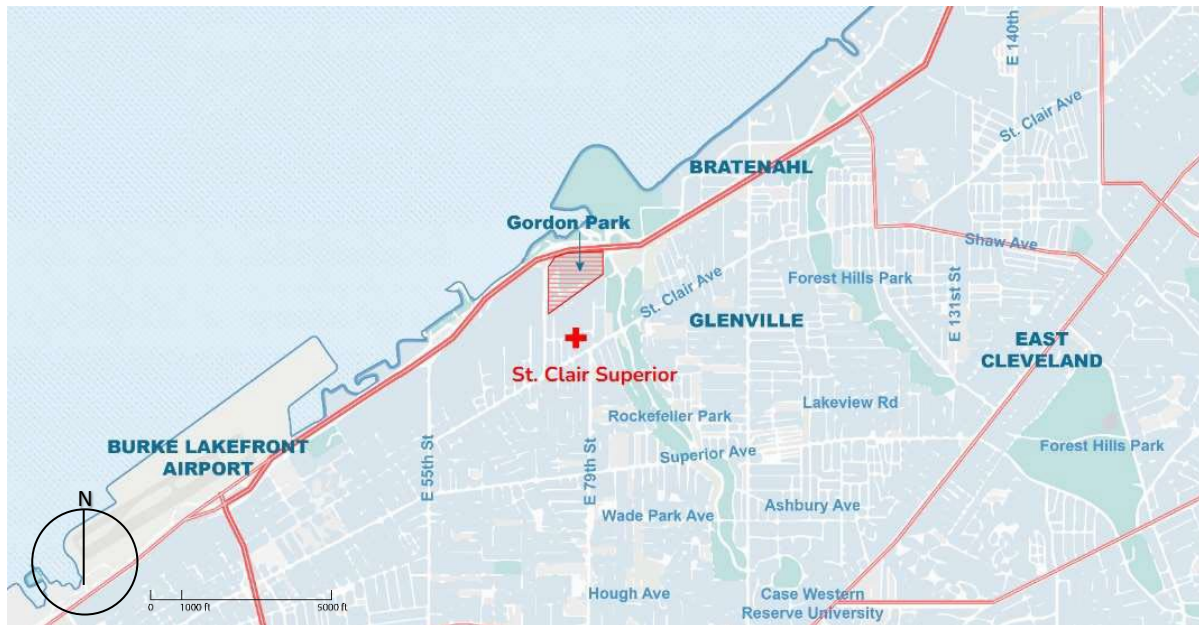


Figure 1. Mapping_ Location of St. Clair-Superior . Source: Author's own work.

The current situation of irrational categorization and inequity of environmental resources is faced by most disadvantaged communities in cities in industrial decline. Therefore, equality and environmental justice are expected by these communities. The primary goal is to explore how environmental resource inequities manifest in disadvantaged communities in industrial recession urban areas and to identify their causes. Using the St. Clair-Superior neighbourhood as a case study to propose planning strategies that achieve environmental justice in these areas.

3. Methodology

This study incorporates three primary methodologies for data collection and analysis: (1) Mapping and GIS tools were utilized to evaluate current land use patterns and transportation networks. Spatial data from the Cleveland Planning Commission was leveraged to analyze roadway accessibility for motorized, bicycle, and pedestrian pathways, as well as to examine the accessibility and distribution of public green spaces in comparison to other neighbourhoods; (2) Field investigations were conducted to update data on existing vacant lots and document residents' experiences walking through the neighbourhood. Using an Image-Walk method allowed for observing and recording visual impressions of specific spatial environments, revealing underlying issues in spatial planning and design; and (3) A focus group was organized to facilitate direct communication with residents, capturing valuable insights on hidden spatial use issues and unaddressed community needs. These discussions, along with co-design workshop, provided residents an

opportunity to raise relevant issues, needs, and suggestions, while semi-structured interviews further captured the diversity of resident perspectives. This research approach enables the development of comprehensive and inclusive urban planning strategies aimed at achieving environmental justice for neighbourhoods affected by industrial decline.

4. Results

4.1. Spatial Analysis of Infrastructural Barriers

The analysis of GIS data in Cleveland's St. Clair-Superior neighbourhood underscores how significant infrastructural barriers create stark inequalities in access to environmental resources, with specific spatial limitations preventing residents from fully utilizing the green spaces that surround their community. To the south, a railroad physically separates the neighbourhood from the southern public green spaces, such as Rockefeller Park, which is a major source of green space and recreational opportunity. The north side is similarly restricted, as Interstate 90 cuts off access to the Lakefront zone, including popular destinations like Gordon Park, the Lakefront Nature Preserve, and the soon-to-be-developed Cheers public green space. These major infrastructural barriers contribute to a broader sense of disconnection and limit residents' opportunities to engage with nature (see Figure 2). Additionally, pedestrian infrastructure within the neighbourhood remains highly fragmented and restricted, characterized by narrow sidewalks hemmed in by busy motor vehicle lanes, fractured pathways, and the steep topography of the area, which further complicates accessibility. Combined, these conditions create an environment that is not only physically but also socially limiting, resulting in a disjointed urban landscape that impacts residents' quality of life and restricts their access to nearby environmental resources (see Figure 3). (Bullard and Johnson 1997; Cohen and Hobson 2004)

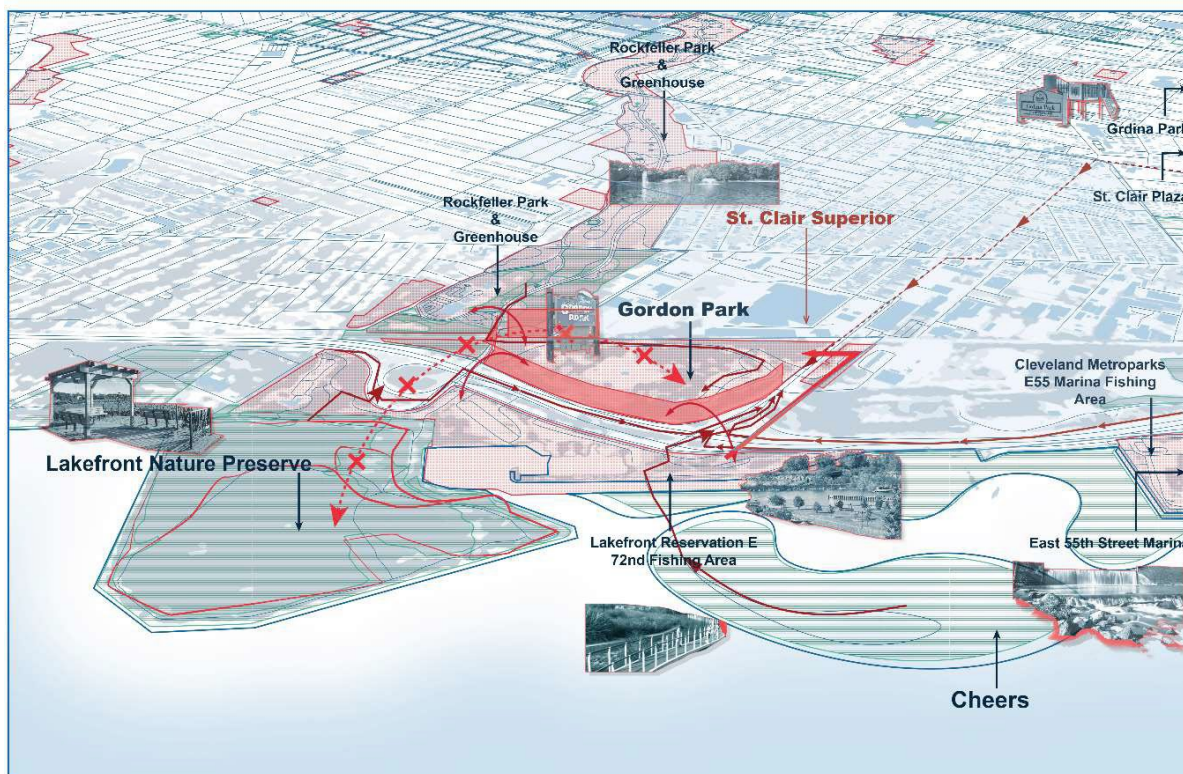


Figure 2. Analysis of Accessibility to Public Green Spaces . Source: *Author's own work.*

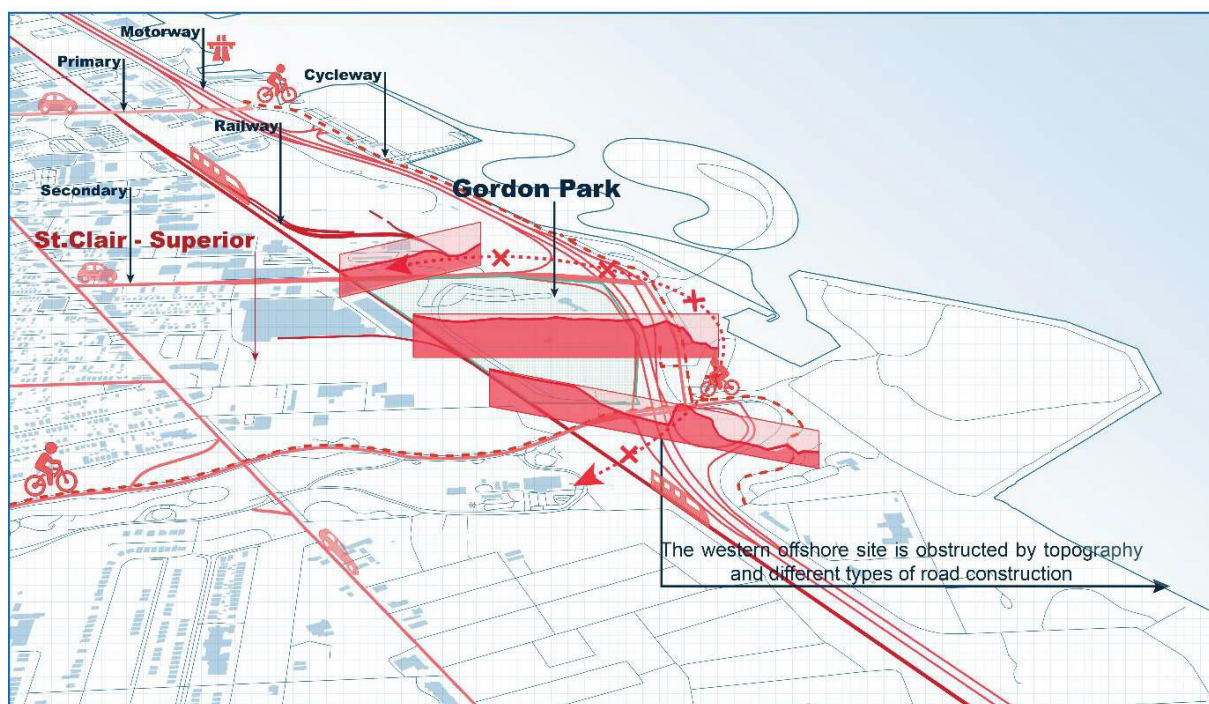


Figure 3. Analysis of Transportation. Source: *Author's own work.*

4.2. Social and Environmental Impacts Under Vacant Spaces

Field investigations, through both observational analysis and image-based assessments, provide a deeper insight into social and environmental challenges in the St. Clair-Superior neighbourhood, revealing how these issues affect community cohesion, public safety, and overall livability. Observations reveal visible signs of neglect in the neighborhood. Broken utilities, damaged public spaces, poorly maintained streetlights, and overgrown plants make the area feel unsafe and rundown. Vacant lots are scattered across residential areas, often sitting between houses, without any management. These empty spaces create gaps in the community and make people feel isolated. Many of these lots are overgrown and not taken care of. Their location near homes and limited visibility can lead to physical and emotional risks. This place, actually became hotspots for crime, adding to the neighborhood's unsafe reputation. Residents have shared concerns about safety and trust in their surroundings. Some parents or local residents here often avoid using outdoor spaces or letting their children play outside because they feel uneasy and unsafe. One mother shared that her fear for her child's safety prevents her from allowing outdoor, unsupervised play with worries about the risks from unfamiliar surroundings and neighbours, citing concerns about neighbourhood kidnappings and the limited visibility that the fractured urban layout provides. This environment stifles potential for organic social cohesion and limits daily interactions, resulting in a weakened sense of community trust and shared identity.



Figure 4. Analysis of Transportation. Source: Author's own work.

4.3. Cultural Needs and Community Feedback

The analysis of community dynamics, captured through interviews and a co-design workshop with local residents, emphasizes the need for cultural expression, identity-building, and a sense of belonging within the neighbourhood. Residents expressed frustration over the absence of public art, particularly murals, which are iconic in other Cleveland neighbourhoods and serve as vibrant expressions of local identity. Cleveland's mural culture, known for narrating local histories and fostering neighbourhood pride, is conspicuously absent in St. Clair-Superior, depriving residents of a visual and cultural link to their city, compared with the street views in the Downtown area. Residents expressed a strong desire for communal activities and public spaces that reflect their diverse social and cultural backgrounds, imagining a neighbourhood that not only meets their functional needs but also resonates with cultural meaning. One resident said,

'Although I know we don't have the financial support to turn our neighbourhood into a glamorous,

upscale community, I still want to have art and culture so that I can still be connected to this city.'

(Resident A)

The lack of accessible public art in the neighbourhood is not only a missed opportunity for aesthetic enhancement but also a barrier to establishing a cohesive neighbourhood identity that resonates with the broader Cleveland community, reinforcing a sense of disconnection.

5. Discussion

Based on these findings, a comprehensive strategy is proposed to address St. Clair-Superior's spatial, social, and cultural needs, focusing on improving accessibility, enhancing community safety, and fostering cultural revitalization within the neighbourhood, targeting for achieving Environmental Justice for this area.

5.1. Proposed Strategies for Accessibility and Effective Connection

The first critical component of this strategy involves improving access to green spaces through strategic infrastructural developments. Constructing underpasses beneath the railroad and flyovers across Interstate 90 would create direct links to major green spaces, such as Rockefeller Park, Gordon Park, the Lakefront Nature Reserve, and the upcoming Cheers public green space. These infrastructural enhancements would be designed with pedestrian safety and comfort in mind, incorporating adequate lighting, clear sightlines, and well-maintained paths to ensure usability for residents of all ages. Within the neighborhood, a network of pedestrian paths should be created to improve connectivity in both east-west and north-south directions, making it easier to get around the district and other public space Redesigned sidewalks - wider, well-lit and separated from traffic lanes - would create safer, more welcoming streetscapes for pedestrians, cyclists and children. Improved pedestrian infrastructure would encourage outdoor activities, promote physical and mental health and provide safer play opportunities for children, contributing to the well-being and engagement of the whole community.

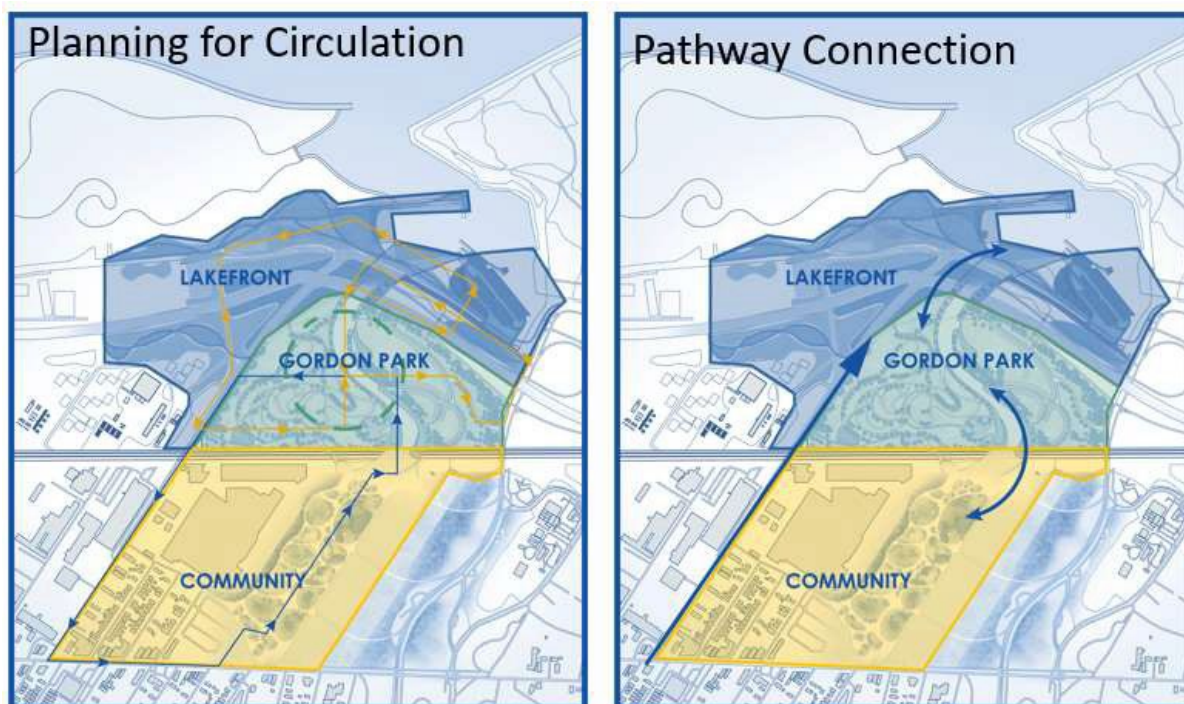


Figure 5. Proposed Planning Strategies. Source: *Author's own work*

5.2. Vacant Land Repurposing and Public Activities Revitalization

The second key element of this plan is to transform the vacant lots of St. Clair-Superior into active community spaces. These spaces could include playgrounds, mini or small farms, gardens or outdoor theaters. This change would solve several problems at once. It would make the area safer by eliminating the unsafe elements and feeling at the places where crime can occur to help residents feel more secure. These spaces would also enable people to meet, chat and take part in shared activities. They would bring together people of all ages and backgrounds from different cultures and races. These community spaces would give people a place to connect and feel like they belong, which could make the neighborhood look better and improve its reputation. Adding art to these spaces could draw visitors and make the area more adaptive and attractive, helping the local economy.

5.3. Cultural Identity Through Public Art

The last part of this plan is to bring cultural identity to the neighborhood through public art, especially murals. This would let St. Clair-Superior residents connect with the city's culture and feel proud and take pride of their community. Regular mural events, where local artists and residents create art and painting in mural showing the neighborhood's historical and cultural background, could strengthen ties with Cleveland itself. These projects would help residents share their stories through art, bringing people together and building pride in their neighborhood. Murals and other public art would make the area more attractive, serve as symbols of strength, and give residents a shared sense of identity. These events would help people form closer bonds and preserve the neighborhood's heritage.

Figure 6. Perspective for Connectivity. Source: *Author's own work*



Figure 7. Planning Strategies. Source: Author's own work

5. Conclusion

Cleveland's St. Clair-Superior neighborhood provides important lessons and vital guidance for cities dealing with industrial recession. Planning for equity and inclusion in these areas means more than improving green spaces or upgrading environmental resources with the connections among them. Besides, it also needs to consider and design the social, cultural, and emotional aspects that shape how residents interact with their surroundings and how then identify themselves. St. Clair-Superior, with its long history and challenges, shows how careful urban planning can fix uneven development, build stronger community ties, and protect the cultural and racial identity of disadvantaged groups.

For the field of regional planning, the St. Clair-Superior example highlights the importance of involving the community through engagement and co-design. These methods let residents share their needs and ideas, making them active contributors in shaping their neighborhood. This approach builds a sense of belonging, increases community ownership, and makes plans more effective by addressing the area's specific social and cultural needs. Work in neighborhoods like St. Clair-Superior shows that resources like parks, recreational spaces, and easy access to transportation are essential for improving public health, helping local economies, and supporting community well-being.

The St. Clair-Superior model offers a practical approach for other neighborhoods facing similar challenges. Reusing vacant spaces, focusing on sustainable redevelopment, and involving residents in design can address issues like disconnection, safety concerns, and the loss of cultural identity. Cleveland's efforts show how environmental justice can guide urban planning to create spaces that meet basic needs while supporting social connections, cultural expression, and emotional well-being.

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