Reconnect Consultants

CONNECTING PEOPLE TO POWER

A Community Energy Plan for South Shore

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THE STORY

Source: Chicago Architecture Center

INTRODUCTION

There has never been a more critical time to consider community energy planning. Climate change has had profound and devastating effects near and far, with the Chicago region experiencing extreme temperatures, immense rainfall with subsequent flooding, and abnormally heavy snowstorms. The consequences of a changing climate will only continue to increase in severity, with the greatest and most immediate threats facing vulnerable and at-risk populations. During a time when the country is finally beginning to confront its historical roots of racism and the ways in which systemic inequities persist in our communities, it is imperative that we turn our focus to planning resilient and equitable energy systems as part of the solution.

The planning process demands a broad understanding of the systems that produce, use, conserve, and renew energy. While energy is defined rather simply as the capacity to do work, we have expanded this understanding to include any shared source that produces vitality: **Energy is the source of power for all beings that gives vibrance to existence, that fuels our everyday life, that allows communities to be self-reliant and to withstand challenges. Energy serves to ensure human dignity and to enhance our quality of life.**

Energy is the thread that weaves together the fabric of our society, connecting us all to each other, to sustenance and power, and to opportunities to engage fully with the world around us. This plan is organized around our four major categories of energy: Electricity, Food, Water, and Connectivity.

At this precarious time of climate change, rising inequities, and a global pandemic, there are external threats that have the potential to unravel these tenuous connections and to disrupt our relationship with these essential energy sources. These forces have the potential to devastate communities, which is why people-centered efforts to restabilize, revitalize, and build resilience are necessary to confront present and future challenges.

Figure 1: South Shore Community Area

City of Chicago Data Portal, Cook County Data

EXECUTIVE SUMMARY

We identify as a group called **Reconnect Consultants** tasked with creating an energy plan for South Shore. Reconnect Consultants is an urban planning firm dedicated to reconnecting people to power through energy democracy projects, sustainable planning, and community-centered solutions. Although we are a coalition of UIC Master of Urban Planning and Policy students from different backgrounds, our vision and goals are informed by the needs that South Shore community organizations have expressed. This document is intended for use by residents, elected officials, and community groups interested in what energy planning and policy means for South Shore.

As global urbanization and modernization cause an ever-increasing demand for electricity, it is crucial for the world to transition from reliance on fossil fuels to renewable energy sources such as wind, solar, geothermals, and biomass. President Biden's early 2021 $4 trillion coronavirus economic recovery plan has its foundation in clean energy: a path to net-zero emissions by 2050 through an infrastructure overhaul touching every sector, green jobs, a huge push for electric vehicle expansion, and energy-efficient affordable housing.[1] Even earlier, in 2019, the City of Chicago committed to using 100% renewable energy to power all public buildings by 2025 and all buildings by 2035, and to electrify all Chicago Transit Authority buses by 2040.[2]

The trend toward renewable and localized energy is clear; however, the window of opportunity for community energy resilience and independence may be closing. With widespread support for renewable community energy systems in place even without specific plans, now is the time for neighborhood-specific planning, especially for a community such as South Shore that has experienced historic disinvestment. In addition to strong existing neighborhood organizations and community connections, partnership with the City of Chicago via existing programs like Invest SouthWest and proposed pilot programs will be vital to the imagined vibrant and resilient future. "Connecting People to Power: A Community Energy Plan for South Shore" proposes goals and strategies for each of the four elements of energy: electricity, food, water, and connectivity.

Electricity

Electricity channels energy to power our lives.

Locally-generated renewable and reliable energy provides green jobs and resilience from external threats. This plan includes goals to reduce energy burden through increased efficiency, to generate renewable power for the community, and to build energy independence and resilience at the community level. Among other initiatives, the electricity plan includes a proposed community microgrid and blockchain consumer-oriented app, grant-subsidized community solar farms, state-funded green job training, and a weatherization community cooperative.

Food

Food is the essence of life and brings us together through culture and tradition. Food systems harness energy for the continuity of human life and community.

Access to affordable nutritious food options and restaurants brings vibrancy, health, and communal space to a neighborhood. This plan includes goals to ensure residents' access to affordable and nutritious food and to develop a sustainable local food system. Food strategies include new grocery stores, farmers markets, and community gardening initiatives, as well as urban farming initiatives and a low-cost barrier food hall and small-business incubator.

Water

Water and energy systems are interconnected, holding the potential to enrich life or endanger it.

Given the disproportionate impact of flooding in the South Shore, as well as future forecasts of lakeside erosion and increase in rainfall, community resilience will be built on the ability to manage these hydraulic impacts. The goals of this section include protecting the Lake Michigan shoreline from erosion, enhancing stormwater management, and improving clean water access and education. Strategies to respond to erosion include creating a barrier of aquatic plants and coastal gardens, installing green infrastructure to mitigate flooding, and replacing lead pipes to ensure clean and healthy water access.

Connectivity

A resilient community builds strength through social, virtual, and physical connections between people, places, and ideas.

A community's ability to connect with one another, the city, and the world beyond strengthens education prospects, work opportunities, and social bonds. These goals include encouraging use of less carbon-intensive modes of transportation, creating a Municipal Broadband Network, and implementing public infrastructure that technologizes and connects the community through the internet, solar-powered street fixtures, green space, and public parks. Strategies to improve connectivity in South Shore include advocating for bus stop shelters and benches, building a fiber optic network, and transforming Rainbow Park into a technology hub.

South Shore's history of disinvestment from the City of Chicago highlights the importance of building strength and stability at the community level. As climate change worsens, community resiliency is even more vital. The South Shore energy plan ensures equitable access to the elements of energy that sustain life: electricity, food, water, and connectivity. These four components serve as the building blocks for the future of energy within South Shore.

Figure 2: How to Use This Plan

How Can this Plan be Used as...		
A South Shore Resident	**An Elected Official**	**A Community Group**
To learn about energy and promote energy resilience in the community	To identify policy areas that need to be addressed	To meet identified gaps in programs and workload
To understand actions already taken in the community	To plan for ways to fill service gaps from the City of Chicago	To identify partnerships with other organizations
To identify actions that individuals can take	To help conduct community assessment and evaluation	To foster participation in community groups

VISION + EQUITY STATEMENT

Vision Statement

Our vision is to restabilize the community through enhancing existing systems, to revitalize the neighborhood through the addition of new energy structures and sources, and to promote resilience to external threats through improving the integrity of the built environment. The pillars of our vision are Resilience, Restabilization, Revitalization, and the goals of our plan encompass these ideas.

Equity Statement

Equity is about giving more power to those who have less and removing structural barriers to equity and justice. In creating an energy plan for the community of South Shore, there is ample opportunity to address equity issues in areas including historic disinvestment as well as physical and virtual disconnection. Historically, energy production has been centralized, but with the proliferation of renewable energy, there is opportunity for local energy production and consumption.

The processes, programs, goals, and strategies proposed in the plan have been filtered through this framework to ensure that all align with our commitment to furthering equity as outlined in our vision. Rooted within and throughout the plan, a commitment to equity must persist throughout the implementation and lifetime of each strategy to ensure that all residents of South Shore can benefit from this energy plan.

THE COMMUNITY

LAND ACKNOWLEDGMENT

South Shore is one of Chicago's 77 community areas. It is located on the southeast side of Chicago and borders Lake Michigan.

We would first like to acknowledge that the city of Chicago resides on the traditional Territories of the **Three Fire Peoples - the Ojibwe, Odawa and Bodewadmi**. By making a land acknowledgment, we recognize that Indigenous peoples are the traditional stewards of the land that we now occupy, living here long before Chicago was a city and still thriving here today. As we work, live and play on these territories, we must ask what we can do to right the historic wrongs of colonization and state violence, and support Indigenous communities' struggles for self-determination and sovereignty.[3]

HISTORY

South Shore has a rich history and is an iconic Chicago neighborhood because of its close proximity to major institutions and attractions such as the lakefront, University of Chicago, Museum of Science and Industry, Jackson Park and the South Shore Cultural Center. It is also known for the South Shore Bungalow Historic District, a residential area containing over 200 Chicago bungalows and 20 other residential buildings built between 1911 and 1930. The district was also added to the National Registry of Historic Places in 2008.

The 1970s

community organizing efforts gain momentum

1973
ShoreBank opens in response to redlining and community disinvestment

1977
South Shore Cultural Center opens after coalition of residents save the building from demolition

1979
Environmental justice group People for Community Recovery founded

The 1990s

population changes due to deindustrialization, citywide housing policies

1992
South Works shuts down

1995
Summer heat wave and infrastructure failure leads to over 700 deaths across Chicago

2000
Plan for Transformation displaces public housing residents to South Shore

The 2010s

a burst of large-scale planning and private investment

2010
ShoreBank fails as a result of the recession

2016
Plans for Obama Presidential Center announced in neighboring Jackson Park

2017
Plans for Tiger Woods Golf Course on lakefront announced

Park District releases the South Lakefront Plan

South Shore residents in front of community mural. Source: South Shore Works

South Shore, a predominantly African-American community, has seen a 40% decrease in residents since Chicago's population peaked in the 1950s. The area remains one of the most densely populated neighborhoods on the south side of Chicago.

It is vital to recognize and understand the historical context of a community in order to plan effectively for its future. We have identified three main historical themes that have guided our plans for the future, becoming the three pillars of our vision: **Resilience, Restabilization, and Revitalization**. The history of South Shore is therefore acknowledged and honored in our plan, providing the lens through which we developed the goals and strategies.

South Shore has a deeply rooted tradition of resilience, with community organizations still active today that trace back to the 1970s. All across Chicago in the late 1960s and early 1970s, residents were engaged in community organizing and mutual aid efforts. In 1973, South Shore gained a reputation for its creation of ShoreBank, the first community development financial institution in the country. These efforts also led to the establishment of cultural and environmental institutions such as the South Shore Cultural Center in 1977 and the People for Community Recovery in 1979.[4]

This trend of resilient community organizing extended far outside of South Shore, with groups across the country organizing in response to widespread disinvestment. These efforts eventually led to the Community Reinvestment Act of 1977, which was designed to encourage banks and financial institutions to meet the needs of low-income borrowers.

Through our analysis of the history of South Shore, we have found that there is a need to restabilize the population, with citywide housing policies and job loss resulting in downward population trends starting in the 1990s.

The closure of the South Works steel plant in the 1990s caused significant population loss in South Shore, signifying the beginning of a period of destabilization.[5] The deaths of elderly and vulnerable populations during the 1995 summer heat wave reflected the need to address issues of equity, especially as climate change will continue to cause more frequent and more severe heat events in the future.[6]

At the end of the 1990s, the city's Plan for Transformation displaced public housing residents to nearby neighborhoods, including South Shore.[7] This era of population change and disinvestment underscores the current need to restabilize South Shore's population, and to safeguard against future external pressures of gentrification.

Recent efforts to revitalize South Shore have been made through a flurry of planning and large-scale public-private investments over the past ten years. However, these initiatives have historically lacked a specific energy focus.

With the announcement of the Obama Presidential Center for neighboring Jackson Park in 2016, the release of the South Lakefront Plan and Tiger Woods Golf Course in 2017, and three ongoing planning efforts for the community that were adopted in 2020, it seems that all eyes are on South Shore.

The three primary plans seek to assist in reshaping the community. Efforts to revitalize the community through planning and investment can be found in several ongoing efforts from 2020: INVEST South/West, The South Shore Corridor Study, and the South Shore Works' South Shore Quality of Life Plan. These plans broadly aim to attract investment into South Shore, retain a declining workforce, and motivate commercial incentives.

It is vital, however, that this wave of investment and planning is not followed by the often twin force of gentrification. In order to equitably revitalize South Shore, these efforts must center resident interests while also addressing sustainable and equitable energy solutions.

Invest South/West Launch Photo. Source: MKB Architects

Front Cover of 2020 South Shore Corridor Study. Source: City of Chicago

NEIGHBORHOOD PROFILE

Population

The total population of South Shore is 53,695, making up 2% of Chicago's population.[8] As with the City of Chicago, family households — homes in which one or more residents are related to the householder by birth, marriage, or adoption — are the majority structure. A nonfamily household refers to someone who lives either alone or with nonrelatives only. As of 2019, South Shore contained 49.3% family and 35.6% nonfamily households. This closely aligns with the 2019 breakdown of households in the City of Chicago as well: out of 1,066,829 total households, 47.1% are family households while 37.1% are nonfamily households.

Since 2010, the population of South Shore has begun to increase, a notable reversal from the steep population loss of previous decades. However, the population is drastically down from 1970, when the community boasted 80,660 residents.[9]

Figure 3: Population Change in South Shore and Chicago, 1970-2019

Year	Chicago	% Change	South Shore	% Change
1970	3,366,957		80,660	
1980	3,005,072	-10.75%	77,743	-3.62%
1990	2,783,726	-7.37%	61,517	-20.87%
2000	2,896,016	4.03%	61,556	0.06%
2010	2,698,831	-6.01%	52,450	-14.79%
2019	2,709,534	0.40%	53,695	2.32%

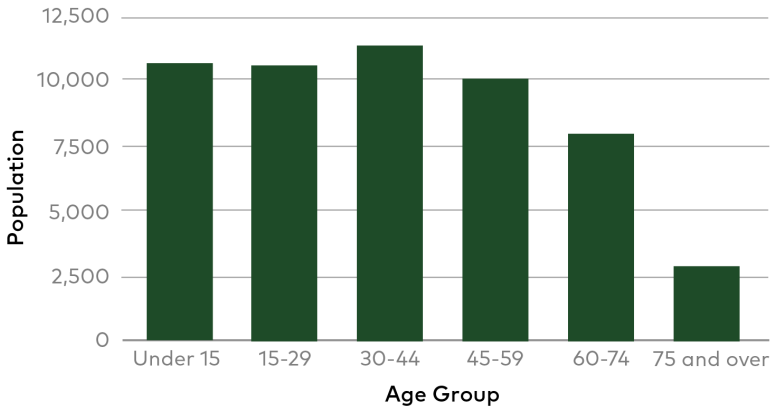
Source: ACS 2019

Age and gender

The median age of South Shore residents is 34 years old, comparable to the City of Chicago. Figure 4 in this section shows the breakdown of the South Shore population by age cohorts.

In South Shore, 57% of the population is female while 43% of the population is male. There are proportionally more females in South Shore compared to the City of Chicago, as 51.4% of the Chicago population is female while 48.6% of the population is male based on 2019 US Census data.[10]

Figure 4: Population by Age Group in South Shore, 2019



Source: ACS 2019

Race and ethnicity

South Shore is a predominantly Black or African American community. According to 2019 US Census data, 93.8% of community residents are Black, 3.6% are White, and 2.4% are Hispanic or Latinx. With only 2% of the city's population,

South Shore is home to 6.3% of all Black residents of Chicago.

Despite experiencing an overall decrease in population in the 1970s, the number of Black residents in South Shore increased by over 10% during the same period. The following decades saw a slight decline in the Black population of South Shore, but recent trends have shown an increase of 2% since 2015.[11]

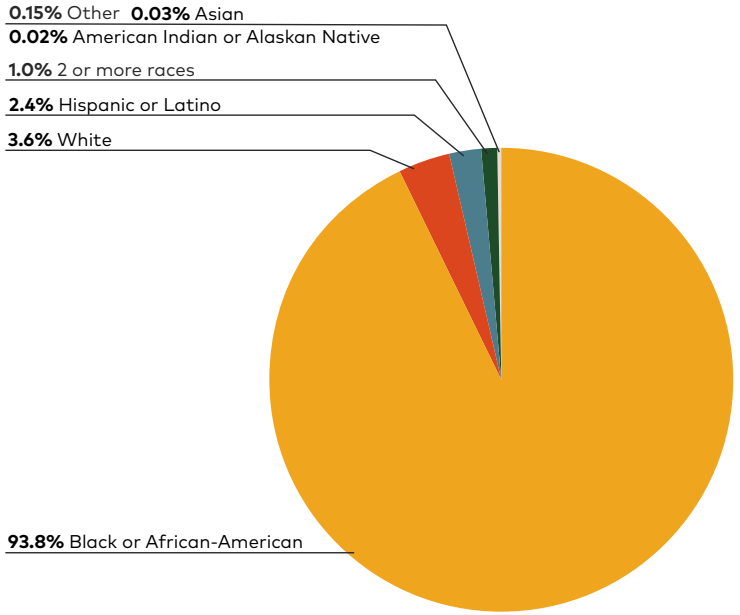
Income and poverty

South Shore sees lower incomes and higher poverty rates than many areas of Chicago and Illinois. US Census data shows that in 2019, the median household income for residents of South Shore was $33,092, which is $25,155 lower than that of the City of Chicago, and less than half that of Illinois. In 2019, 32.9% of South Shore residents' incomes were below the poverty level; this was about double the 2019 rates in Chicago and Illinois.[12]

Educational attainment

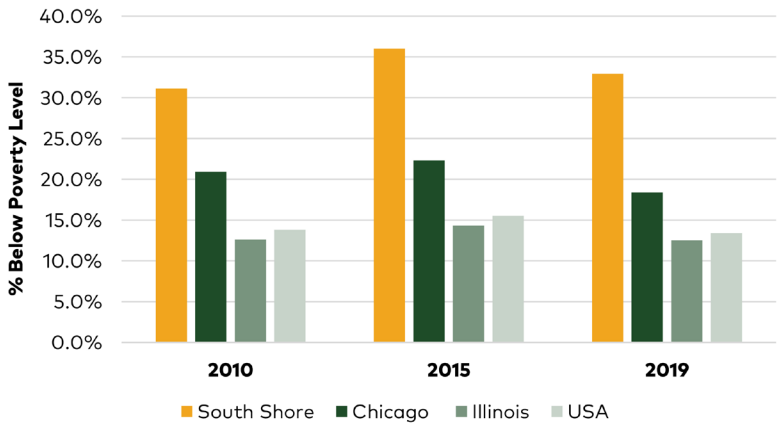
Educational attainment in South Shore overall is lower than that of Chicago, Illinois, and the US. In 2019, 17.51% of residents in South Shore had obtained a High School degree, 9.5% of residents had obtained a college degree, and 7.23% of residents had obtained a graduate or professional degree. Most adult residents of South Shore have some college but no degree (20.71%), which is proportionally higher than that of Chicago, Illinois, and the US.[13]

Figure 5: Race and Ethnicity in South Shore, 2019



Source: ACS 2019

Figure 6: Income and Poverty in South Shore, 2019



Source: ACS 2019

Mobility and connectivity

South Shore residents face difficulties related to mobility and connectivity. Based on 2019 US Census data, 43.4% of households in South Shore do not have access to a car, which is higher than that of Chicago, Illinois, and the US as a whole. South Shore residents drive alone to work in almost equal numbers to those who take public transit. With 41.62% of residents taking public transportation to get to work in 2019, South Shore residents are using public transportation at higher rates than in Chicago, Illinois, as well as in the US as a whole.

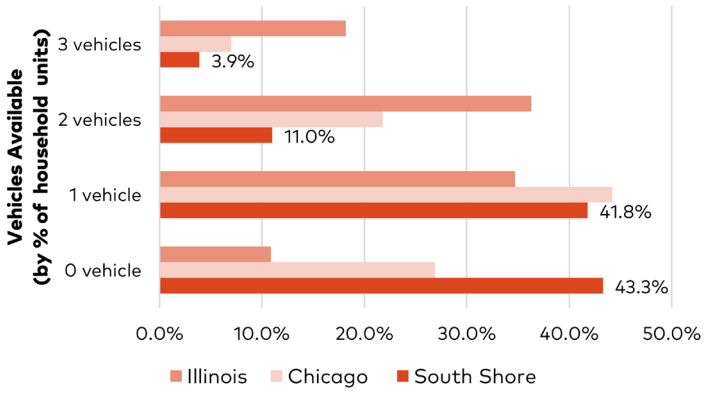
As the 2019 Census data also shows, only 36.18% of South Shore households have a computer, compared to 91% of Chicago households. Similarly, 54% of South Shore households have access to broadband internet compared to 83.6% of Chicago households.[14]

Economic characteristics/employment

Based on 2019 data, 48.5% of the South Shore population is in the civilian labor force. In 2019, South Shore had a civilian

Figure 7: Mobility in South Shore, 2019

Figure 8: Vehicle Accessibility, 2019



Source: ACS 2019

Legend:

- CTA Bus Line
- Metra line and stop
- Bike Lanes and Paths
- Divvy Station

Source: City of Chicago Data Portal, Cook County Data

unemployment rate of 16% (8.1% in Chicago), which had decreased by 6% since 2015. An estimated 38.7% of South Shore residents are not in the labor force. In South Shore, 76% of households include parents that both are in the labor force and have children under six years old, compared to 70% of similar households in Chicago.

The three most popular occupations in South Shore are management, business, science, and arts occupations; educational services, health care, and social assistance; and service occupations. About 3 of every 10 South Shore residents are employed in each of these three sectors.[15]

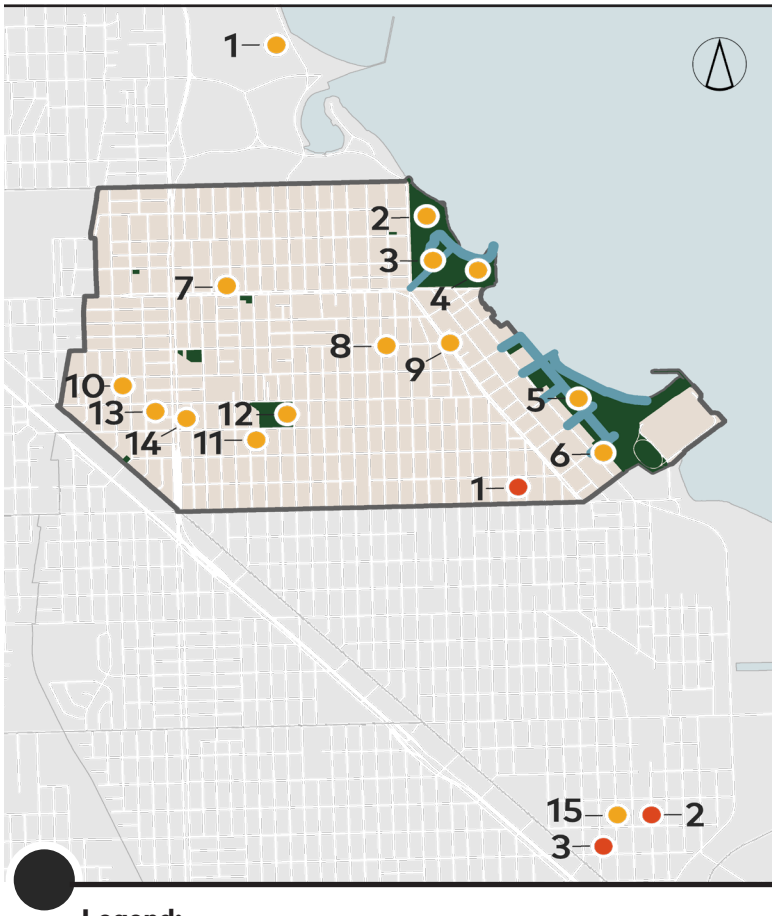
Institutions

South Shore offers a variety of community assets and engages with institutions throughout surrounding neighborhoods on the south side of Chicago. As mentioned before, South Shore's ample green space and lakefront access are obvious benefits to the neighborhood composition. Civic and institutional centers like the South Shore Cultural Center, South Shore Public Library, and local schools provide South Shore residents with access to educational and professional opportunities. Access to community advocacy organizations like Meadows Eastside Community Resource Organization, Alliance for the Southeast, and Centro de Trabajadores Unidos allows South Shore residents to unify through common challenges, beliefs, and ambitions.

Land Use

Land use in South Shore is dominated by clusters of detached single-family and multi-family residential homes. On South Shore's major corridors, S. Stony Island Avenue and E. 71st Street, commercial development provides universal access to retail services. South Shore also benefits from evenly distributed civic and educational facilities. The majority of South Shore's land use designated for parks and recreation exists along the Lake Michigan waterfront at South Shore Park, South Shore Nature Sanctuary, and Rainbow Beach Park. In this plan, we attempt to take advantage of South Shore's underutilized open space to address energy-related concerns.

Figure 9: Institutions and Community Assets in South Shore

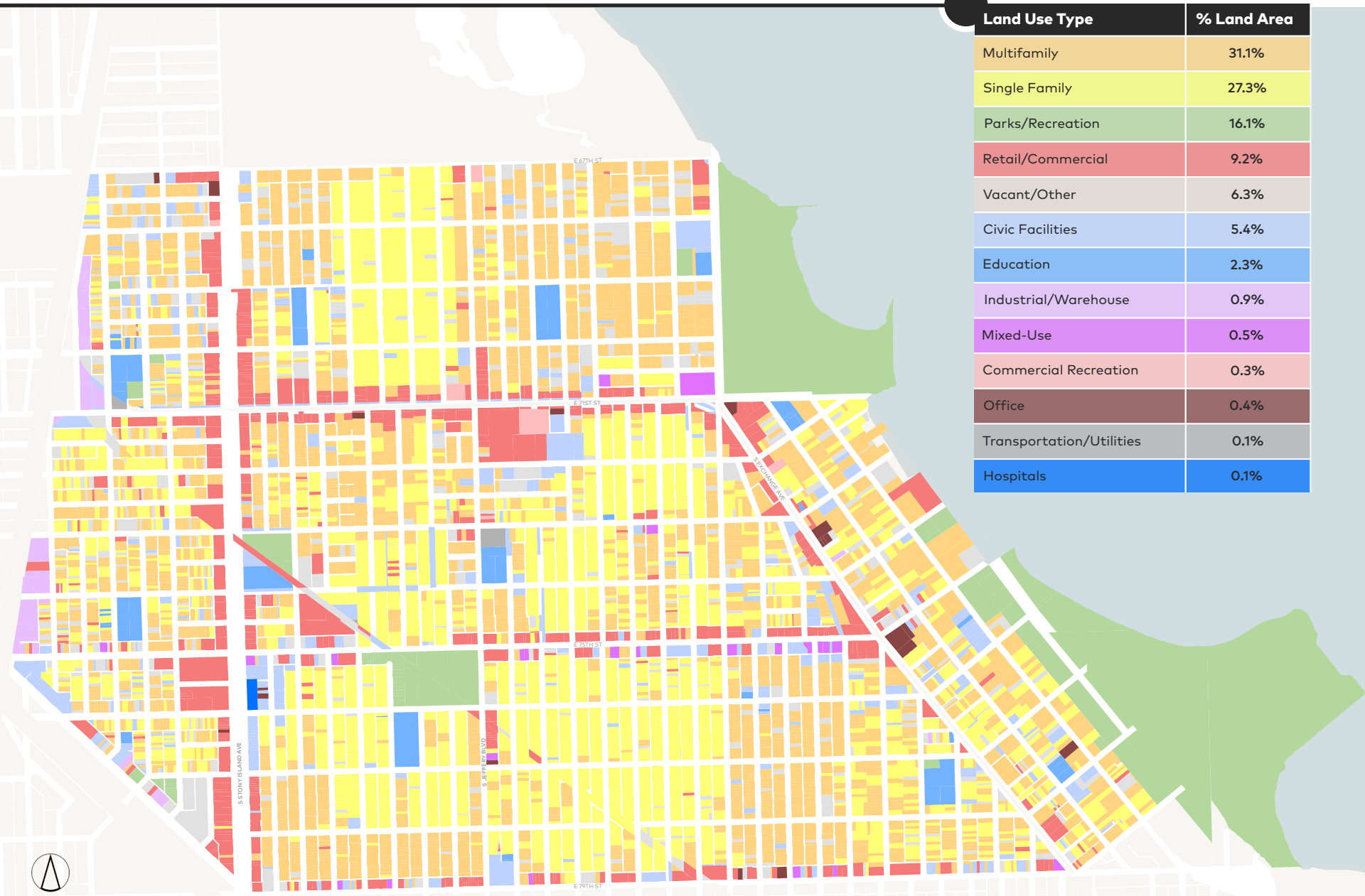


Legend:

- **Community Assets**
  1. Jackson Park
  2. South Shore Golf Course
  3. South Shore Cultural Center
  4. South Shore Nature Sanctuary
  5. Rainbow Beach Park
  6. South Shore Drive/I-41
  7. Neighborhood Network Alliance & South Shore Chamber of Commerce
  8. South Shore Hospital
  9. South Shore Public Library
  10. James Madison Elementary School
  11. South Shore High School
  12. South Shore International College
  13. Jewel Osco
  14. Jackson Park Hospital and Medical Center
  15. South Chicago Public Library
- **Institutions**
  1. Meadows Eastside Community Resource Organization (MECRO)
  2. Claretian Associates
  3. Alliance of the Southeast
- **Access to Lakefront**
- **Parks in South Shore**

Source: Google Maps

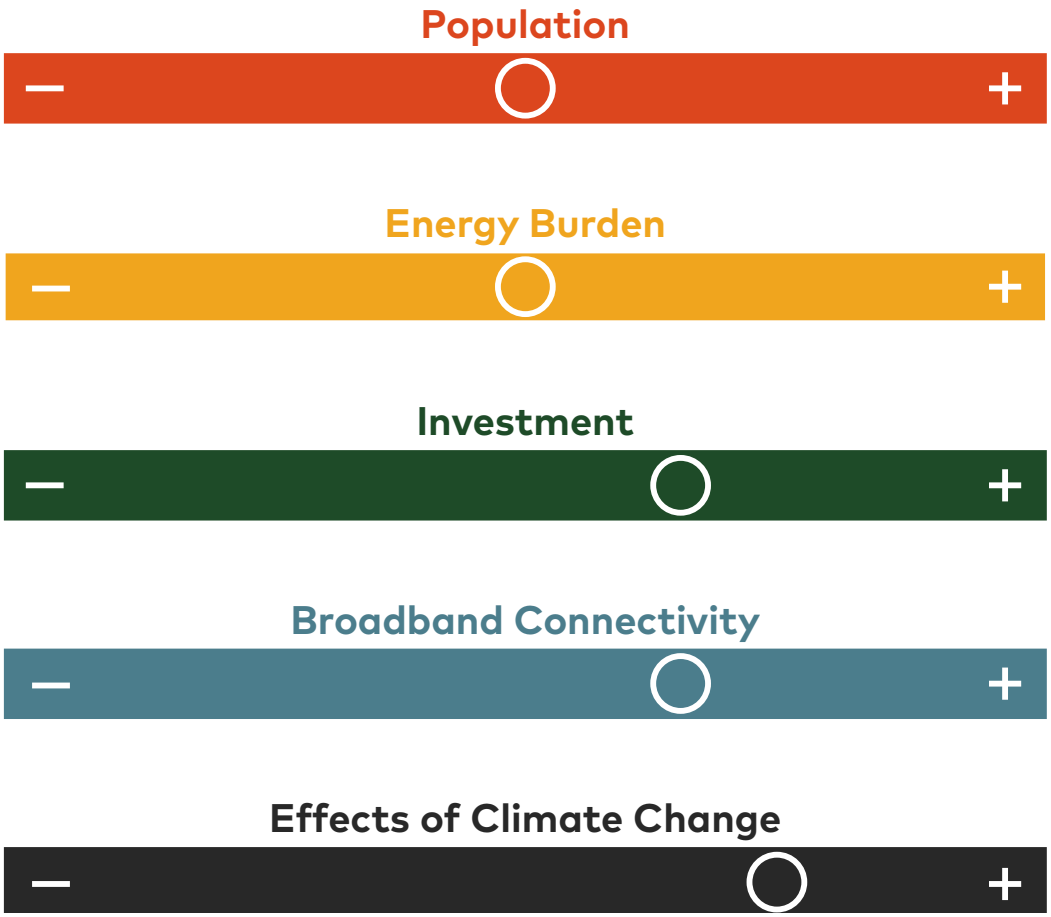
Figure 10: Land Use in South Shore



Land Use Type	% Land Area
Multifamily	31.1%
Single Family	27.3%
Parks/Recreation	16.1%
Retail/Commercial	9.2%
Vacant/Other	6.3%
Civic Facilities	5.4%
Education	2.3%
Industrial/Warehouse	0.9%
Mixed-Use	0.5%
Commercial Recreation	0.3%
Office	0.4%
Transportation/Utilities	0.1%
Hospitals	0.1%

Source: UrbanFootprint

THE FUTURE



The future of South Shore depends on many variables. We have identified the following factors to consider when planning for a changing neighborhood: population, energy burden, investment, broadband connectivity, and effects of climate change. Although historic trends predict a continued downward **population** trajectory, we anticipate that area development will balance this decline for a more stabilized future. We predict that community **energy burden** will be fairly stable. **Investment** in South Shore, due largely to more investment and development in neighboring communities, is expected to increase slightly. **Broadband connectivity** will also increase slightly, due to current efforts within the City of Chicago and South Shore. **Effects of climate change**, locally and around the world, will greatly increase. South Shore will continue to face local issues of shoreline erosion, increased frequency and intensity of storms, and greater fluctuation in temperature, along with ripple effects from global climate change.

THE PLAN

EVALUATION CRITERIA

The evaluation criteria outlined below establish the framework by which we determined each goal and strategy proposed in this plan. Rooted in our vision, the evaluation criteria served as a filter through which we could compare the strengths and weaknesses of alternative goals and strategies we considered in the plan-making process. We specifically looked at equity, resiliency, sustainability, and community feasibility, and asked ourselves the following questions:

EQUITY
Does this approach address the needs of all residents, especially the most vulnerable?
Are the benefits of this approach accessible to all residents?

RESILIENCY
Is the approach feasible in the long-term?
Can the approach endure future economic, social, and environmental changes?

SUSTAINABILITY
Do the benefits of the approach retain their value or utility over time?
Does the approach maintain the availability of resources for future generations?

COMMUNITY STABILITY
Will the approach ensure residential stability?
Does the approach acknowledge the community's assets and limitations, and honor the existing conditions of South Shore?

Each goal and its associated strategies must be uniquely measured to capture the rate of success in meeting the intended impact. Highlighted within the Goals and Strategies section, the Indicators of Success are a continuation of the evaluation criteria, but tailored to each goal.

COMPLEXITY is evaluated for each strategy on a scale of 1-3, based on the difficulty of implementation (feasibility) as well as its interconnectedness with other strategies.

ELECTRICITY

ELECTRICITY

Electricity channels energy to power our lives. By convention, electricity and energy have become synonymous. However, as we consider the deeper, more complex, and interdependent systems that govern cities and daily urban life, we find that energy manifests itself in several different forms - electricity and fuel being only some of them.

Food, water, and connectivity systems all have the potential to produce, conserve, or use electricity, and therefore each of the following goal sections are closely linked to electricity and fuel. Within this complex web of energy connections, electricity and fuel systems simultaneously drive climate change through the use of fossil fuels while also remaining vulnerable to severe disruptions in capability due to climate-related events.

Severe weather has the potential to destabilize our communities and cut off access to electricity, as seen with the recent energy disaster in Texas.

As cities remain dependent on the fossil fuel industry, fears regarding the long-term impacts of climate change loom large as households struggle to pay their electricity and gas bills. Energy issues can be addressed at various scales, but ultimately, human livelihood is at stake.

Our goals address this complex problem at individual and community scales: we seek to restabilize the community through cooperative ownership models, community capital funds, and green jobs; to revitalize the community through renewable energy access, and to build resilience to external energy disruptions through a community microgrid.

GOAL 1
Increase energy efficiency to reduce energy burden

GOAL 2
Generate renewable community energy

GOAL 3
Build energy independence and resilience at the community level

GOAL 1: INCREASE ENERGY EFFICIENCY TO REDUCE ENERGY BURDEN

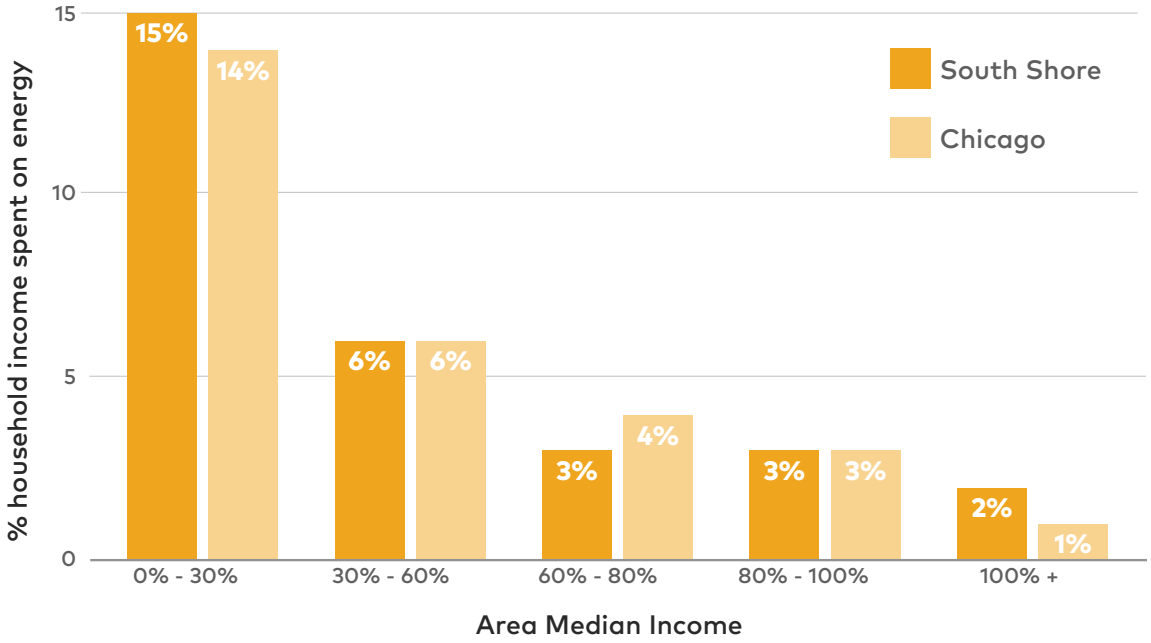
This goal focuses on reducing home energy burden for all South Shore residents. Energy burden is defined as the percentage of a household's income spent on energy-related costs, specifically electricity and natural gas. While energy usage among the average South Shore resident is less than half that of the greater Chicago area resident, a greater percentage of South Shore residents are energy burdened, with the most burdened residents spending up to 15% of their income on energy costs.[16] In order to reduce energy burden in South Shore, this plan strives to reduce the cost of energy and the amount of energy needed to thrive.

STRATEGY 1.1

Community weatherization fund

Increased energy efficiency can greatly reduce energy burden. Weatherization projects, including energy efficient windows and appliances as well as green roofs, can assist in this goal, while a community fund ensures that residents do not bear the cost burdens of implementation. As shown in the Figure 10, energy burden affects low-income residents throughout Chicago, but this is particularly evident in South Shore, with over ⅓ of residents living below the poverty line. Additionally, tenants in South Shore interviewed during the ongoing COVID-19 pandemic cited building repairs as a significant issue.[17] A crucial element of this strategy is emerging concerns over the high level of disrepair and repairs needed, particularly in buildings being flipped to private developers.[18]

Figure 11: Energy Burden in South Shore and Chicago, 2016



Source: Low-Income Energy Affordability Data (LEAD) Tool

PARTNER FEATURE: ELEVATE ENERGY

Elevate Energy is a national organization headquartered in Chicago that provides comprehensive technical assistance and education programs around energy efficiency, clean energy, and affordable housing to underserved communities.[25] As South Shore considers its housing and energy needs, Elevate Energy would be a valuable partner. For example, in 2016, Elevate Energy worked with a South Shore property owner to inspect the building, recommend upgrades, and connect to contractors for energy efficiency improvements. Overall, the project cost $85,000 for upgrades to one 23-unit multifamily apartment building, and resulted in 30% annual savings for the owner.

ELEVATE

A Community Weatherization Fund would be facilitated by a community institution such as South Shore Works. All new construction projects would pay a new construction fee into the fund, which would then be distributed into the community to support weatherization projects in older residential buildings. Building owners receiving weatherization funds would commit to a rent freeze in order to ensure tenants are able to benefit both from energy savings as well as stable, affordable housing prices. Weatherization can partially address housing quality concerns, while also reducing energy burden through savings on energy-related costs. A community weatherization fund could anticipate and address concerns regarding gentrification and the increased hidden costs for residents associated with new construction and property improvements.

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY 1.2

Worker-owned cooperatives for weatherization projects

In order to carry out the weatherization projects funded by the Community Weatherization Fund, South Shore residents and stakeholders should create a worker-owned cooperative, employing and empowering local residents to control their energy future. The cooperative would be owned by workers and governed

STRATEGY IN ACTION: NEW ERA WINDOWS

New Era Windows is a worker-owned cooperative in Chicago that builds energy-efficient windows. As a worker-owned cooperative, all workers are also owners and their business model prioritizes local employment and economic democracy over profit maximization. New Era Windows provides stable, dignified work while producing high-quality, energy-efficient products. Workers earn equal wages, and have equal votes in decision-making processes.

"In 2008, the boss decided to close our windows factory on Goose Island and fire everyone. In 2012, we decided to buy the factory for ourselves and fire the boss. We now own the plant together and run it democratically."[26]

With $500,000 raised from The Working World - a national nonprofit that provides financing and business support to cooperative businesses in low-income communities - 23 former employees were able to collectively purchase the equipment for the workers to run and operate their own cooperative.[27] New Era Windows also received support from the United Electrical Workers Union and the Chicago-based Center for Workplace Democracy throughout the process of taking over the factory. While restructuring from a traditional business to a worker-owned cooperative, New Era Windows received enormous support from their community as they sought to protect local jobs and worked to improve the energy efficiency of neighboring homes and businesses. This structure provides an ideal model for building a more energy-efficient neighborhood while also prioritizing local employment and economic democracy.

Worker-owners working at New Era Windows. Source: The Working World

democratically, and could utilize community weatherization funds, some individual contributions, and other clientele to upgrade residential and commercial spaces and increase energy efficiency - both in South Shore and in Chicago more broadly. This would work to address both weatherization needs and employment concerns throughout South Shore. Since the closing of the Steel Works plant in 1992, South Shore has experienced severe employment and population decline.[19] Between 2014-2018, South Shore had an average unemployment rate of 17.4%, which is almost double Chicago's average unemployment rate.[20] Worker cooperatives provide better job stability in the face of shifting labor markets and industrial decline. In fact, a 2019 study of worker cooperatives in the United States found that cooperatives have a 7% higher chance of surviving their first six to ten years compared to other small businesses.[2122]

Existing business support systems in South Shore include the South Shore Chamber of Commerce Small Business Center, and a cooperative could be piloted through a partnership with this center and with UIC researchers. Other business support outside of South Shore includes Centro de Trabajadores Unidos, the Illinois Worker Cooperative Alliance, and Chicago Rehab Network. Finally, this new cooperative could potentially learn from, and collaborate with, the existing weatherization worker cooperative called New Era Windows.

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY 1.3

Community resource campaign

Some renters and homeowners may seek less intensive and invasive energy conservation strategies. A possible solution is a do-it-yourself (DIY) energy conservation kit campaign that could facilitate the distribution of resources from city and state programs. DIY energy conservation kits include LED light bulbs, weather-stripping tape, water aerators, and other gadgets to conserve energy and water. LED light bulbs, for example, can use up to 80% less energy than incandescents, and can lead to savings of $75 a year when replaced throughout the home. The kits could also include instructions for installation, as well as resources for residents to seek energy assessments and contact information for the weatherization cooperative.

Complexity

Key Indicators

STRATEGY 1.4

New building standards

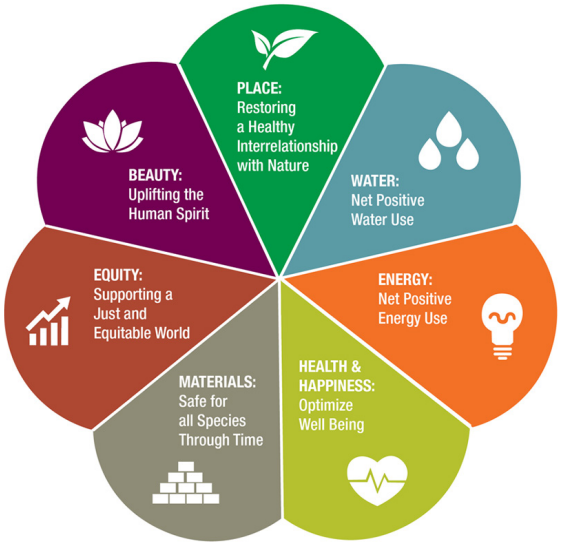
To encourage building efficiency, sustainability, and regenerative design, this plan recommends that all new construction in South Shore meets the Living Building Challenge Certification standards. The Living Building Challenge emphasizes not only mitigation of negative environmental impacts, but also movement toward regenerative and net positive environmental impacts. The standards are composed of seven tenets: Place, Water, Energy, Health + Happiness, Materials, Equity, and Beauty, each of which includes strategies such as material sourcing, equitable access, and place-based use.[23]

These new building standards are vital, as all new developments need to be as energy efficient and climate resilient as possible. While these standards would increase the cost of new construction in South Shore, there are a variety of funding options that could be used to subsidize these costs. The standards would only be applied to new construction in order to prioritize weatherization efforts on existing structures and to de-incentivize the demolition of South Shore's existing housing stock as the threat of gentrification looms.

Complexity

Key Indicators

Figure 12: Living Building Challenge Performance Requirements



Source: Williams College

STRATEGY 1.5

Closed loop system for corridor businesses

In order to strengthen the economic viability and environmental sustainability of South Shore corridor businesses, the South Shore Chamber of Commerce would sponsor the creation of a system for recycling commercial food waste. Waste would be transformed into viable products for use by other businesses, including compostable utensils and plates as well as nutrient-rich soil to support urban agricultural efforts.[24] This system could be run by an external business operation or by a governmental entity, such as the South Shore Chamber of Commerce, but would require initial start-up costs that may be covered, in part, by community investors.

Waste output from businesses can also provide a sustainable and consistent source of energy in a feedback loop to businesses. As the community continues to build and thrive, this system could ensure that businesses stay sustainable both environmentally and financially. The closed-loop system also reduces costs for businesses, increasing incentives for new businesses to relocate or start-up in South Shore.

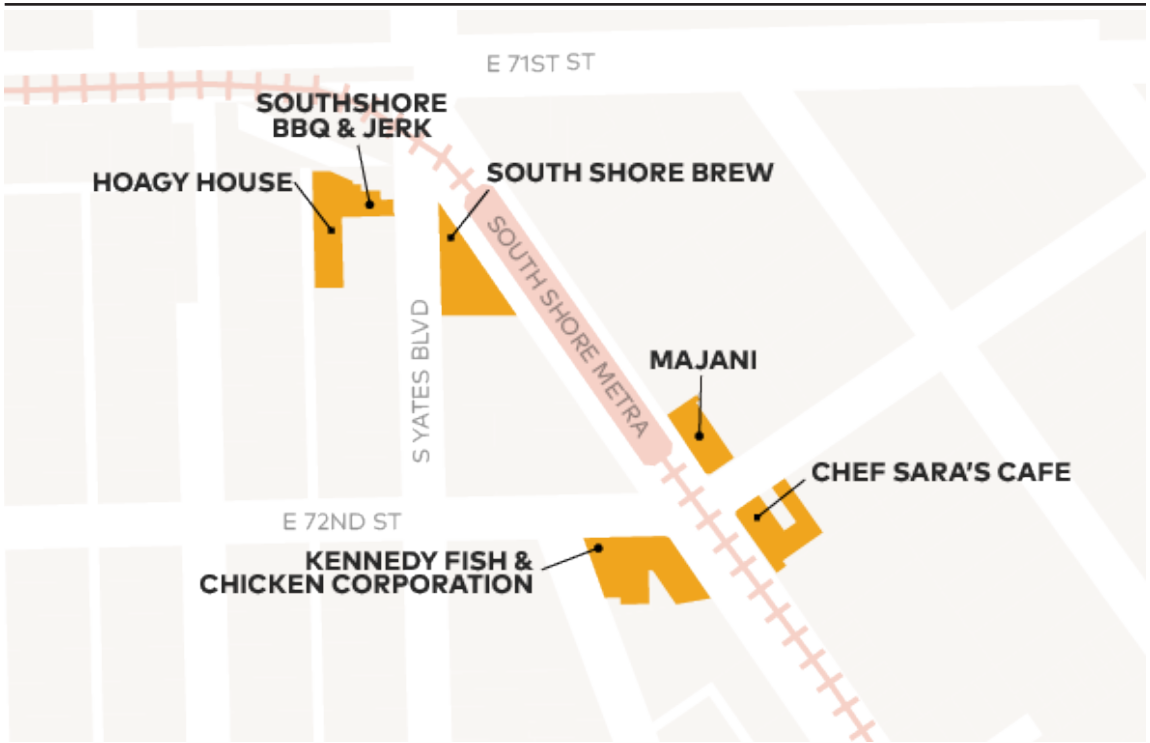
The ideal location for this pilot closed loop system is at the triangle interchange of S. Yates Boulevard, S. Exchange Avenue, and E. 72nd Street. Within this block radius there are five restaurants, a coffee shop, and a cocktail bar, all of which could be candidates for this program. The specific recycling systems depend on the outputs of the businesses that choose to participate, but there are a variety of applicable food byproducts. This model would have the potential to be replicated across the community and the city.

Complexity

Key Indicators

Cross-Energy Connections

Figure 13: Proposed Location of Closed Loop System of Food Businesses



Source: City of Chicago Data Portal, Cook County Data

GOAL 2: GENERATE RENEWABLE COMMUNITY ENERGY

This goal focuses on different ways to generate renewable energy locally and through community initiatives. In light of the climate crisis the world is facing, locally generated renewable energy systems are receiving a lot of attention. Several actions highlight this: for example, 19 states and D.C. have recognized the benefits of shared renewables by encouraging their growth through policy and programs. Furthermore, over the next five years, the US community solar market is expected to add as much as 3.6 gigawatts, enough to power roughly 770,000 homes.[28]

STRATEGY 2.1

Community solar projects

Community solar projects serve to provide economic and environmental benefits of a solar plant to residents who can't install systems on their home, including renters and homeowners whose rooftops need repairs. This translates into an offsite solar powered plant whose electricity is shared among several properties. The initiative aims to protect underserved communities from environmental challenges by applying innovative solutions to achieve equitable access to locally generated clean energy. One of the advantages of this system is that it does not require a particular type of house or building, meaning the power can target different types of people - contributing to more equitable energy allocation. A notable case study of this strategy is the "Solar For All" project in Washington, D.C., which was able to reach 100,000 low-to-moderate income families in two years.[29]

There are several community solar project models that planners can choose from, each one having advantages and limitations which are presented in the table below by the US Department of Energy. The choice of one model depends on the bigger goal of our community energy plan. The three most commonly used models are the "Utility-Sponsored Model", in which residents can participate in the operation of the project that is owned by a utility; the "Special Purpose Entity (SPE) Model", a business enterprise with individual investors joining; and the "Non-Profit Model", which is owned by a charitable non-profit corporation.[30]

Each of these models differs in terms of credit system. The most common one, which is also the one most suitable to our goal, is the "Utility-Sponsored Model." Consumers subscribe by contributing with either an up-front or an ongoing payment and then receive a payment or credit on their electric bills in exchange. This credit is proportional to their contribution and how much electricity the solar project produces.[31]

There are several considerations in establishing a community solar project. For example, depending on the characteristics of the utility, solar farms can be exempt from some sources of funds or incentives, such as federal income tax. Furthermore, in terms of the current limitations of implementation, there are no community solar farms that service South Shore. In addition, an anchor tenant or an owner should be selected; depending on the chosen model, this can be a nonprofit, a public facility, or a third party. Sometimes, anchor tenants are subscribers that have a large portion - but no more than 40% - of the solar project. Finally, like other strategies in this goal, the project would need to demonstrate community engagement through community outreach, education, and creation of jobs.[32]

Figure 14: Community Solar Project Models

Administered by	Utility	Special Purpose Entity	Non-profit
Owned by	Utility or 3rd party	SPE members	Non-profit
Financed by	Utility, grants, ratepayer subscriptions	Member investments, grants, incentives	Donor contributions, grants
Hosted by	Utility or 3rd party	3rd party	Non-profit
Subscriber Profile	Electric rate payers of the utility	Community investors	Donors
Subscriber Motive	Offset personal electricity use	Return on investment; Offset personal electricity use	Philanthropy
Long-term Strategy of Sponsor	Offer solar options Add solar generation (possibly for Renewable Portfolio Standard)	Sell system to host Retain for electricity production for life of system	Retain for electricity production for life of system
Examples	Sacramento Municipal Utility District – Solar-Shares Program United Power Sol Partners	University Park Community Solar, LLC Clean Energy Collective, LLC	Solar for Sakai

Source: U.S. Department of Energy

Complexity

Key Indicators

Workers installing rooftop solar panels. Source: U.S. Department of Energy

STRATEGY 2.2

District heating

This strategy promotes a system for distributing heating or cooling throughout a neighborhood. The system is generated in a centralized location and dispersed through a system of insulated underground pipes for residential and commercial requirements such as space and water heating.

Such a system works efficiently in a city like Chicago, as the severe cold weather leads to a great amount of energy consumption for heating. Choosing to apply a community district heating system would create an effective economy of scale while avoiding excess energy consumption.

One of the great benefits of this system is its ability to cover large areas with lower costs compared to other systems. Other benefits include saving energy, space, and costs of buying equipment for heating. Long term benefits include reducing long-term emissions through the use of recovered heat instead of gas or other fossil fuel-generated electricity.

Several technologies were discussed recently concerning the technical implementation of the system and how best to optimize it. Combining district heating with a cogeneration plant, also referred to as a combined heat and power plant (CHP), is a cheaper method of cutting carbon emissions than a heat-only boiler station.[33]

The key to implementing a district heating system in South Shore is to partner with companies who have already built similar systems elsewhere, such as the Seattle Steam Company's district system operated by Enwave. This company offers district energy systems to several areas in Chicago. One of Enwave's projects was the expansion of their network across the river to feed the old historic Post Office of Chicago.[34] Another viable option would be partnering with public entities such as the City of Chicago or global associations such as the International District Energy Association (IDEA).[35]

Complexity

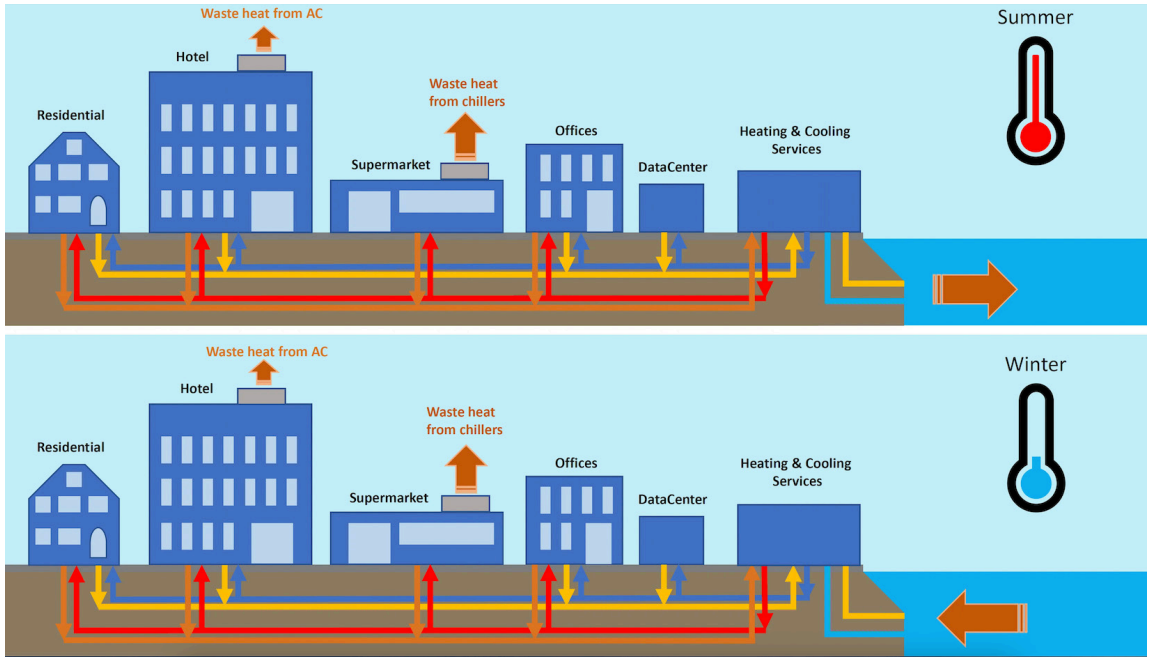
Key Indicators

STRATEGY 2.3

Offshore wind farm on South Works site

Wind farms are sites with high concentration of wind turbines producing electricity. Location is crucial for wind farms as it directly affects their performance. A successful location would have suitable wind conditions, accessibility to electric transmission, and standardized local electricity prices. Despite Chicago's nickname as "The Windy City," the city only derives 6.83% of its energy from wind.[36] While this figure increases every year, the city's potential for further wind production needs to be addressed.

Figure 15: District Heating System



Source: Corix-Cleveland Thermal

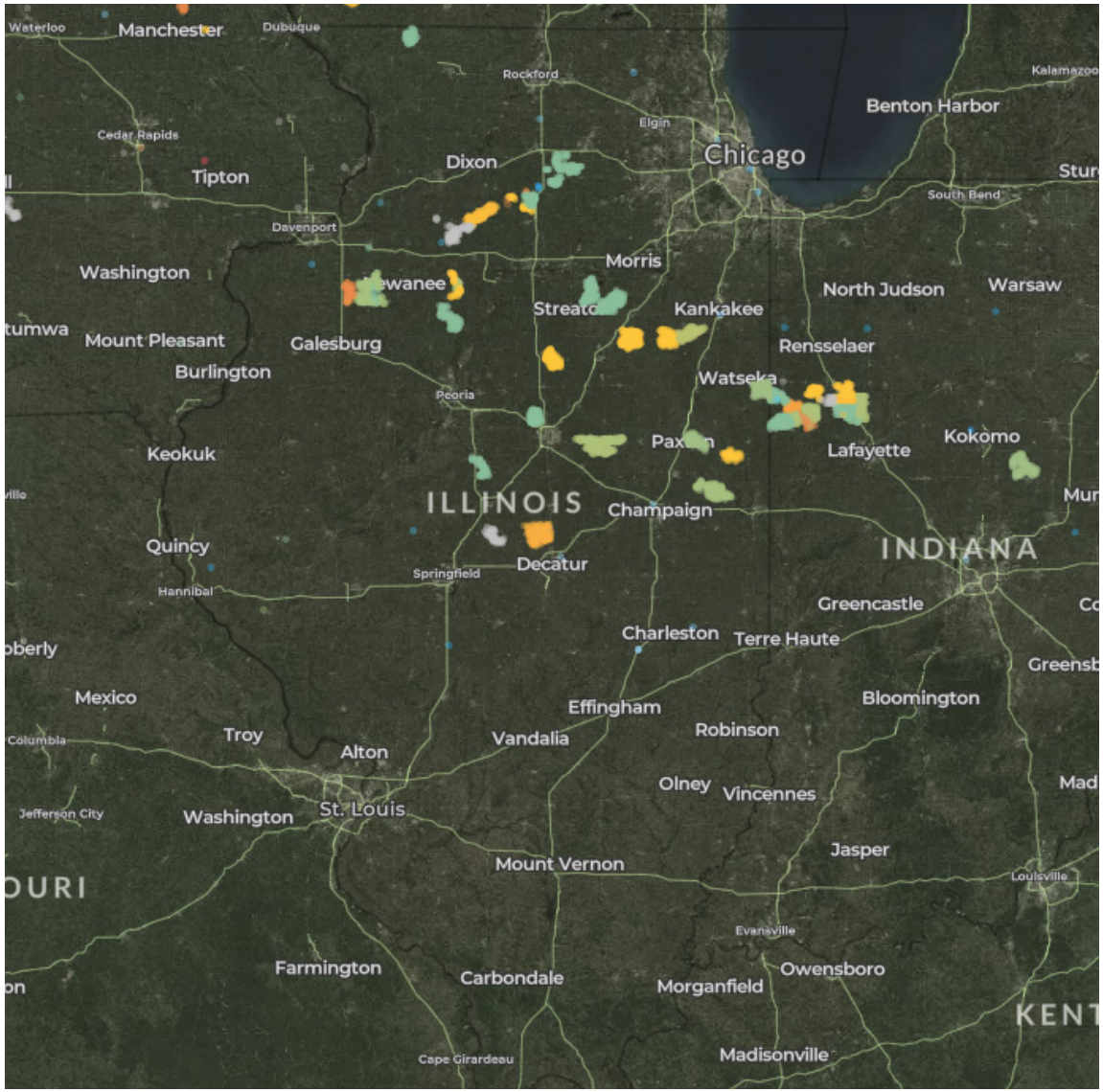
According to the Windexchange map, the area with the most wind in Illinois is the center of the state, which is where most wind farms are currently located.[37] However, another potential location frequently overlooked is Lake Michigan. The Lake Michigan Wind Power Act passed by the Illinois General Assembly in 2013 emphasizes its capacity for future wind production. The Offshore Wind Energy Economic Development Task Force studied the feasibility of planting wind turbines in the lake and building an offshore wind farm in Evanston.

Although there is ' - in Rhode Island - there is an ongoing discussion regarding the US Steel South Works site. It presents not only great potential for a wind farm, but also an opportunity for economic investment.[38] South Works is a 440-acre site of a former steel mill that closed in 1992. Since then, numerous developers have tried and failed to build housing and shopping developments in its place. A wind farm, either on the site or nearby offshore, would provide affordable and renewable energy to the South Shore community, bring tax revenue and construction jobs, and revitalize a site that has been long abandoned.

Complexity

Key Indicators

Figure 16: Wind Energy Potential in Illinois



Source: U.S. Department of Energy

GOAL 3: BUILD ENERGY INDEPENDENCE AND RESILIENCE AT THE COMMUNITY LEVEL

This goal focuses on building energy independence and resilience at the community level. The transition from centralized fossil-fuels to decentralized renewable energy generation is a unique opportunity for communities. Energy Resilience provided through a community microgrid will guard the community against the increasing threat of climate change. Energy Independence provides not only power, but also a burgeoning economic opportunity for the community, as current Illinois policy offers subsidized job and business development training in green energy fields.[39]

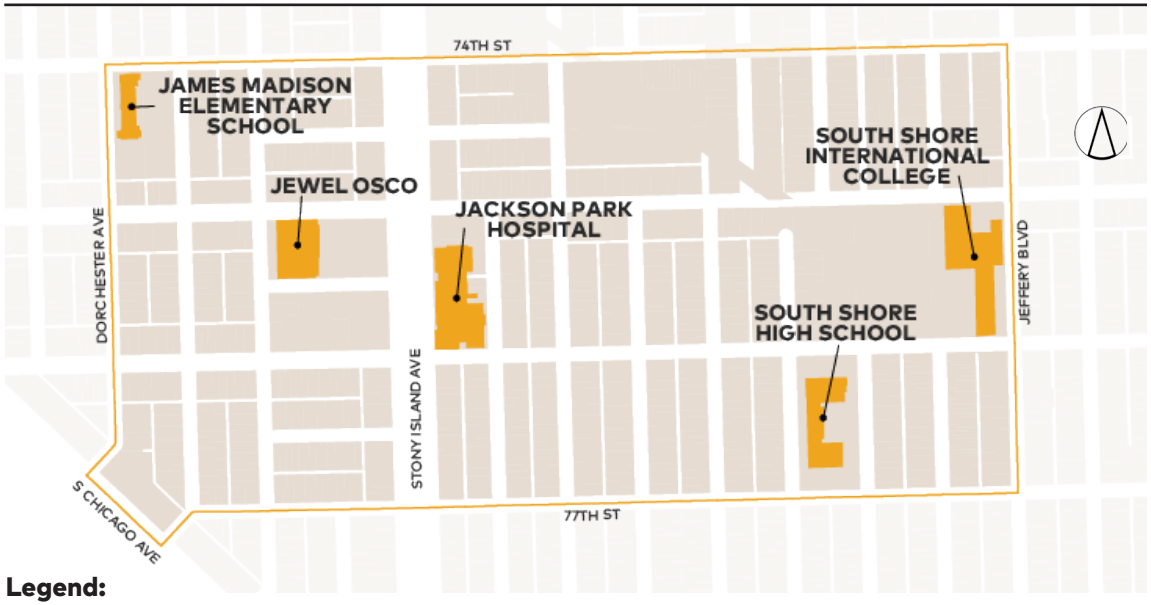
STRATEGY 3.1

Community microgrid

A community microgrid connected to the larger grid would provide greater energy resilience and independence to the community of South Shore. If and when disconnection from the main grid is required, sufficient energy generation and storage capacity is needed to keep the community powered. There are multiple routes to a community microgrid, with two possible scenarios including a partnership with the large area commercial operator (as seen with the Bronzeville partnership with ComEd),[40] or collaboration with a smaller commercial operator like Brooklyn, New York City and L03 Energy.[41] Brooklyn's peer-to-peer energy trading option is explored in greater detail in the Strategy in Action section.

Further research is needed as to which scenario is best suited for the community of South Shore. That being said, we propose the creation of a community-based microgrid commission that includes major stakeholders like South Shore Works, the South Shore Chamber of Commerce, the Jackson Park Hospital and Medical Center, as well as outside partners and technical contributors like the City of Chicago and ComEd or third party companies.

Figure 17: Proposed Microgrid Site in South Shore



Source: City of Chicago Data Portal, Cook County Data

Phase 1: Location
Our proposal is a phased microgrid construction, anchored at the Jackson Park Hospital and Medical Center at E. 75th St and Stony Island Ave. With a goal of community resilience, it's necessary to include the hospital as well as a public building such as a school. This is vital in order to provide a community gathering place with power in case of a disaster. Therefore, the initial phase of the microgrid could stretch east from S. Dorchester Ave to S. Jeffery Blvd, and south from E. 74th St to E. 77th St. This early network would include the Jackson Park Hospital and Medical Center, South Shore High School, South Shore International College, James Madison Elementary School, Jewel-Osco, other commercial food sources, Rosenblum Park, as well as multiple blocks of residential housing. In the case of a power outage, this would maintain electricity at the hospital, in public spaces for the community to gather, and at a large grocery store and other commercial food facilities. The proposed South Shore Microgrid Commission should conduct

further energy load and phasing site research.

Complexity

Key Indicators

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Cross-Energy Connections

STRATEGY 3.2

Job training in renewable energy fields

As renewable energy projects grow in South Shore, it is imperative that associated jobs and opportunities are reserved for South Shore residents. Illinois provides access to subsidized green jobs training through policies like the Illinois Future Energy Jobs Act (FEJA) and FEJA's Solar For All program.[42] Already, the FEJA funding supports the Chatham Business Association's Alternative Energy Training Program, "designed to teach business owners how to grow their business in the alternative energy industry."[43] A similar application of funding could be utilized in South Shore. We propose that promoting the renewable-energy job sector in South Shore would result in job creation, and that the necessary job training for this industry can be state-subsidized. Such work could be done in partnership with South Shore Works, South Shore Chamber of Commerce, Centro de Trabajadores Unidos, and Meadows Eastside Community Resource Organization.

Complexity

Key Indicators

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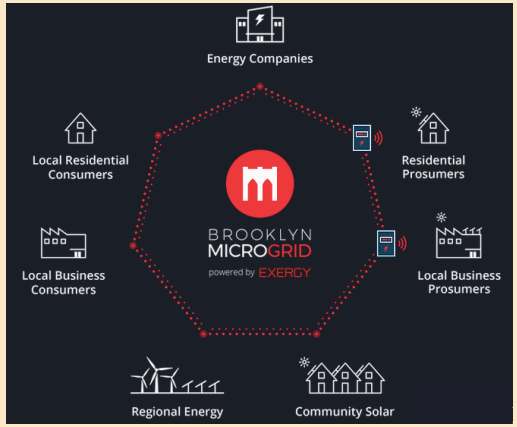
STRATEGY IN ACTION: TWO PATHS TO A COMMUNITY MICROGRID

Case Study 1: Bronzeville Microgrid, Working with ComEd in Chicago

The Bronzeville microgrid stemmed from a pre-existing microgrid on the Illinois Institute of Technology college campus. The commercial operator ComEd is expanding the microgrid in phases to encompass the entirety of the Bronzeville community, which includes the Chicago Police Department headquarters. The microgrid contains 750kW of solar with a 500kW battery system, allowing for a 4 hour run-time if disconnected from the main grid.[44] Enchanted Rock is a third-party operator owning the dispatchable generation, monitoring the microgrid, and directing Bronzeville's energy elsewhere via the main grid if not needed by the community.[45]

Case Study 2: Brooklyn Microgrid, Working with LO3 Energy in New York City

Brooklyn Microgrid is a benefit corporation licensed as a commercial operator just like the local area provider, ComEd.[46] Brooklyn Microgrid allows roof owners the opportunity to install solar photovoltaic panels and generate their own power, channeling surplus energy into the grid and auctioning it on an app-based community marketplace.[47] This app is available to anybody wanting to buy or sell local renewable energy on the Brooklyn Microgrid. Each solar panel generating energy is tagged with a device measuring the input to the grid which then feeds information to the app. Consumers bid on this decentralized, sustainable energy via peer-to-peer energy trading using smart contracts secured by blockchain technology.[48] The flexibility in the app also allows space for more conventional energy choices like Renewable Energy Credits. The Brooklyn Microgrid is slowly and strategically installing switching gear on Consolidated Edison's physical infrastructure within the community in order to create the physical microgrid.[49] As of 2019, Brooklyn Microgrid was in the process of developing microgrids in the Gowanus and Park Slope neighborhoods of Brooklyn.



Brooklyn Microgrid Ecosystem (left) and rooftop solar panels in Brooklyn (right). Source: Brooklyn Microgrid

FOOD

Source: Hyde Park Farmers Market

FOOD

Food systems are inextricably linked to a community's health, quality of life, and energy consumption. Yet, contemporary large scale food systems are costly in terms of their environmental impacts and the energy requirements of agribusiness supply chains. For instance, the current global food system contributes an estimated 21-37% of total greenhouse gas emissions, further exacerbating the effects of climate change.[50] Simultaneously, the global food system is highly susceptible to climate change as crops are affected by water scarcity, ecosystem destruction, and extreme weather, among other risks.

While systemic change is needed at the national and global level, a sustainable local food system has reverbe rating benefits across the community. Reenvisioning local food systems can have a beneficial impact on energy planning while also promoting resiliency within communities.

South Shore's food system has become more robust over the past decade. Still, the community has fewer grocery stores, dining options, and opportunities for local farming than other neighborhoods in Chicago.

While food is not traditionally included in an energy plan, we have built an expanded definition of energy that encompasses everything that fuels a community and its residents. Food is the essential unit of energy for the human body, and food access is a necessary component of a community's health and livability.

We seek to restabilize the community through a job training program and food hall, to revitalize the community food landscape through increased access to local and healthy options; and to build resilience to food insecurity through community gardens and urban farms.

These goals therefore address the immediate need for resident food access, and contribute to the development of a sustainable local food system.

GOAL 1

Ensure resident access to affordable and nutritious food options

GOAL 2

Develop a sustainable local food system for South Shore

GOAL 1: ENSURE RESIDENT ACCESS TO AFFORDABLE AND NUTRITIOUS FOOD OPTIONS

Access to food is essential for communities to thrive. Over the past decade, disinvestment in South Shore has prevented many residents from accessing affordable and nutritious food. The neighborhood's last remaining grocery store closed in 2013, solidifying the neighborhood's "food desert" designation.[51] For the next six years, residents relied on unaffordable convenience stores, or traveled to other neighborhoods in order to access food. More recently, however, food access in South Shore has improved. In December 2019, a new grocery store opened at Jeffery Plaza on E. 71st Street, expanding resident access to affordable and healthy food options.[52] South Shore is also home to approximately ten community gardens and, during the summer months, a weekly outdoor farmers market.

While South Shore residents have more food options now than in previous years, affordable and nutritious food is still inaccessible to some residents. Despite the opening of a new grocery store, residents in the southeast part of the neighborhood need to travel over a mile to reach a grocery store, which poses an accessibility barrier to residents who are unable to walk and have no access to a vehicle.

The strategies outlined in this section will ensure South Shore residents' access to energy in the form of nutritious food, while minimizing the energy costs of obtaining food within a food desert. In addition to physical access, these food options will be financially accessible to residents. Almost half of South Shore households utilize SNAP benefits, so it is imperative that all food initiatives are resident-centered.[53] These strategies will augment existing community assets to create a more resilient and accessible food system in South Shore that prioritizes affordability and energy resiliency.

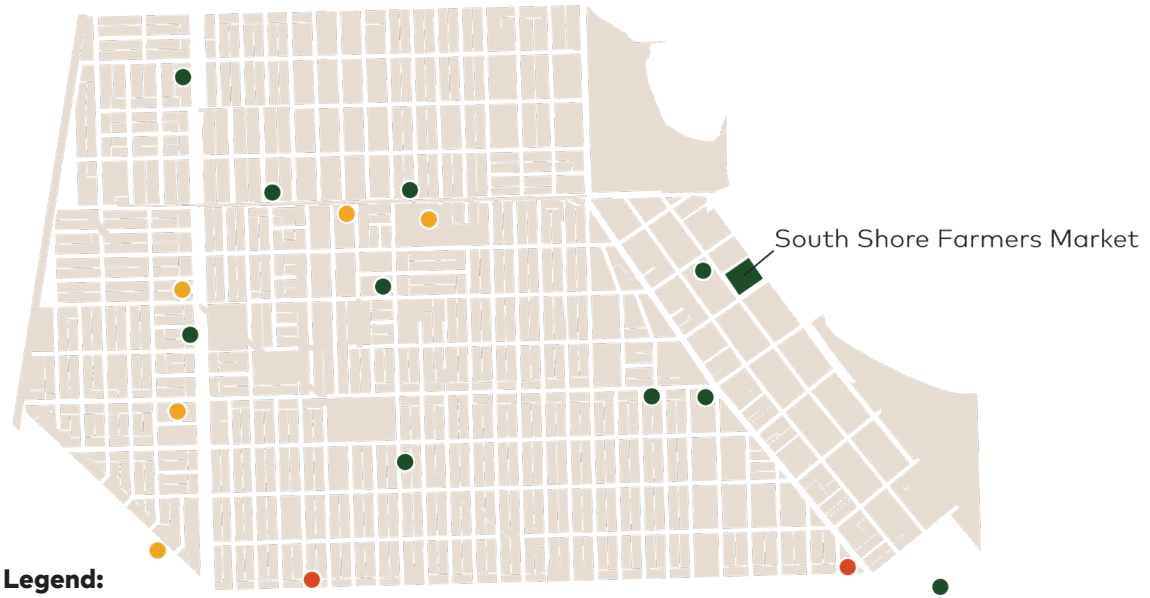
STRATEGY 1.1

New grocery store

While South Shore now has several grocery store options, some residents in the southeast quadrant of the neighborhood still need to travel a mile or more to reach the nearest grocery store. Approximately 43% of South Shore residents do not have access to a vehicle, meaning that many residents need to walk or rely on public transportation to travel to the grocery store.[54] While there are a variety of convenience stores in this area, residents have expressed that these options tend to be less affordable than a grocery store.

The addition of a grocery store in the southeast part of the neighborhood would improve resident accessibility to affordable food options and provide full-time employment opportunities. The vacant land at the southeast corner of

Figure 18: Supermarkets in South Shore



Source: Illinois Department of Human Services

Kingston Ave. and E. 75th St. is zoned for B3-2 commercial use, making this area a potential site for a future grocery store.[55]

Complexity

Key Indicators

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Cross-Energy Connections

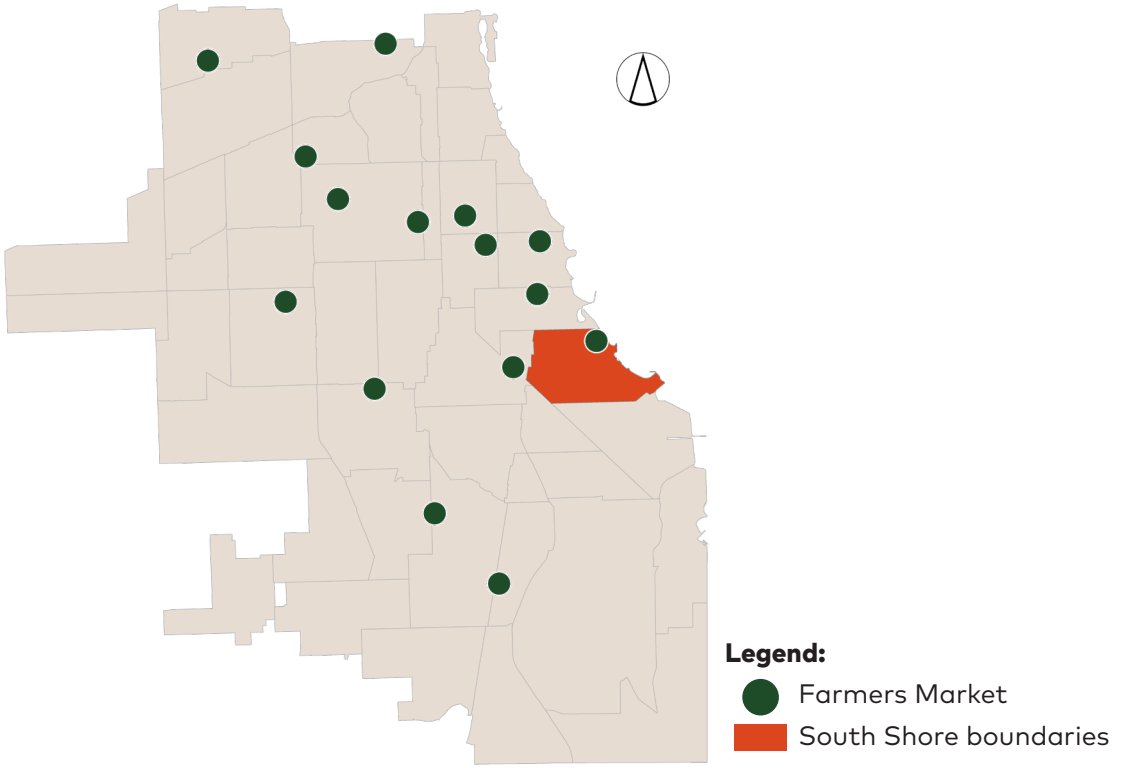
STRATEGY 1.2

Year-round farmers market

Despite spanning a larger geographic area, the South Side of Chicago has fewer farmers markets than the North and West Sides.[5657] The Chicago South Shore Farmers Market, located at E. 79th St. and South Shore Drive, operates weekly from June-September, but examples of existing year-round markets such as Green City Market in Lincoln Park suggest that there is resident demand for one. The closest year-round farmers market, 61st St. Farmers Market, reports that over 90% of shoppers are from the South Side, and that they process more Link sales than any other farmers market in Illinois.[58]

A year-round farmers market in South Shore would provide greater opportunities for residents to purchase fresh produce while also supporting local farming initiatives in the Chicago area. Approximately 36.6% of households in South Shore received SNAP benefits in 2019, so a Link match system would also provide greater accessibility for residents who use these benefits.[59] Possible sites for a year-round farmers market include the South Shore Cultural Center Field House and South Central Community Services.

Figure 19: Farmers Markets on Chicago's South Side



Source: Curbed Chicago

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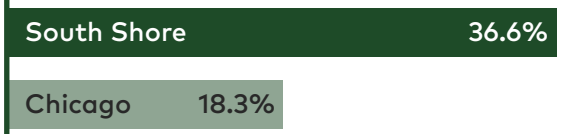
Cross-Energy Connections

Figure 20: % of families receiving Supplemental Nutrition Assistance Program (SNAP) benefits, 2019



Source: ACS 2019

STRATEGY 1.3

Community gardening initiatives

Community gardens are a standard practice to locally produce food and create community space. There are currently several gardens in the South Shore community, many of which are classified as school gardens. Additionally, there are gardens labeled as being just for beautification and not for food production. This strategy focuses on creating and enhancing food-producing community gardens to increase production and accessibility to fresh fruit and vegetables.

Identifying new locations for community garden space, as well as bolstering existing community gardens in South Shore, should be a focus. A new community gardening initiative would require: training programs for growing food, compliance with Chicago policy on size and scope of community gardens, and support for acquiring necessary equipment. The benefits of community gardens go well beyond producing food for local consumption. Sustainable community garden practices can help with rainwater collection and eliminate chemical pesticides or fertilizers in gardening practices to ensure clean water with no pollutant runoff. Additionally, rooftop gardens are an effective form of insulation, increasing energy efficiency.

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY 1.4

Food justice education campaign and job training program

An education campaign around food in the South Shore community would serve to ensure that residents are informed on topics such as affordability, nutrition, and assistance programs, and that they receive job training for food-related industries. Although food access has been improving in recent years, ensuring that residents are informed about the sources for food is important. Educational programs regarding food choices, as well as strategies for maximizing the nutritional and energy benefits of food dollars, could be especially beneficial in a community where approximately 36.6% of households received SNAP benefits in 2019.[60]

We propose training programs for individuals seeking employment in the food sector as well as an education campaign that can work in tandem with the other strategies listed in this section. Ultimately, this strategy seeks to ensure that community members are informed of all that their community offers, such as assistance programs they may be eligible for and training to help community members find employment and develop marketable skills.

Any meaningful transformation of a local energy plan would require intensive outreach and education to enlist the informed engagement of community members. This education campaign around food could be one channel of a broader outreach effort to generate stakeholder buy-in and participation.

Complexity

Key Indicators

Hermitage Community Garden in Englewood. Source: CBS Chicago

GOAL 2: DEVELOP A SUSTAINABLE LOCAL FOOD SYSTEM FOR SOUTH SHORE

Food systems in the United States comprise an energy-intensive production and supply chain including industrial agricultural production, food processing, transportation, distribution, food waste management, and all of the small steps in between. Each stage of the process uses energy, some much more than others. For example, large scale agriculture uses immense amounts of water and chemical inputs – fertilizers and pesticides – to grow crops, and transportation of food often consumes large amounts of fossil fuels and emits sizable amounts of greenhouse gases.[61] Localizing food systems in urban areas can help mitigate wasteful energy consumption and other externalities that come from food systems.

Developing a sustainable local food system for South Shore would help mitigate the costs and negative impacts of large-scale agricultural systems. An emphasis on the production of food in the urban area through urban farming techniques often uses far fewer resources than traditional farming. Further benefits are added as food miles, or transportation of locally-produced food, is reduced substantially and involves less mechanized production and fewer inputs.

Localizing a sustainable food system additionally has the potential to harness human capital and energy in the community. Jobs can be created for local residents, and a bolstered food system may further lead to an increasingly closed-loop economy for South Shore. Currently, residents of South Shore travel to neighboring communities for various activities. According to Tonya Trice of the South Shore Chamber of Commerce, the community is currently seeing "over $200 million of leakage every year in food and beverage from the South Shore community, and a lot of that is going to Hyde Park."[62] Focusing on consumers traveling less to shop for food or go to restaurants has positive energy consequences. Working to restrict this financial bleed will help to ensure that both dollars and energy is preserved and recycled within South Shore. Ultimately, this goal seeks to ensure that South Shore may enhance its energy, health, economic security, and community-wide benefits from developing a sustainable local food system.

STRATEGY 2.1

Urban farming initiatives

This strategy seeks to introduce urban farming in South Shore to locally grow food for the community and surrounding areas at a larger scale than the community gardening initiative in Strategy 1.3. Technologies such as vertical farming, hydroponics, aquaponics, and shipping container gardening, among others, have allowed for urban areas to produce large amounts of food despite land constraints. Implementing an urban farming strategy would allow South Shore to become a local and regional food producer, enhancing the food system for local residents, restaurants, and other food related businesses.

The traditional agriculture industry creates large amounts of pollution and has a

The Gotham Greens greenhouse. Source: USDA

high energy expenditure to produce and distribute food.[63] Locally grown food and urban farming methods such as vertical farming or hydroponics use far fewer energy resources overall. Gotham Greens, a hydroponic urban farm in the Pullman neighborhood in Chicago, uses 95% less water and 97% less land than conventional farms, and grows millions of heads of greens annually.[64]

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY 2.2

Local food hub with restaurant space

Central to the idea of building a more local food system is production and distribution: you can grow, process, or cook your food, but how do you get the product to your customers? Providing a centralized location for this distribution helps farmers, producers, restaurateurs, and customers easily connect, creating an easy "one-stop shop" for both sellers and buyers.

A chef prepares food at Inspiration Kitchen, a restaurant in East Garfield Park that provides job training and free meal programs. Source: Inspiration Kitchen

Another type of shared space for food sales that is quickly growing in popularity is the food hall — a modern, stand-alone food court that features local, unique, and/or upscale vendors. Food halls can range from casual to upscale, and can include bars and liquor licenses.[65]

Extremely popular with patrons, a food hall can act as a central gathering point, a place to try out multiple culinary offerings at once and to accommodate multiple preferences and palates. A food hall with a bar can serve as a social gathering place day and night, can act as a neighborhood destination, and can help anchor a retail corridor.

For restaurateurs, a food hall offers the chance to open a new restaurant concept or enter into a new market easier and at a much lower cost, as they only need to rent a space in the food hall instead of committing the initial investment for an entire stand-alone restaurant space.[66] From an energy perspective, food hubs and food halls both provide energy and other savings by sharing space and resources, centralizing shipping and distribution points, and shrinking each grower and vendor's physical footprint. In a food hub, multiple users can share a commercial kitchen space, often through an hourly or daily rental system. Multiple restaurants share one common customer seating area in a food hall.

South Shore has a need and a ready market for more restaurants – especially family-style and upscale dine-in restaurants. The Chamber sees a high need for new restaurants to invigorate the neighborhood's commercial corridors, and notes that South Shore loses a significant amount of potential revenue each year from residents leaving the neighborhood to dine.[67]

"We have over 200 million dollars of leakage every year in food and beverage from the South Shore community... Those are dollars that we can definitely recapture and circulate back through the South Shore community"

- Tonya Trice, Executive Director, South Shore Chamber of Commerce

Food hubs keep money within the community and also provide local employment, career development, and a supportive environment for food industry entrepreneurship. Designed to be flexible, a well-planned and developed single space can host multiple different uses based on the needs and visions of local residents. Community flex space can host special events, entertainment, pop-ups, and more. Outdoor and rooftop space can incorporate gardens and public patios.

A South Shore food hub could meet multiple community needs by incorporating restaurant space in the form of a food hall, promoting local entrepreneurship opportunities and support, creating access and marketing for local farmers and producers, providing local jobs and career development, and providing shared community flex space in the food hall dining area.

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY IN ACTION: FOOD HUBS AND FOOD HALLS

Chicago has many different food halls and food hubs from which we can draw inspiration. Several currently operating food halls, food incubators, and food hubs on Chicago's South and West Sides offer models for use of space and programming that can be incorporated into ideas for a South Shore food center.

These spaces can be built in existing buildings as adaptive reuse projects or can be built as new, ground-up structures. Funding can come from public and private loans, grants, and/or donations, and securing enough funding is often a key hurdle for such community development projects. Other considerations include finding the right location – a restaurant and retail space needs to be easy for customers to access, and food industry businesses will need to have transportation and delivery access.

One Eleven Food Hall
Pullman neighborhood


Source: One Eleven Food Hall

One Eleven Food Hall is a small food hall created to give South Side food businesses a market and to harness the resources of a single shared space. Restaurant start-ups can bridge the gap from concept to full restaurant in a space with low overhead expenses, all while receiving business development support. The food hall is open five days a week and regularly hosts pop-up events in its dining area that feature local retailers. One Eleven was developed by Chicago Neighborhood Initiatives, a Pullman-based not-for-profit neighborhood development organization, with design support from local designers and architects.[68]

The Hatchery
East Garfield Park neighborhood


Source: The Hatchery

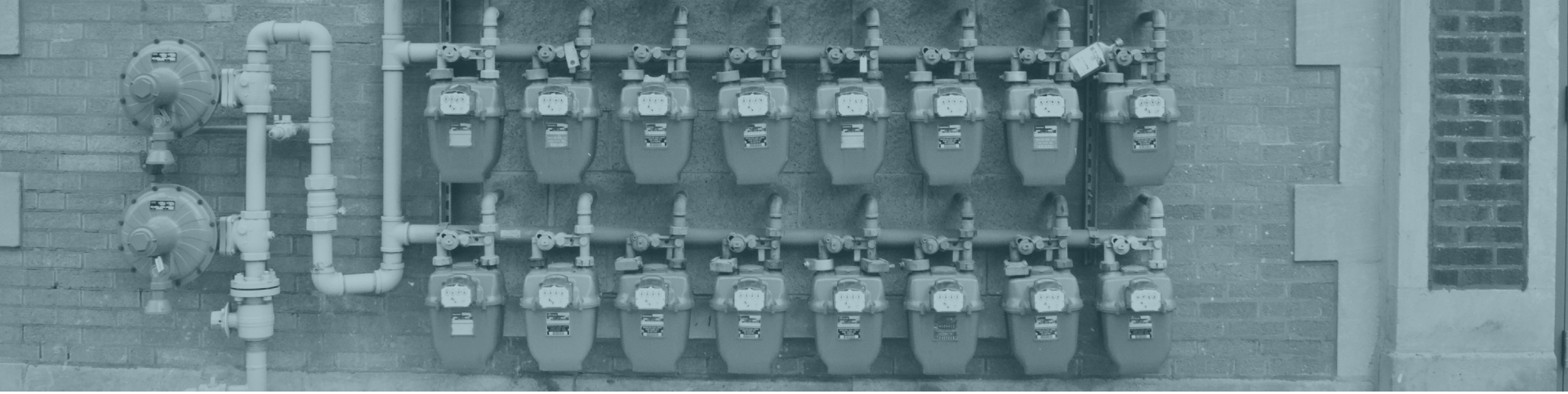
The Hatchery is a non-profit food and beverage industry incubator dedicated to helping local entrepreneurs build and grow their businesses. The 67,000-square-foot incubator includes private and shared kitchen and spaces for production, coworking and meeting, and events. Entrepreneurs get 24/7 access to the space and receive training, business coaching, and access to potential capital for their businesses. The space also provides job training programs for individuals looking to enter the food and beverage industry, and helps connect trained applicants with companies looking for employees — and West Side residents can access some training for free. The Hatchery's team hosts quarterly open community meetings and meets quarterly with a Community Advisory Council made up of leaders from groups representing West Side neighborhoods.[69]

Plant Chicago
Back of the Yards neighborhood


Source: Plant Chicago

Plant Chicago is an integrated, multi-use food hub and education center that prioritizes community entrepreneurship, public education, and sustainable food systems. Plant Chicago is a not-for-profit organization led by a mission to cultivate a local circular economy, which it describes as "a collaborative economic practice sustained by local circulation of materials, nutrients, knowledge, and money [that is] empowered by transparency, diversity, and inclusion".[70] Plant Chicago's space in Back of the Yards houses indoor gardens and aquaponics systems, an indoor farmers market, and incubator space for local food-based businesses. Its programming includes K-12 education programs, a network of small businesses interested in building a local circular economy, farmers markets, and a Link produce box program to distribute local farm grocery boxes to Link card holders on Chicago's Southwest Side.

WATER



WATER

Water is a crucial source of vitality, holding the dual potential to either enrich or destroy life. While water offers sustenance to all existence and a powerful source of renewable energy, it can also cause devastation to communities in the form of floods, tsunamis, and erosion. Maintaining and improving infrastructure to manage stormwater, lakeshore erosion, and clean water access is essential to ensuring that we benefit from the lift-sustaining aspects of water while limiting harm to our communities and ecosystems.

Water is interconnected with the other forms of energy we illustrate in this plan: electricity, food, and connectivity. From hydroelectric dams to wastewater treatment plants, there are many technologies employing the power of water. Agricultural systems rely heavily on the availability of water for irrigation, and active transportation modes require a holistic management of stormwater in order to function smoothly.

Climate change exacerbates the existing volatility of water. Around the globe by 2050, 1.6 billion people will be at risk for floods.[71] With Chicago sinking between four to eight inches every 100 years[72] and experiencing extreme bouts of precipitation as well as increased risk of meteotsunamis, flooding will increase substantially – most dramatically impacting vulnerable communities such as South Shore.

South Shore must prepare for extreme and sporadic weather patterns and climate emergencies to prevent further damage to public lands, flooding in homes, and unsafe drinking water. Positioned on Lake Michigan and coupled with a legacy of poor water quality and management, South Shore is in an opportune position to address these water challenges head on. We propose three goals to address existing and potential future problems: **our goals seek to restabilize the community through stormwater management tools; to revitalize the community through new green infrastructure and water access systems; and to build resilience to worsening floods through new drainage systems and infrastructure protecting against erosion.**

GOAL 1
Protect land along Lake Michigan from shoreline erosion

GOAL 2
Enhance stormwater management

GOAL 3
Improve clean water access and education

GOAL 1: PROTECT LAND ALONG LAKE MICHIGAN FROM SHORELINE EROSION

Historically, Chicago's shoreline has been changing from erosion. These fluctuations determine the fate for recreational activities, lakefront property conditions, and connectivity on Lake Shore Drive. The Chicago shoreline has endured intense commercial, transportation, and residential development since the 1830s. Shoreline expansion began in the 1890s as man-made land was built for parks and major transportation nodes.[73] Shoreline protection structures to mitigate damage caused to beaches and residences due to flooding and erosion weren't erected until 1910.

South Shore contains valuable land assets along Lake Michigan such as the South Shore Golf Course, the South Shore Cultural Center, and the Eugene Sawyer Water Purification Plant, in addition to its numerous lakefront residential properties. Lakeshore cultural and service facilities in South Shore as well as in Jackson Park are worth over $250,000,000 and are located in damage and flood prone areas.[74] More importantly than South Shore's land value is the people that depend on the lakefront to work, live, and play. Protecting lakefront beaches, roads, and properties from an eroding shoreline is crucial to protecting South Shore residents and prioritizing their safety.

Assessing and preparing for the potential damage to South Shore's waterfront properties, public beaches, and parks will save extreme repair costs in the future, and will preserve land along Lake Michigan. Coastal erosion costs the United States $500 million per year for property damage and loss of land.[75] Current mitigation efforts along the shoreline in Chicago include concrete paved beaches, stone mounds filled between the lake bed and land, wooden piles, as well as green land uses such as parklands, golf courses, and conservation areas. While these tactics trap some excess water, South Shore must become more resilient towards erosion and flooding. We propose the barriers in and around the lake to save public beaches from flooding and shrinking, infrastructure in Lake Michigan to lessen flood damage in homes, and limiting development along the waterfront to avoid the further destruction of assets. These improvements are necessary to avoid costs for repairs in the future as well as to prevent further damage to private and public infrastructure that lines Lake Michigan.

Figure 21: South Shore Shoreline Erosion

Source: U.S. Geological Survey

Protecting land along Lake Michigan from shoreline erosion promotes energy efficiency as residents will not have to worry about the burden of excessive flooding on connectivity networks, housing units, and public spaces. Responding to this challenge in South Shore is vital because the community cannot afford additional damage to belongings and places needed to thrive. In addition to state and local funding, community participation is essential for addressing damage from erosion. Protecting the lakefront and South Shore will enable residents and visitors to pursue daily activities and enjoy lakefront activities for years to come.

STRATEGY 1.1

Barriers on shore zone, banks, and bluffs

In order to guard against damage from rising lake levels, a variety of flood barriers must be constructed along the South Shore community shoreline. These barriers would include coastal gardens, beach nourishment, and rip-rap (a rocky material used to protect beaches). They will be constructed on the shore zone, banks, and bluffs between South Shore's private beaches and condo buildings on Lake Michigan in order to preserve recreational and private residential space. In addition, these barriers will help avoid potential damage to private property and threats to public safety.

This strategy will be implemented through guidance from the South Side Lakefront Erosion Task Force and Blacks in Green, as well as from recommendations and funding through the Illinois Department of Natural Resources and the Office of Water Resources. South Shore does already have rip-rap installed in some areas such as the South Shore Nature Sanctuary and the co-op building at 2666 E. 73rd Street. Other temporary projects, such as 100-foot-long barriers on 75th Street and a 200-foot barrier at 67th Street, were installed in 2019 after waves jumped the existing walls and flooded South Shore Drive.[76]

Lakeshore flooding in South Shore in 2020. Source: Chicago Office of Emergency Management and Communications

Despite these solutions, flood-prone zones need more attention so that increased costs and burdens are not placed on residents during extreme storm events. Barriers that withstand wave attacks and consider access to beaches and public safety will act as natural buffers for land and structures along Lake Michigan, and will also enhance recreational activities and private space on the lakefront. We envision an incremental process including rehabilitation of private and recreational space along with partnership with the South Side Lakefront Erosion Task Force to uplift and listen to their ideas on resilience towards erosion. This strategy will require local and state funding, as private property could be destroyed and recreational activities that residents and visitors enjoy may no longer be available.

Complexity

Key Indicators

Re Cs

Cross-Energy Connections

Figure 22: South Shore Proposed Breakwater Improvements

Sources: ArcGIS Online/Umair Hamid

STRATEGY 1.2

Resilient infrastructure against the eroding shoreline

While there is no way to stop rising lake levels, preventative measures do exist, including resilient infrastructure such as breakwaters and a composite system on the lakefront and in the lake. Revamping existing breakwaters and adding concave seawalls against coastal development damage will help protect the built environment from flooding and further erosion. Allowing an extended period of time to plan repairs and renovations along Lake Michigan will decrease the burden of up-front construction and labor costs, and will also limit the costs of potential damages in the future. These solutions are intended to prevent future events similar to the destruction South Shore has already experienced, such as water entering lakefront parking garages, street closures due to flooding, eroding infrastructure, and broken first floor windows due to waves.

Seawalls have been discussed as a potential protective measure for properties such as the Lake Terrace.[77] However, building a higher seawall at this residence might cause flooding at Rainbow Beach during extreme storm events or while lake levels rise. A breakwater for the Eugene Sawyer Water Purification Plant is proposed to be reconstructed through the Chicago Shoreline Protection Project, but this is the only asset in South Shore that the grant is willing to protect.[78]

South Shore's private beaches, Cultural Center, and numerous condo buildings where members of the community reside are assets that must be protected with resilient infrastructure. Rainbow Beach,

STRATEGY IN ACTION: EVANSTON SHORELINE IMPROVEMENTS

Further north along the shore of Lake Michigan, Evanston encounters many of the same problems related to shoreline erosion and flooding as South Shore. Historically high Lake Michigan water levels, paired with large waves during severe weather events, have led to extensive damage to the shoreline barrier revetment, erosion of beaches, and flooding of several lakefront parks in Evanston.[80]

To address this, Evanston has begun the process of repairing and improving damaged revetment areas with new larger rubble mound barriers. The City is also implementing large trapbags that serve as temporary protection until the larger repairs are completed.

The initial cost for the temporary repairs fell to around $750,000, but the anticipated cost for the complete stabilization of the shoreline is expected to range from $3 to $7 million dollars to protect Evanston's string of parks and public beaches along the Lake Michigan shoreline.[81]

Rubble mound barriers on an Evanston beach (top left), large trapbags are used to prevent shoreline erosion (top right), trapbags protecting Evanston's shoreline (bottom). Source: Reconnect Consultants

South Shore Beach, South Shore Golf Course, and South Shore Cultural Center do not have large breakwaters, so we propose building them to the east of the sand while also buffering the beaches from the apartment buildings bordering them. In addition, we propose building concrete seawalls in front of waterfront buildings, as these privately-owned structures are assessed to be vulnerable towards flooding.

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY 1.3

Zoning regulations to limit coastal damage

Urban runoff and construction site erosion are significant sources of pollution and pose threats to surface water quality.[79] Sedimentation destroys local ecology and threatens the aquatic ecosystem. Sediment deposits also cause flooding, which is a safety and nuisance threat for transportation nodes, waterfront residences and beaches, and the overall quality of the lake. It may be in the best interest of South Shore to avoid further development along the lakefront; however, potential zoning amendments would require community-led workshops and discussions in order to understand public sentiment. Safe and non-polluting erosion and sediment control practices should be implemented through zoning ordinances to protect water quality and avoid further damage and flooding to development.

13 & 770
Structures Residential units
at risk along Lake Michigan

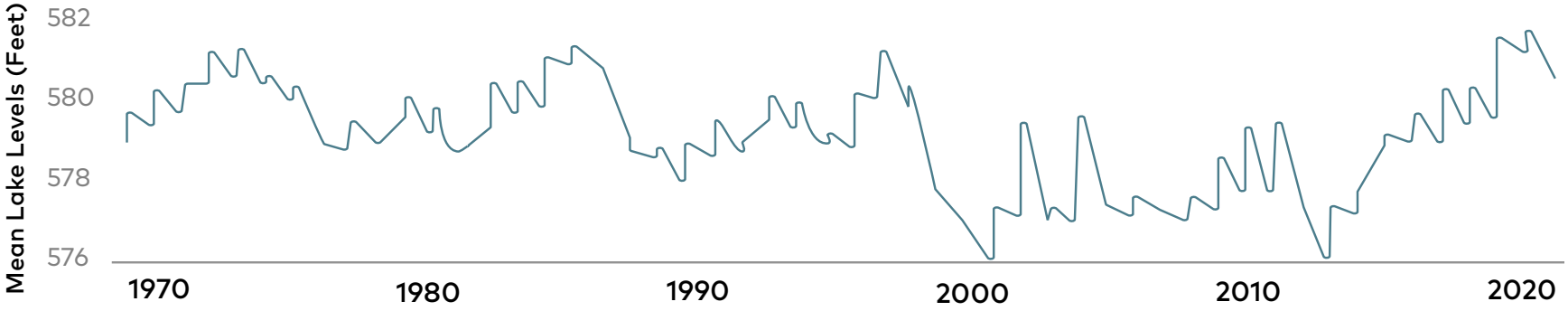
While Strategies 1.1 and 1.2 are processes to ensure resilience in the face of urban flooding, erosion, and extensive property damage, Strategy 1.3 will require workshops with the Chicago Department of Planning and Development and the Office of the 5th Ward Alderman Leslie A. Hairston. In addition, South Shore residents along and around lakefront properties will receive an invitation to gain insight on zoning amendments for future construction along Lake Michigan.

Parcels bordering Lake Michigan in South Shore are zoned as RM-6, or high-density residential, and POS-1, or regional or community parks. As these zones are already in danger of erosion and flooding, an Erosion Control Ordinance can be implemented so that property owners, the Department of Transportation, and the Chicago Park District can maintain and follow measures in case of flooding and high lake levels. Additional construction on the lakeshore can be discussed as well, and "No Development Zones" can be determined by the community and local politicians.

Complexity

Key Indicators

Figure 23: Lake Michigan Water Levels, 1970-2020



Source: U.S. Army Corps of Engineers

GOAL 2: ENHANCE STORMWATER MANAGEMENT

South Shore has an urban flooding problem. In order to plan for a future with an increased frequency and intensity of storms due to climate change, action is needed immediately. When storms hit the larger City of Chicago, stormwater and snowmelt can overwhelm the sewer system and gray infrastructure, leading to sewer backup failure, basement seepage, and street flooding. Urban flooding is a particularly big issue due to Chicago's combined sewer system in which stormwater and wastewater flow to treatment plants in the same large tunnels. Under normal conditions, these tunnels can handle the volume of water flowing into them. However, during heavy storms, they can become inundated, overflowing untreated water into the Chicago River and Lake Michigan and leading to backups of home sewer systems.

Flooding is especially an issue in highly urbanized areas like Chicago that have less permeable land for stormwater to infiltrate. Within South Shore, the majority of land has over 60% impervious surfaces.[82] During storm events, some water is able to infiltrate natural areas, lawns, gardens, and parks. However, other water runs off impervious surfaces such as roofs, streets, parking lots, and sidewalks, and can lead to flooding of private property and public right-of-ways. Urban flooding events are most common in areas that have been increasingly urbanized and in older communities where sewer systems haven't been updated to today's standards.[83]

Urban flooding can pose serious health issues for residents. Sometimes, stormwater makes its way into drinking water sources, picking up pollutants and waste along the way. This negatively affects residents of South Shore and all of Chicago. Additionally, when residents encounter untreated wastewater that has overflowed from sewers, whether in the streets or their own homes, they can become ill from bacteria and pollutants.

Flooding events also affect residents financially. Health impacts may force people to miss work, and home flooding can require expensive repairs. From 2007 to 2016, residents in South Shore filed substantially more flood insurance claims than northern Chicago neighborhoods.[84] Though this data shows the disparity in urban flooding within Chicago, not all residents are represented, such as those without flood insurance or those who did not file a claim. In order to reduce the many negative impacts of urban flooding, this goal seeks to improve existing gray infrastructure and utilize green infrastructure in South Shore.

Figure 25: Impervious Surfaces in South Shore, 2017

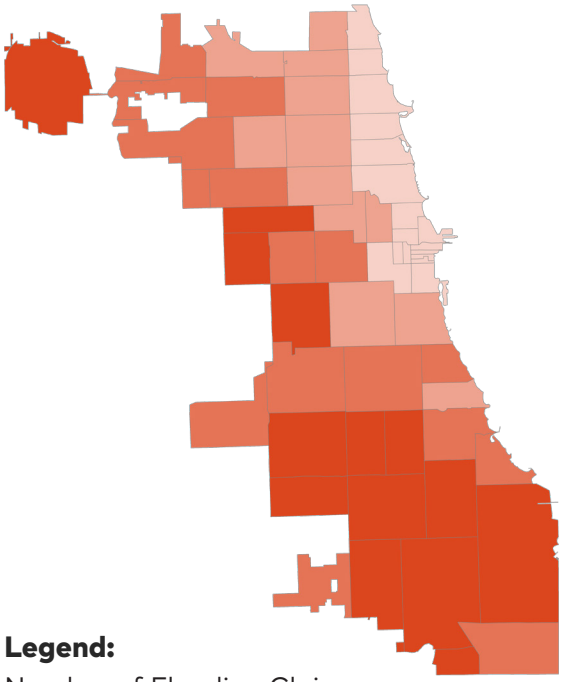
Legend:

% Impervious Surfaces:

- 25 - 60%
- > 60%

Source: Chicago Metropolitan Agency for Planning

Figure 24: Flood Equity in Chicago by Zip Code, 2021



Legend:

Number of Flooding Claims

- 0 - 201
- 201 - 1,309
- 1,309 - 5,355
- 5,355

Source: Center for Neighborhood Technology

STRATEGY 2.1

Healthy catch basins and storm drainage systems

Localized urban flooding can occur due to blocked or clogged catch basins and curb inlets. When trash, dirt, leaves, and sticks block water from easily flowing into the sewer, flooding can take place in the street. This negatively impacts pedestrians, bikers, and cars. If this debris is pushed into the sewer system and not properly and routinely cleaned, this can clog the sewer and lead to sewer overflows and backups.

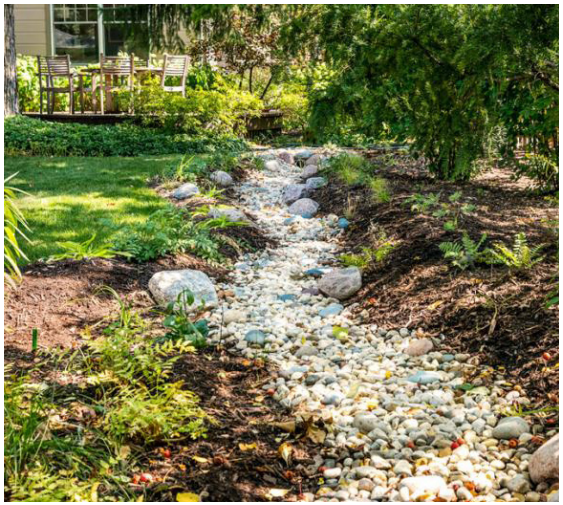
Strategy 2.1 creates a resident-led task force that would identify the streets hardest hit by flooding and clear debris from the entrance to drains before rain or snow events occur. This strategy also advocates for a program involving the City of Chicago and the Metropolitan Water Reclamation District (MWRD) to ensure that catch basins, curb inlets, and storm drainage systems are kept clear from debris in order to allow stormwater to flow freely. The program proposes that these agencies also unclog storm drains, which would be outside of the ability of the resident task force.

Looking specifically at the most flood-prone areas of South Shore, as identified by the resident task force, this proposed program would guarantee that the City of Chicago and MWRD inspect, clean, and maintain the neighborhood's gray infrastructure to avoid urban flooding.

Complexity

Key Indicators

Cross-Energy Connections



Rain garden in residential yard in Oak Park. Source: CNT

STRATEGY 2.2

Basement sump pump systems

Basement sump pumps help keep homes dry during storm events by pumping large volumes of water away from the building's foundation. In homes without sump pumps, or in the event that the pump fails or there is a power outage and no sump pump backup power is available, water that seeps into homes through windows, doors, or the foundation can cause massive damage.

Strategy 2.2 will utilize state stormwater management funding to install or replace basement sump pump systems for residents who need them. Installation will be done through this plan's proposed weatherization cooperative, Electricity Strategy 1.2. With this strategy, we will ensure that people in South Shore who cannot afford to install basement sump pump systems do not experience the negative economic and health repercussions of home flooding.

Complexity

Key Indicators

Cross-Energy Connections

Rain garden on the side of the road. Source: UMN Extension

STRATEGY 2.3

Green infrastructure and maintenance education

Green infrastructure is a natural stormwater management technique that captures rainfall and treats the water at its source. Gray infrastructure, such as curbs and gutters, is instead designed to move water away from the built environment and toward water treatment facilities.

One recommended green infrastructure technique that property owners may be encouraged to install is a rain garden. A rain garden, a type of bioretention, is a landscaped area with native plants where water can pool. The garden slows stormwater runoff and allows water to infiltrate the soil.[85] With more water captured on-site, less water flows into the sewer system, leading to a lower risk of urban flooding. Increasing green infrastructure also means a decreased reliance on gray infrastructure, which means less electricity used and money spent managing water in a water treatment facility.

This strategy recommends partnering with the Center for Neighborhood Technology (CNT) through their RainReady program. This South Shore site of the program would conduct free home flooding assessments and provide matching grants to property owners to install green infrastructure. In addition, the program could provide education so that green infrastructure will be properly maintained over time.

In order to encourage all property owners to take part in this program, it should be marketed as a benefit to those who live in their properties and to those who rent them. Green infrastructure can not only reduce water costs, yard maintenance, and urban flooding damages for the property owner, but can also make a building more attractive to potential tenants. In order to make sure renters also receive benefits from this program, property owners or managers should be incentivized to pass the cost savings from green infrastructure onto their tenants in the form of lower rent. Since the majority of South Shore residents are renters, this aspect of the program will be especially important to ensure equitable use of green infrastructure.[86]

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY 2.4

Rain barrels and rain gardens through downspout disconnections

Water that runs off of roofs, through gutters, and into the sewer system can contribute to combined sewer overflows and urban flooding. By disconnecting downspouts from flowing into the sewer, and redirecting the water away from the building into a rain garden or landscaped area, water can infiltrate the soil. Directing water to flow into a rain barrel instead allows the property owner to use this conserved water for irrigation purposes. Both actions reduce the burden on the sewer system, conserve water, and save the property owner money.

Strategy 2.4 will provide free education to property owners on how to disconnect their downspouts to flow either into a rain garden or rain barrel. In conjunction with disconnecting downspouts, this strategy also recommends planting a rain garden at the site of the downspout or installing a rain barrel that will harvest rainwater and can irrigate landscaped areas. By partnering with the City of Chicago to extend its downspout disconnection education to South Shore residents and MWRD to offer free rain barrels to low-income households, this strategy seeks to reduce the amount of home flooding in South Shore.

Complexity

Key Indicators

Disconnected downspout directed into the lawn. Source: Lake County, IL

Downspout connected to three rain barrels. Source: HGTV

GOAL 3: IMPROVE CLEAN WATER ACCESS AND EDUCATION

Lake Michigan, the primary source of drinking water for over 6.6 million Illinois residents, is an invaluable asset for the South Shore community. With lakefront access, South Shore benefits from direct water purification services from the Eugene Sawyer Water Purification Plant. Despite this abundance of resources, this waterfront access does not reflect water security or accessibility for all residents. Water scarcity, defined as the lack of access to water resources from physical shortages, inadequate infrastructure, or governance supply failures, can jeopardize the health, safety, and wellbeing of South Shore residents.[87] Specifically, one of the biggest barriers for South Shore residents is public water affordability.

Since 2016, the City of Chicago has aggressively increased water costs in efforts to decrease pension fiscal responsibility. Because 32.9% of South Shore residents live below the poverty line,[88] many endure unending water shut-offs. Without sufficient capital flowing into Chicago's public works departments, projects to improve and upgrade infrastructure fall behind. In communities like South Shore, these repercussions multiply.

South Shore's drinking water infrastructure is dominated by lead service lines (LSLs) which contaminate otherwise potable Lake Michigan drinking water. With their primary drinking water resources contaminated by lead, residents are subjected to health consequences like neurological and reproductive issues.[89] Without safe and affordable drinking water, South Shore residents lack a fundamental necessity for their wellbeing.

In order to address these concerns, South Shore residents must demand a series of equitable initiatives to prevent ongoing clean water scarcity. Our plan identifies four strategies to improve the quality of life for residents of South Shore: initiate a shared-cost lead pipe replacement program, enhance water metering systems, eliminate water shut offs, and administer a public water education program. Holistically, these strategies aim to reduce community burden of water inaccessibility and infrastructural decay. Through these strategies interconnecting with the previously mentioned water proposals, South Shore residents will benefit from a more robust and resilient water system.

STRATEGY 3.1

Shared-cost lead pipe replacement program

Aging lead service lines (LSLs) and water contamination significantly jeopardize South Shore's drinking water. According to Chicago Health Atlas, South Shore residents are exposed to higher lead levels than many other Chicago neighborhoods, placing children, pregnant women, and immunocompromised individuals at a high risk for health-related issues.[90] This strategy aims to remove existing LSLs and replace them with modern copper pipes, specifically within residences and businesses.

In September of 2020, Chicago Mayor Lori Lightfoot initiated the Equity Lead Service Line Replacement Program to eliminate the cost burden of LSL replacements for low-income residents.[91] However, these eligibility requirements restrict LSL replacements for renters. Given that 60% of South Shore residents are renters,[92] it is apparent that South Shore requires its own LSL replacement program. Modeling off of Chicago's Equity Lead Service Line Replacement Program, this strategy would require non-occupying homeowner-funded LSL replacement, as well as water main connections. This strategy ensures that all South Shore residents have updated copper piping, but relies on the City of Chicago to provide water main replacements.

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY 3.2

Water metering system and household fixture improvement

In South Shore, like many neighborhoods in Chicago, water meters and water-consuming fixtures are outdated. Essentially, water meters measure the intake of water into a residence and dictate water bill prices for a homeowner. As water meters age, however, they can provide erroneous measurements, resulting in minimized or amplified costs. This strategy attempts to modernize the water system in South Shore by updating water meters as needed. Funded by community bonds and grants, these replacements will be free for the residents of South Shore.

Additionally, outdated water fixtures such as toilets, baths, and hot water tanks can increase cost burdens for homeowners, as these impaired fixtures often have unknown leaks. Residents may also be unaware of piping damage, leaving leaks to go unaddressed and further raising water bill costs. By repairing or replacing these fixtures, residents can decrease their water costs and consumption.

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY 3.3

Water debt relief program

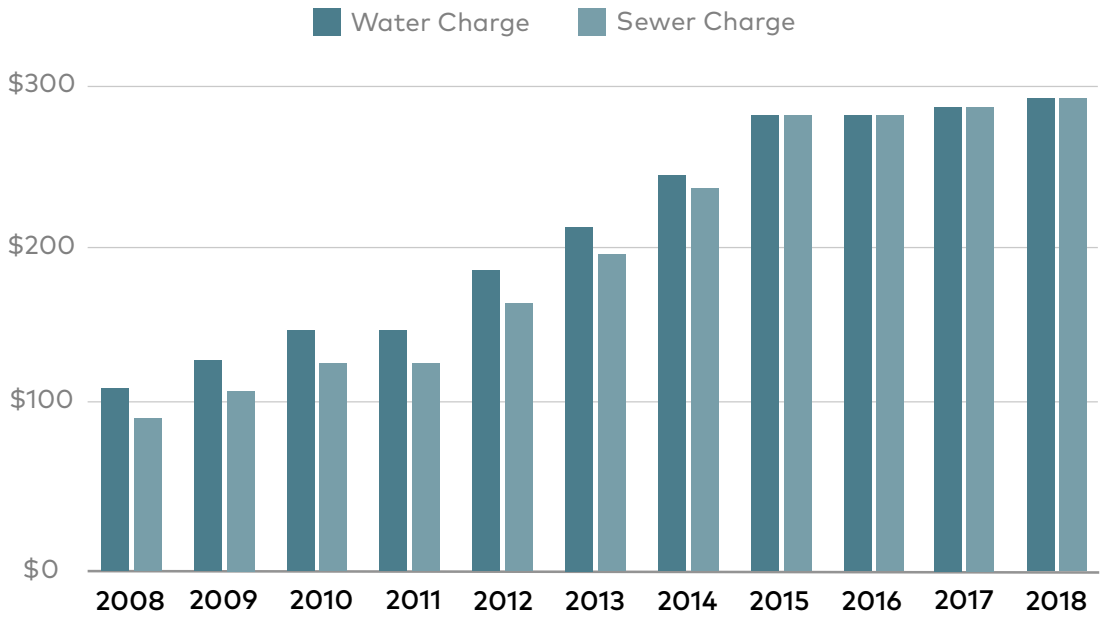
We believe that access to water is a human right. By working to eliminate water shut-offs and water debt, we can make progress to ensure access to water for all of South Shore. Water shut-offs occur when individuals are unable to afford their monthly water payments. From 2008 to 2018, Chicago shut-off over 150,000 households' access to water, in response to unpaid water bills.[93] Unable to afford dramatic increases in water bill prices -- in some cases tripling since 2007 -- residents are left without this necessity. To address water shut-offs, some Chicago aldermen chose to support the Water-For-All Ordinance, striving to "create a financial relief program for low-income households and ban water shutoffs, tax foreclosures and privatization of the city's water supply".[94]

Adopting these initiatives, this strategy will call upon South Shore's aldermen, Leslie A. Hairston, Greg Mitchell, and Michelle A. Harris, to endorse the Water-For-All Ordinance. In addition, we propose a community-wide debt relief program for residents crippled by accumulating water debt. With a debt relief program, residents could be able to slowly reduce their water debt while also maintaining full water services.

Complexity

Key Indicators

Figure 26: Water and Sewer Charges in Chicago, 2008-2018



Source: Chicago Department of Water Management

STRATEGY 3.4

Resident water education program

Education programs are effective methods to empower and inform residents on the importance of healthy water quality and affordability. Our plan aims to create a water education program that communicates the impacts of lead service lines, water conservation practices, and Lake Michigan potability. With these programs, residents could be better connected to their water governance authorities, as well as to their community's natural ecosystems. This program would improve the quality of life for residents by reducing the stress of health and financial concerns. Further, this strategy can be modeled on the success of the Central New York Water Authority's Water Education Program.[95] This education campaign works to unify residents of all ages to engage with their water resources and better understand their individual impact.

As stated before, the fundamental component of these programs is to create a better awareness of lead service lines. Currently, the City of Chicago and the EPA offer free self-administered lead testing kits.[96] Educating residents on water quality and potability could enhance residents' quality of life by increasing public health awareness, promoting cost savings, and advocating for sustainable water use.

Complexity

Key Indicators

Cross-Energy Connections

Lakefront apartments in South Shore. Source: Reconnect Consultants

CONNECTIVITY

CONNECTIVITY

A resilient community builds strength through physical, virtual, and social connections between people, places, and ideas. In the South Shore Corridor Study, residents asked for more green space, safer and cleaner pedestrian walkways, and an increased number of bus stops with comfortable infrastructure. South Shore has one of the lowest rates of broadband accessibility in the city, with only 54% of residents having internet access in their homes. To build connectivity within South Shore, this plan establishes three goals focused on enhancing public and active transportation, increasing broadband connection rates by building a municipally run and owned fiber optic network, and implementing technological infrastructure that increases the use of renewable energy and engages residents with their community.

Our goals seek to restabilize the community with an improved pedestrian environment; to revitalize the community through new social technology hubs; and to build resilience to climate-related threats with solar-powered infrastructure and green alleys.

By focusing on these goals, this plan ensures that South Shore residents will have the ability to be in connection with one another, the city in its entirety, and the world beyond.

GOAL 1
Encourage use of less carbon-intensive modes of transportation

GOAL 2
Create a Municipal Broadband Network

GOAL 3
Implement public infrastructure that technologizes and connects the community

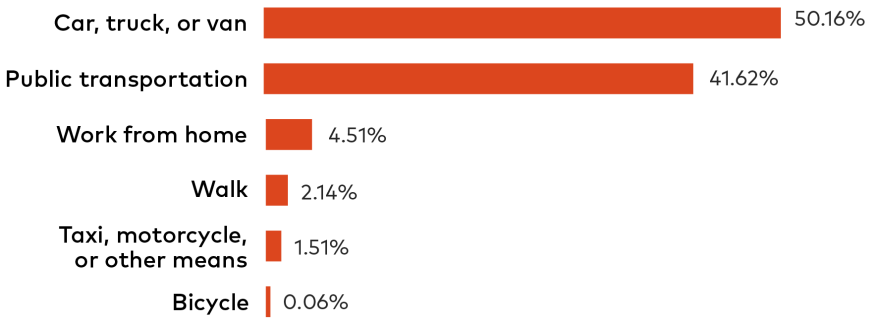
GOAL 1: ENCOURAGE USE OF LESS CARBON-INTENSIVE MODES OF TRANSPORTATION

As South Shore is a compact, dense neighborhood with a well-connected street grid, the community already enjoys an active pedestrian environment. More than 40% of households do not own a car, meaning the other 60% must walk, roll, bike, or take public transportation to commute, get to school, access healthcare, and run errands. Only 44% of South Shore residents drive to work.[97]

However, like most of Chicago and the rest of the US, South Shore is experiencing an upward trend in driving and a decrease in the usage of active modes.[98] Gasoline is a major fuel expense for those who drive frequently, especially for lower-income individuals.[99] Encouraging drivers to use other modes of transportation will decrease traffic and congestion, reduce air pollution and greenhouse gases, free up street parking, and limit the burden of gasoline cost on individuals. We propose three strategies for improving the comfort and safety of South Shore's existing sidewalk users, cyclists, and public transportation riders, and inviting those who normally drive to use these alternative active modes.

The first two strategies involve improvements long advocated for by community members: better streets and transit stops.[100] These strategies, with the added benefits of street beautification and encouraged commercial and social activity, have already been implemented in upscale Chicago neighborhoods. South Shore has historically been underinvested, and deserves access to the assets that have improved wealthier communities. The last strategy seeks to encourage the growth of active transportation, especially biking, by providing education to community members along with low-cost or free resources such as bike repair.

Figure 27: Means of Transportation to Work in South Shore, 2019



Source: ACS 2019

STRATEGY 1.1

Improved pedestrian realm

Walking is not just about moving from point A to point B, but also about getting light exercise, socializing with neighbors, and breathing fresh air. Street furniture – such as benches, chairs, tables, water fountains, and trash cans – assists folks with longer walks and creates more opportunities for socialization, serving to encourage walking as a mode choice. Street trees provide shade on hot days, protect people from speeding cars, help clean the air, and beautify the streets.

We propose adding both furniture and trees to the streets and sidewalks that are lacking improvements throughout the neighborhood, specifically E. 71st Street, E. 75th Street, Stony Island Ave, and Exchange Ave. As all these corridors support neighborhood commercial use but contain many empty storefronts, encouraging an active street life could improve the viability of these streets as shopping corridors. The shade provided by trees planted along these streets would reduce the urban heat island effect and reduce energy costs for cooling the surrounding buildings.[101] Furthermore, as all of these streets contain busy public transportation lines, this strategy creates a more comfortable environment for current users and encourages more people to frequent public transit.

Street furniture and trees can be installed relatively quickly and cheaply, and enjoy

Bike Lane in South Shore. Source: Reconnect Consultants

broad support among the community.[102] This project could be completed in conjunction with the Chicago Department of Transportation (CDOT), the South Shore Chamber of Commerce, and the Alderman's office, all of which are able to provide funding and implementation.

Complexity

Key Indicators

Eq Cs

STRATEGY 1.2

Better bus shelters

Bus shelters and benches are cost-effective ways to improve sidewalk and transit users' comfort, especially for the community's elderly population. Given the efficiency advantages in energy use and road space that buses have over personal vehicles, it is a high priority to ensure that waiting for and riding buses is comfortable. Particularly in commercial corridors and in front of grocery stores, bus shelters need to have adequate seating options and protection from the elements. Elderly populations, families with children, and those with mobility challenges need proper accommodations in order to make riding the bus a viable option.

Bus shelters have the ability to serve as microcosms of the community with local art displayed and nearby events advertised. They can also become mini Wi-Fi hubs, which are often powered by solar panels on the roof of the shelter. This strategy would consist of lobbying efforts directed at the city, particularly to the Department of Transportation and local aldermen. Funding will likely come from CDOT, especially its Complete Streets Transit Station budget.

EXISTING BUS STOP

South Shore Bus Stop. Source: Reconnect Consultants

PROPOSED DESIGN

Solar Powered Art Bus Stop in Pinellas County, FL. Source: Swartz Art

Complexity

Key Indicators

Eq Cs

Cross-Energy Connections

STRATEGY 1.3

Culture of active transportation

Active transportation, defined as transportation that relies primarily on human energy, is an effective, low-carbon alternative to motorized transportation. It includes walking and biking most commonly, but can also include things like skateboards and kick scooters. As part of this strategy, we aim to increase the walkability and bikeability of the neighborhood not only to reduce emissions from cars, but also to promote an active, healthy lifestyle in South Shore. Examples of this strategy include workshops on bicycle maintenance, investments in bike racks, and repairing sidewalks and ramps in the community. Such investments were identified as an important need in the South Shore Corridor Study, and funding would likely come from CDOT, as well as the Special Service Area #42 - South Shore Chamber of Commerce.

Complexity

Key Indicators

Re Su

GOAL 2: CREATE A MUNICIPAL BROADBAND NETWORK

Broadband allows us to do work and connects us to one another, both within our communities and outward to the world, ensuring we all have opportunities to be members of the global society. Lack of access to high-speed, high-quality internet precludes individuals from the benefits of modern life, restricting their chances for full participation in a digitally-connected society and leading to inequitable opportunity distribution. South Shore contains two census tracts most in need of broadband access, and we propose three strategies to remedy this inequity: applying for funding sources through the Illinois Broadband Grant Project, constructing a community-wide fiber optic network, and implementing Wi-Fi hotspots in transit stops, community gathering areas, and business districts.

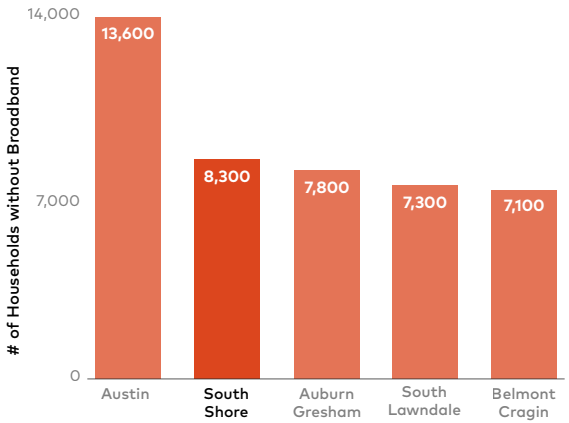
STRATEGY 2.1

Community-wide fiber optic network

In 2019, Governor Pritzker launched Connect Illinois, a program to expand broadband access to disadvantaged areas. Included in the initiative is the Illinois Broadband Grant Program, which allocated $400 million in state funding to "expand access to reliable, high-speed internet service."[103] South Shore is a historically underinvested community with one of the worst rates of broadband access in the city. 38% percent of households in South Shore (about 8,300) do not currently have access to broadband.[104] Communities and municipalities in South Cook County, a disadvantaged area that previously had poor connectivity, recently received over $1.8 million from the program.[105] They have used these funds to expand their fiber optic network operated by a non-profit.

After funding has been secured, the most essential part of the project is to construct the physical infrastructure of a fiber optic network. The community could partner with a fiber optic installation company, of which there are several in the surrounding area. Construction of the new fiber optic network would allow South Shore not only first access to public broadband, but also notoriety as a shining example of the benefits of such a system. Once the physical infrastructure has been built, community members would have access to the network.

Figure 28: Chicago Households without Broadband by Community Area, 2020



Source: Kids First Chicago/MPC

Complexity

Key Indicators Re Cs

STRATEGY IN ACTION: DOUGLASS PARK

In another predominantly Black neighborhood, a park serving as a central hub of the community was recently transformed into an ideal place to connect to the internet while also practicing social distancing. Through a partnership with Ignite Cities and Verizon, as well as the tech startup Mesh ++, Chicago Public Schools (CPS) worked to install solar-powered Wi-Fi devices in North Lawndale's Douglass Park. The devices have been paired with distribution of CPS-owned laptops to better serve communities lacking the resources necessary for remote learning. North Lawndale's Alderman, Michael Scott Jr., believes the low cost and reliability of the devices makes them ideally suited to the task, and has advocated for their installation in other parks throughout the city.

Douglass Playground at Douglass Park. Source: Chicago Park District

Metra Electric Station in South Shore. Source: Reconnect Consultants

STRATEGY 2.2

Wi-Fi hotspots in community gathering areas

South Shore contains two of Chicago's census tracts most in need of broadband access.[106] As this need for universal broadband dovetails with residents' desire for more community spaces, we seek to create "community hubs" of free Wi-Fi access in newly-transformed vacant parking lots, existing parks, and local transit stops. We would encourage community members and organizations to advocate for expansion of Metra's Wi-Fi program[107] and CTA's Public Wi-Fi initiative[108] to South Shore, and create five new community Wi-Fi hubs in parks, bus stops, and vacant lots.

To achieve this goal, we could partner with nonprofit groups such as the Broader Urban Involvement & Leadership Development (BUILD) organization, Leave No Veteran Behind, and Chicago Connected, as well as internet providers such as Comcast, American Wide Broadband, and Cambium Networks.

Complexity

Key Indicators

Eq Su

PARTNER FEATURE: CHICAGO CONNECTED

Launched in June 2020, Chicago Connected is a city-run program that provides free high-speed internet to Chicago Public School students and families. Over 40,000 families are currently served by Chicago Connected, almost a third of which had no home internet service prior to this program. At a time when education, social, and professional opportunities are available online, this program aims to narrow inequities due to the digital divide. The City of Chicago states that Chicago Connected is only the first phase of a path towards digital equity. In the future, Chicago Connected aims to expand their programs to provide internet access not only to CPS households, but also to all city residents. South Shore can partner with Chicago Connected to make this goal a reality.

CHICAGO CONNECTED

A Groundbreaking Initiative to Provide Free High-Speed Internet For Families in Need

GOAL 3: IMPLEMENT PUBLIC INFRASTRUCTURE THAT TECHNOLOGIZES AND CONNECTS THE COMMUNITY

Connectivity cannot be confined to internet access within the home. South Shore's many public areas are a tremendous asset that can be significantly improved through new and innovative technologies and broader integration with citywide systems. Residents of South Shore have indicated that the neighborhood needs investment in its green spaces. These spaces are an ideal place to showcase the community's commitment to renewable energy and a sustainable future. We envision a number of connectivity improvements to South Shore's public spaces, including the construction of green alleys in important neighborhood corridors, installation of solar panels on street lamps and traffic lights, and the flagship project of this goal, the development of South Shore's Rainbow Park as a "Smart Park." This project would serve as a connectivity and activity hub, complete with free public Wi-Fi, mobile device charging stations, and phone games designed to be played in the park.

STRATEGY 3.1

Green alleys

South Shore residents have expressed a need for more green space and areas to be active. In order to address this need, as well as the increasing risks of floods and heat waves due to climate change, we would create green alleys throughout the community. These renovated alleyways utilize recycled materials to create flood mitigation elements such as permeable pavements, catch basins, and rain gardens, and reflective surfaces to reduce the urban heat island effect.[109] Green alleys can also be transformed into aesthetically-pleasing spaces welcoming for passersby or neighbors to connect with one another. We recommend partnering with the Center for Neighborhood Technology's RainReady program[110] to implement these alleys in South Shore.

Complexity

Key Indicators

Cross-Energy Connections

STRATEGY 3.2

Solar panel integration into current infrastructure

Integrating solar panels into current electrical infrastructure, such as street lamps, traffic lights, and bus stops, is a simple way to increase the amount of renewable energy used to power the community, and creates a visual representation of South Shore's commitment to renewable energy. Seeing solar panels around the community could elicit thought and conversation around renewable energy, as well as normalizing such structures and would inspire

GRAY ALLEY

Traditional impermeable alley in South Shore. Source: Reconnect Consultants

PARTIAL PERMEABILITY

South Shore alley with center alley infiltration using permeable pavement. Source: Reconnect Consultants

GREEN ALLEY

Full green alley implementation in Detroit. Source: Green Garage Detroit

Bus stop with solar panel in Los Angeles. Source: Solaripedia

solar powered infrastructure to spread throughout neighboring communities in Chicago.

Complexity

Key Indicators

Su Cs

Cross-Energy Connections

STRATEGY 3.3

Rainbow Park: A Social Technology Hub

This "Smart Park" serves not only as a location to access free Wi-Fi, but the technological additions also encourage residents to gather and connect in person as well. Additionally, adding technology to the park could engage the current generation of tech-savvy children in outdoor play. This site would be one of the first of Chicago's Smart Parks, and would encourage the adoption of the smart park model city wide. The project includes implementing various smart park technologies including free Wi-Fi, solar panel powered charging benches and stations, and interactive digital displays including educational material, games, and information on how to sign up for Park District programs. In order to engage youth, this project could partner with a smart park app, Play Biba, focused on developing smartphone application games that encourage children and adults alike to engage with and enjoy the park.

Complexity

Key Indicators

Eq Su

Cross-Energy Connections

Rainbow Beach Park Chicago Park District Sign. Source: Reconnect Consultants

STRATEGY IN ACTION: MUNICIPAL BROADBAND AURORA, IL

Aurora, IL, the second largest city in the state, was one of the first cities in Illinois to invest in publicly owned telecommunications infrastructure when it decided to pursue alternative options for widespread and consistent internet connection in 1998. In 2008, Aurora built a 60-mile Fiber Optics Network.[111] This allowed Aurora to save $485,000 per year on telecommunications costs, and greatly improved connectivity in the city. In addition to these benefits, the fiber optic network attracted attention from new businesses and federal investment from offices such as the Federal Highway Administration looking to test out new technology. One new communications company, Sciental, credits their decision to be based in Aurora on its fiber optic network. Sciental's attorney said, "Fiber was a big attraction to us. That's one of the reasons we're here."[112] The nonprofit OnLight Aurora now uses the City's fiber optic network to provide high-speed connectivity to educational institutions, businesses, healthcare facilities, social service entities, and major non-profits. OnLight was formed by the municipal board of Aurora to manage the city's fiber optic network and provide Internet access at affordable rates.

ONLight aurora

IMPLEMENTATION

Goals & Strategies	Funding Sources	Stakeholders*	Time Frame**	Key Indicators	Complexity	C.E.C***
Goal 1: Increase energy efficiency to reduce energy burden						
Strategy 1.1 Community weatherization fund	Project Fees	Renters, Homeowners, Local Business Owners, Community Partners (ex: South Shore Works, 7th Ward Greg Mitchell)	Long	Eq Re		
Strategy 1.2 Worker-owned cooperatives for weatherization projects	Illinois Weatherization Tax Credits, Project Fees	Renters, Homeowners, Local Business Owners, Community Partners (ex: Centro de Trabajadores Unidos)	Short	Su Cs		
Strategy 1.3 Community resource campaign	Invest South/West, Elevate Energy	Renters, Homeowners, Local Business Owners, Community Partners (ex: Elevate Energy), City of Chicago	Short	Eq Cs		
Strategy 1.4 New building standards	Project Fees	Homeowners, Local Business Owners, Community Partners (ex: South Shore Chamber of Commerce), Developers	Short	Re Su		
Strategy 1.5 Closed loop system for corridor businesses	City of Chicago, South Shore Chamber of Commerce, Tax Rebates, Private Investments	Renters, Homeowners, Local Business Owners, Community Partners (South Shore Works), City of Chicago	Long	Eq Su		
Goal 2: Generate renewable community energy						
Strategy 2.1 Community solar projects	Subsidies or Tax Rebates	Renters, Homeowners, Local Businesses and Nonprofits, Citizens Utility Board, Property Owners	Medium	Re Su		
Strategy 2.2 District heating	Subsidies or Tax Rebates	City of Chicago, Private District Heating Companies (Seattle Steam Company, Fort Chicago Energy Partners)	Long	Eq Su		
Strategy 2.3 Offshore wind farm on South Works site	Invest South/West, Grants, Private Investments	Renters, Homeowners, Local Businesses and Nonprofits, Property Owners, ComEd, Private Energy Companies, Private Investors	Long	Re Su		

* In addition to residents of South Shore

**Short term (0-3 years), Medium-term (3-7 years), Long-term (7-10 years)

*** Cross-energy Connections

Goals & Strategies	Funding Sources	Stakeholders*	Time Frame**	Key Indicators	Complexity	C.E.C***
Goal 3: Build energy independence and resilience at the community level						
Strategy 3.1 Community microgrid	ComEd, LO3	Renters, Homeowners, Local Businesses, Community Partners (ex: Southeast Environmental Task Force, South Shore Chamber of Commerce) , City of Chicago, ComEd	Long	Re Su		
Strategy 3.2 Job training in renewable energy fields	IL Subsidized Training Program, City of Chicago	Renters, Homeowners, Community Partners (South Shore Works, South Shore Chamber of Commerce, Centro de Trabajadores Unidos), City of Chicago	Long	Cs Su		

Goals & Strategies	Funding Sources	Stakeholders*	Time Frame**	Key Indicators	Complexity	C.E.C***
Goal 1: Ensure resident access to affordable nutritious food						
Strategy 1.1 New grocery store	New Market Tax Credit (NMTC) from Chicago Development Fund	Renters, Homeowners, Chicago Development Fund	Medium	Re Cs		
Strategy 1.2 Year-round farmers market	Farmers Market Promotion Program (FMPP)	Residents who utilize the Supplemental Nutrition Assistance Program (SNAP), Farmers Market Coalition, Illinois Farmers Market Association, Local Vendors	Short	Eq Su		
Strategy 1.3 Community gardening initiatives	Chicago Park District, Chicago Public Schools (CPS)	Local Schools, Nonprofits, Community Centers, and Property Owners	Short	Cs Su		
Strategy 1.4 Food justice education campaign and job training program	Chicago Public Schools, Farmers Market Promotion Program (FMPP)	Residents, Local Schools, Community Partners	Short	Cs Eq		

* In addition to residents of South Shore

**Short term (0-3 years), Medium-term (3-7 years), Long-term (7-10 years)

*** Cross-energy Connections

Goals & Strategies	Funding Sources	Stakeholders*	Time Frame**	Key Indicators	Complexity	C.E.C***
Goal 2: Develop a sustainable local food system for South Shore						
Strategy 2.1 Urban farming initiatives	USDA Microloan, Loans for Socially Disadvantaged Farmers and Ranchers, Fruit Tree Planting Foundation	Property Owners, Business Owners, USDA	Long	Re Su		
Strategy 2.2 Local food hub with restaurant space	New Market Tax Credit (NMTC) from Chicago Development Fund	Residents in South Shore and Neighboring Communities, Local Entrepreneurs, South Shore Chamber of Commerce	Medium	Re Cs		

Goals & Strategies	Funding Sources	Stakeholders*	Time Frame**	Key Indicators	Complexity	C.E.C***
Goal 1: Protect land along Lake Michigan from shoreline erosion						
Strategy 1.1 Barriers on shore zone, banks, and bluffs	Coastal Management Grant Program, INDR Park and Recreational Facilities Construction Program, Great Lakes Protection Fund, Chicago Department of Transportation, Chicago Park District	Residents, Illinois Department of Natural Resources, Chicago Park District, South Side Lakefront Erosion Task Force, Blacks in Green	Short	Re Cs		
Stragegy 1.2 Resilient infrastructure against the eroding shoreline	Coastal Management Grant Program, Great Lakes Protection Fund, Chicago Shoreline Protection Project, Chicago Department of Transportation (CDOT), Chicago Park District	Residents, United States Army Corps of Engineers, Chicago Park District, South Side Lakefront Erosion Task Force, Blacks in Green	Long	Re Cs		

* In addition to residents of South Shore

**Short term (0-3 years), Medium-term (3-7 years), Long-term (7-10 years)

*** Cross-energy Connections

Goals & Strategies	Funding Sources	Stakeholders*	Time Frame**	Key Indicators	Complexity	C.E.C***
Strategy 1.3 Zoning regulations to limit coastal damage	No Funding Needed	Residents, City of Chicago Department Planning and Development, Chicago Park District, South Side Lakefront Erosion Task Force, 5th Ward Alderman Leslie A. Hairston	Short	Eq Cs		
Goal 2: Enhance stormwater management						
Strategy 2.1 Healthy catch basins and storm drainage systems	City of Chicago, Metropolitan Water Reclamation District (MWRD)	Homeowners, Renters, Property Owners, Pedestrians, Bikers, Drivers, City of Chicago, MWRD	Short	Re Cs		
Strategy 2.2 Basement sump pump systems	Water Pollution Control Loan Program (WPCLP) through State Revolving Fund (SRF), Water Pollution Control Loan Program (WPCLP)	Homeowners, Renters, Property Owners, City of Chicago	Medium	Eq Re		
Strategy 2.3 Green infrastructure and maintenance education	Center for Neighborhood Technology	Homeowners, Renters, Property Owners, CNT	Long	Su Re		
Strategy 2.4 Rain barrels and rain gardens through downspout disconnections	City of Chicago, Metropolitan Water Reclamation District (MWRD)	Homeowners, Renters, Property Owners, City of Chicago, MWRD, CNT	Short	Su Re		
Goal 3: Improve clean water access and education						
Strategy 3.1 Shared-cost lead pipe replacement program	Equity Lead Service Line Replacement Program (ELSLRP)	Homeowners, Renters, City of Chicago Public Works Department	Long	Eq Cs		
Strategy 3.2 Water metering system and household fixture improvement	Community Bonds and Grants	Homeowners, Renters, City of Chicago Public Works Department	Short	Eq Cs		
Strategy 3.3 Water debt relief program	Water-For-All Ordinance from City of Chicago	Renters, Homeowners, South Shore Aldermen	Medium	Eq Cs		
Strategy 3.4 Resident water education program	Environmental Protection Agency (EPA), Southside Environmental Taskforce	Residents, Students, Educators	Short	Eq Su		

* In addition to residents of South Shore

**Short term (0-3 years), Medium-term (3-7 years), Long-term (7-10 years)

*** Cross-energy Connections

Goals & Strategies	Funding Sources	Stakeholders*	Time Frame**	Key Indicators	Complexity	C.E.C***
Goal 1: Encourage use of less carbon-intensive modes of transportation						
Strategy 1.1 Improved pedestrian realm	Chicago Department of Transportation, City of Chicago, Special Service Area #42, South Shore Chamber of Commerce	Buissiness Owners, Homeowners, South Shore Aldermen	Short	Eq Cs		
Strategy 1.2 Better bus shelters	Chicago Department of Transportation (Complete Streets Trans. Station budget)	Residents who use Public Transportation, CDOT	Short- Medium	Eq Cs		
Strategy 1.3 Culture of active transportation	Chicago Department of Transport. , Special Service Area #42, South Shore Chamber of Commerce	Pedestrians, Business Owners, Homeowners, Active Transportation Alliance	Medium	Re Su		
Goal 2: Create a Municipal Broadband Network						
Strategy 2.1 Community-wide fiber optic network	Illinois Broadband Grant Project	City of Chicago Public Works Department	Long	Re Cs		
Strategy 2.2 Wi-Fi hotspots in community gathering areas	Metra's Wi-Fi Program, CTA's Public Wi-Fi Program	Residents, Community Partners (Chicago Connected, Comcast, InSPIRE Illinois, Mesh ++, Ignite Cities, Bright Star Community)	Short	Eq Su		
Goal 3: Implement public infrastructure that technologizes and connects the community						
Strategy 3.1 Green alleys	City of Chicago, Metropolitan Water Reclamation District (MWRD)	Renters, Homeowners, CDOT, CNT (RainReady Program Regional)	Short	Re Su		
Strategy 3.2 Solar panel integration into current infrastructure	City of Chicago (the Smart Street Light Infrastructure Funding Intiative)	Renters, Homeowners, City of Chicago	Short	Su Cs		
Strategy 3.3 Rainbow Park: A Social Technology Hub	Chicago Park District, City of Chicago	Chicago Park D. , Pedestrians, Families, all residents	Medium	Eq Su		

* In addition to residents of South Shore

**Short term (0-3 years), Medium-term (3-7 years), Long-term (7-10 years)

*** Cross-energy Connections

CONCLUSION

The turbulence surrounding climate change, COVID-19, political instability, and an economic crisis continues to dominate city, national, and global perspectives. While broader systemic change is needed to address all these issues, South Shore is in a unique position to secure a resilient, equitable, and sustainable future for its residents.

Despite population decline and disinvestment in recent decades, the history of community organizing and mutual aid continues in South Shore due to the dedication of its residents and community organizations.

This plan considers energy in the form of electricity, food, water, and connectivity as a way for residents to promote resiliency, restabilize access to energy, and revitalize local infrastructure. As South Shore expands on its existing strengths, it is well-positioned to foster a vibrant community for years to come.

Mural in South Shore. Source: Reconnect Consultants

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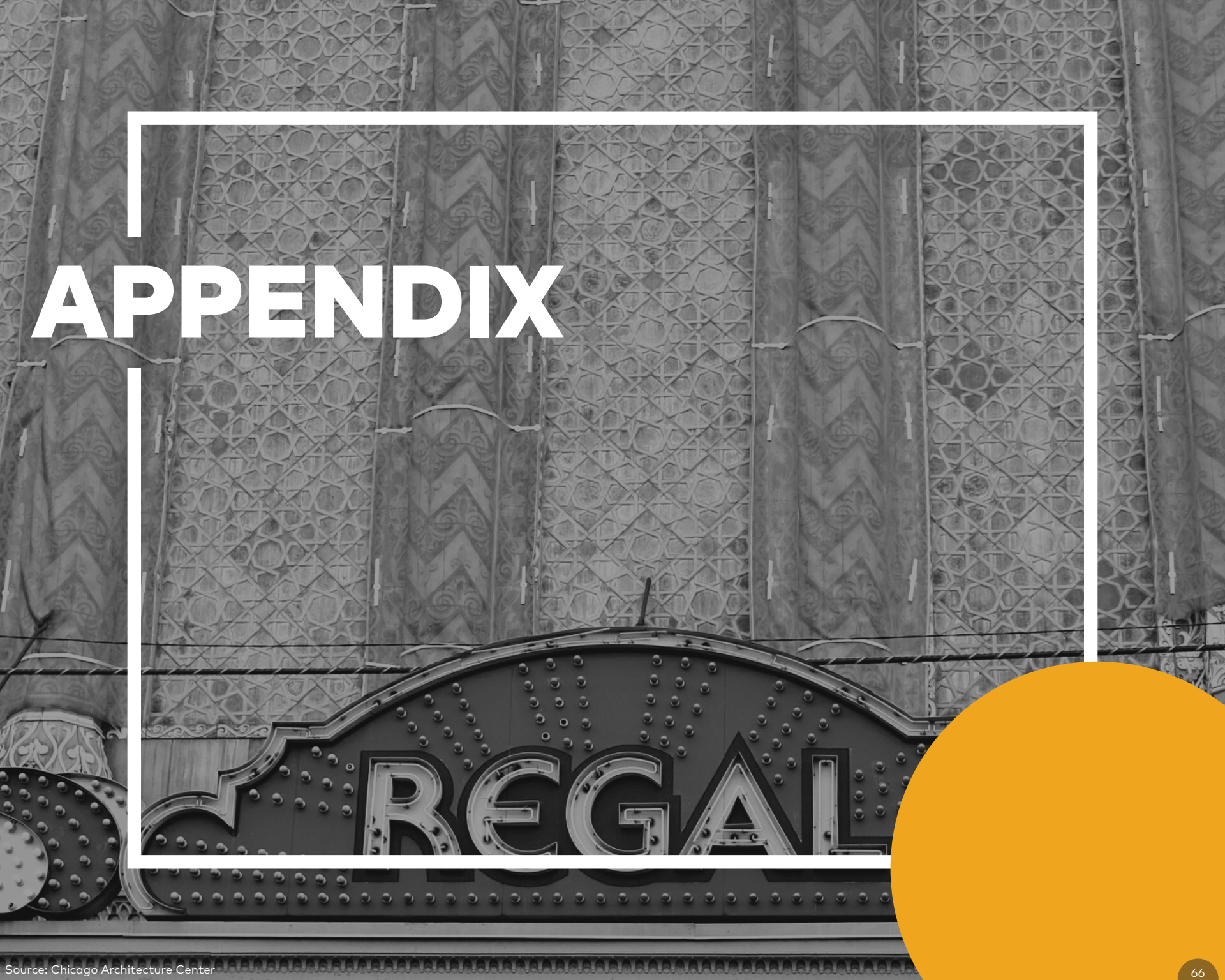
APPENDIX



Source: Chicago Architecture Center

1: GLOSSARY OF TERMS

FULL PLAN

Our Energy Definition: Energy is the source of power for all beings that gives vibrance to existence, that fuels our everyday vitality, that allows communities to be self-reliant and to withstand challenges. Energy serves to ensure human dignity, and to enhance our quality of life

ELECTRICITY

CHP: Combined heat and power

Closed loop system: An operations model for businesses that recycles commercial food waste.

Community Microgrid: An electrical grid localized to serve a local community, that is able to operate independently of the larger grid system.

District Heating: a centralized system for distributing heating or cooling throughout a neighborhood, through a system of insulated underground pipes.

Energy burden: the percentage of a household's income that is spent on energy-related costs, specifically including electricity and natural gas. A household is said to be energy-burdened when over 6% of household income is spent on energy-related costs.

FEJA: The Illinois Future Energy Jobs Act, which makes provisions for job training in clean energy sectors.

Living Building Challenge Certification: A set of building standards that encourage the mitigation of negative environmental impacts as well as regenerative and net positive environmental practices.

Special Purpose Entity (SPE) Model: A type of model for community solar project models where the project is considered a business enterprise with individual investors joining.

Utility-Sponsored Model: A type of model for community solar project models that relies on sponsorship from a local utility company.

Worker cooperative: A business or enterprise that is owned and democratically managed by all the workers. It is a business model that prioritizes workers and community interest over profits.

FOOD

Aquaponics: A method for growing plants without soil using the waste of aquatic animals such as fish to provide nutrients for the plants.

Community Garden: A piece of land, typically public but can also be private, typically used to collectively grow food by locals in a community.

Farmers Market: A market where local farmers and others sell food and other goods directly to consumers.

Food Desert: An area in which there are challenges to obtaining affordable nutritious food.

Food Hall: A stand-alone food court that features local, unique, and/or upscale vendors.

Food Hub: A facility that serves to provide services in management, distribution, processing, and storage of foods for a locale.

Food System: All the components that go into feeding a population; including the growing and harvesting, production, processing, packaging, transporting, marketing, and dealing with food waste.

Hydroponics: A method for growing plants without soil using added mineral nutrients in solution.

SNAP: Supplemental Nutrition Assistance Program

Vertical Farming: The growing of food in a vertical, or stacked, manner. This technique is often used in areas where there is limited space to grow food.

WATER

Breakwater: Offshore structure intended to mitigate flooding and prevent erosion.

Bioretention Basin: A shallow, landscaped area where the soil and plants naturally treat stormwater and slow runoff.

CNT: Center for Neighborhood Technology

Erosion: Coastal erosion is the result of fluctuating water levels in the Great Lakes which increases the rate at which bluffs and shorelines lose land along the lake, or erode. As erosion occurs, land is lost, public and private properties along the shoreline are lost, and structures and beaches are submerged into the lake.

Gray Infrastructure: A way to manage water resources through constructed structures such as sewer systems and treatment facilities.

Green Infrastructure: A way to manage water resources through mimicking the natural hydrologic process, capturing rain water where it falls, and using elements like soil and plants.

Impervious Surfaces: Where water is unable to pass through and sink into the ground, leading to water runoff.

LSL: Lead Service Line, a water main or piping system composed of predominantly lead rather than copper.

MWRD: Metropolitan Water Reclamation District of Greater Chicago

Rain Barrel: A container that collects and stores rainwater, usually connected to a building's downspout.

Rip-Rap: Human-made rocks placed along shorelines to limit erosion caused by waves.

Sedimentation: Thick material formed after the process of particles being submerged underwater due to gravity. Sediment can consist of rocks and minerals or the remains of plants and animals. Sediment moves from one place to another through the process of erosion.

Water Appliance: Interchangeable, motorized water consuming objects within a home or apartment, such as dishwashers, coffee makers, and diffusers.

Water Debt: Unpaid water bill charges, oftentimes resulting in overdue fees and water shut-offs.

Water Fixture: Typically unmovable, water consuming objects within a home or apartment such as toilets, showers, and bathtubs.

CONNECTIVITY

Broadband: High-speed Internet access

CDOT: Chicago Department of Transportation

CPS: Chicago Public Schools

CTA: Chicago Transit Authority

Fiber Optic Network: a type of broadband that uses fiber optic cables to provide faster internet speed and more durability than traditional copper cables.

Smart Park: A technology enhanced park, with components such as public Wi-Fi.

2: FUNDING RESOURCES

Organization/Agency	Specific Program	Amount Available	How to Apply/Obtain
Illinois General Assembly	Future Energy Jobs Act[113]	$750 million, spread across a variety of programs	Largely chosen or programmed by GA already
Federal Emergency Management Agency (FEMA)	Building Resilient Infrastructure and Communities Pre-Disaster Mitigation Grants[114]	$500 million per year	Competitive application process, with local governments adopting hazard mitigation plans and then applying for funding
Federal Emergency Management Agency (FEMA)	Hazard Mitigation Grant Program[115]	Up to $35.333 billion per year, distributed nationwide among areas affected by natural disasters	Formula program after a Presidential Major Disaster Declaration; states apply, and then distribute to local sub-applicants
City of Chicago, Department of Planning and Development (DPD)	INVEST South/West[116]	$250 million, spread across 10 target neighborhoods including South Shore	Competitive application process, with local governments adopting hazard mitigation plans and then applying for funding
City of Chicago, Department of Assets, Information, and Services[117]	Unnamed program focusing on energy procurement	$113,966,054, in 2021 City Budget	N/A
City of Chicago, Environmental Protection and Energy City Council Committee[118]	N/A	$206,000, in 2021 City Budget	N/A

Organization/Agency	Specific Program	Amount Available	How to Apply/Obtain	Connected Strategies
City of Chicago, Department of Transportation (CDOT)	Complete Streets Stations[119]	$5 million per year	Lobby CDOT for some of this to be spent in South Shore	1.2
City of Chicago	Aldermanic Menu[120]	Varies	Lobby South Shore's aldermen	1.1
South Shore Chamber of Commerce (SSCC)	Special Service Area #42[121]	N/A	Work with SSCC	1.3
State of Illinois, Department of Commerce and Economic Opportunity	Illinois Broadband Grant Program[122]	$400 million	Local governments and private corporations can apply for matching state grants	2.1, 2.2

Organization/Agency	Specific Program	Amount Available	How to Apply/Obtain	Connected Strategies
Illinois General Assembly	Future Energy Jobs Act: Solar Training Pipeline Program[123]	$9 million, distributed over 3 years	Partnerships with educational institutions	3.2
Illinois General Assembly	Future Energy Jobs Act: Craft Apprenticeship Program[124]	$9 million, distributed over 3 years	Partnerships with educational institutions	3.2
Illinois General Assembly	Future Energy Jobs Act: Multi-Cultural Job Training Program[125]	$12 million, distributed over 3 years	Partnerships with educational institutions	3.2
Federal Emergency Management Agency (FEMA)	Building Resilient Infrastructure and Communities Pre-Disaster Mitigation Grants[126]	$500 million per year	Competitive application process, with local governments adopting hazard mitigation plans and then applying for funding	3.1
United States Department of Energy (USDA)	Weatherization Assistance Program (WAP)[127]	Varies significantly each year[128]	Individual homeowners apply through a local Community Action Agency (CAA), which receive funds from state governments, which in turn receive them from USDA	1.1, 1.2
Chicago Bungalow Association (CBA)	Energy Savers Program[129]	N/A	Individual homeowners of ≥50 year old homes and making 80% or less of area median income can apply for insulation, high-efficiency fan installation, and furnace tuning	1.1, 1.2
City of Chicago	Retrofit Chicago Program[130]	N/A	Single-family homeowners and multi-family building owners can apply for rebates on smart thermostats and smart meters (with free installation), as well as insulation and energy-efficient home appliances	1.1, 1.2
Illinois Energy Conservation Authority (IECA)	Commercial Property Assessed Clean Energy (C-PACE) Program[131]	Up to 100%, long-term, fixed-rate financing for "energy efficiency, renewable energy, resilience, water use and electric vehicle charging building improvements"	Pre-applications are available now; process consists of pre-application and coordination with IECA, capital providers, and energy assessment professionals	1.2
United States Department of Health and Human Services	Low-Income Home Energy Assistance Program (LIHEAP)[132]	Varies by year, but generally around $3.6 billion per year	Households (homeowners and renters) apply through state agencies; must have a household income at 200% of federal poverty line or less	1.2, 1.3
United States Green Building Council (USGBC)	LEED for Cities and Communities Grant Program[133]	N/A	Up to 20 local governments will apply and be selected for staff training in LEED certification process and further collaboration throughout the upcoming year	1.4

Organization/Agency	Specific Program	Amount Available	How to Apply/Obtain	Connected Strategies
United States Department of Agriculture (USDA)	Renewable Energy Systems and Energy Efficiency Improvements Program (REAP)[134]	$35.4 million per year	Competitive application process, focused on agricultural producers	1.3, 2.1
Chicago Development Fund (CDF)	New Market Tax Credits (NMTC)[135]	$356 million since 2007	Project sponsors (developers of new businesses in low-income Census tracts) confirm eligibility requirements and apply for financing	1.1, 2.2
United States Department of Agriculture (USDA)	Farmers Market Promotion Program (FMPP)[136]	Around $13 million per year	Project sponsors (businesses, food cooperatives, local governments, nonprofits) apply for grants to create or support farmers markets	1.2
United States Department of Agriculture (USDA)	Socially Disadvantaged Farmers and Ranchers loan program[137]	About $1 billion per year	Farmers meeting the criteria apply for government-rate loans for a wide variety of farming uses	2.1
United States Department of Agriculture (USDA)	Farm Service Agency (FSA) Microloans[138]	N/A	Farmers can apply for loans up to $100,000[139]	2.1

Organization/Agency	Specific Program	Amount Available	How to Apply/Obtain	Connected Strategies
Illinois Department of Natural Resources (DNR)	Coastal Management Program[140]	Varies by year, but around $1 million	Local governments, universities, and nonprofits apply for grants between $1,000 and $150,000 for projects improving the Lake Michigan shoreline	1.1, 1.2
Great Lakes Protection Fund[141]	N/A	$94 million endowment, spent proportionately each year based on each state's use	Anyone or any institution can apply, provided they demonstrate real, significant, regionally consequential improvements	1.1, 1.2
United States Army Corps of Engineers	Chicago Shoreline Protection Project[142]	$301 million (fixed project cost)	Already underway, led by US Army Corps of Engineers	1.1, 1.2
Illinois Environmental Protection Agency (ILEPA)	Water Pollution Control Loan Program (WPCLP)[143]	Varies, but nearly $200 million in Illinois alone in one recent quarter	Local governments and other organizations can apply with detailed project plans and an environmental checklist, among other requirements	2.2
City of Chicago	Equity Lead Service Line Replacement Program (ELSLRP)[144]	$15 million of Community Development Block Grants (CDBGs)	Homeowners making 80% or less of area median household income can apply to have their water tested for lead; if ≥15 parts per billion, can apply to have the service line replaced[145]	3.1

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