# 5 Healthy Duluth: Toward Equity in the Built Environment

## Case Summary

In 2008, local health department staff in Duluth, Minnesota, viewed *Unnatural Causes*, a video series about the contribution of social determinants to health disparities. These ideas resonated with their observations about health problems in low-income neighborhoods in their city. Since then, community groups, public health professionals, and city staff have engaged in a range of efforts to promote health equity by improving the built environment. These organizations integrated health considerations into their plans, activities, analyses, grant proposals, policies, and projects, focusing on increasing opportunities for physical activity and food access. Many communities have engaged in one-time projects or grant-funded programs to improve environmental health determinants, but Duluth's efforts stand out with respect to breadth of scope, collaboration, and sustainability. This work culminated in Mayor Emily Larson's 2016 announcement that health and fairness would be adopted as key goals of the city's new Comprehensive Plan. This chapter traces how these innovative initiatives evolved in what might seem an unlikely place: a small, postindustrial city ringed by Superfund sites that thirty years ago had one of the highest unemployment rates in the nation. This case offers insights about how state and national efforts to promote health-supportive environments can be institutionalized at the local level. The Healthy Duluth partners overcame barriers to collaboration between community and government stakeholders, promoted engagement to target the needs of disadvantaged communities, and leveraged diverse resources to sustain this work over time.

## Introduction

Every day, we make decisions that affect our health. Should I walk, take a bus, or drive to work? Should I pick up fast food or buy vegetables for a salad? Should I stay inside and watch television or go outside for a walk with my friends? These health-affecting decisions are shaped in part by the accessibility, convenience, safety, and cost of the options available where we live, work, and play. However, public health has not historically been a primary goal of policies that shape neighborhood environments. Some people have better access to healthy food and physical activity opportunities in their neighborhoods than do others. Within many cities, lower-income neighborhoods have fewer health-supporting resources than do wealthier areas. These neighborhoods also tend to have higher rates of obesity, diabetes, heart disease, and other chronic health problems. Communities, government agencies, and researchers have worked to understand these connections and explore whether changing the built environment can improve health.

In Duluth, Minnesota, citizens, foundations, and agencies concerned about health inequities in their community have undertaken a range of efforts to improve the built environments of low-income neighborhoods. Their initiatives evolved from a focus on encouraging healthy eating and physical activity to improving food access and equitable opportunities for active transportation. A core focus was on how the built environment—including recreational trails, sidewalks, roadways, public transportation systems, food stores, restaurants, and community gardens—supports the health of diverse residents. A brief summary of emerging national movements to promote public health through the built environment provides context for explaining Duluth's efforts.

Historically, health policies focused on health *care*—its quality, accessibility, and cost. However, public health professionals increasingly recognize that people's health depends on their social conditions, economic status, and physical environments. The saying that "your zip code is a better predictor of your health than your genetic code" has become a popular refrain of public health advocates (Roeder 2014). Neighborhood characteristics such as walkability, safety, and the presence of grocery stores and other health-supportive services can significantly affect people's long-term health. However, the decisions that shape built environments do not explicitly take health into account. Because these decisions are often local, communities

across the country are working to bring health into the decision processes of local governments, health systems, schools, philanthropic funders, and private developers.

Geographic differences in health outcomes are often associated with neighborhoods with concentrated poverty and higher proportions of racial and ethnic minorities (Murray et al. 2006). These neighborhoods also tend to have fewer environmental amenities and more hazards. The built environment in urban areas with a history of disinvestment, industrial pollution, and high concentrations of low-income residents is of particular concern. This section begins with an overview of how the built environment affects public health, especially as relates to obesity. This is followed by a brief history of how U.S. cities developed historically and the multiple decision processes that control future land use decisions.

### Built Environment and Public Health: Food Access and Physical Activity

The built environment includes the buildings, roads, public spaces, and parks that make up our neighborhoods (Dannenberg, Frumkin, and Jackson 2011). Features of the built environment can directly affect health by exposing people to air pollution, contaminated water, or toxic waste. The built environment also indirectly affects health by shaping the opportunities, choices, and resources available to people. Public health professionals, researchers, and communities focus especially on characteristics of the built environment that shape residents' access to healthy food and physical activity. This renewed interest emerged from recognition of the startling and growing disparities in chronic health conditions like obesity, diabetes, and heart disease. The high cost of treating chronic diseases associated with obesity has focused attention on changing people's eating and exercise behaviors. Health care costs related to obesity were estimated at $147 billion in 2008 (CDC 2017a; Carlson et al. 2015; Lee et al. 2012). The limited success of behavior education efforts led public health professionals to recognize how difficult it is for low-income people to make healthy choices, especially when they live in neighborhoods with few healthy food and physical activity options. Thus, public health professionals shifted from a focus on shaping individuals' choices to changing the polices, systems, and environments that shape a community's access to healthy food and opportunities for physical activity.

The observation that the built environment impacts people's health is not new. As described in chapter 2, concerns about high rates of disease among low-income communities drove early policies to improve sanitation, food safety, housing, and air quality, but these connections weakened over time (Kochtitzky et al. 2006). More recently, this insight was the foundation of the "Healthy Communities" movement—a diverse range of public, private, and community efforts to shape communities' built environments to promote healthy eating and physical activity (Dannenberg, Frumkin, and Jackson 2011; Robert Wood Johnson Foundation 2018a).

### The Healthy Communities Movement

With growing concern about the U.S. obesity epidemic in the early 2000s, government, nonprofit, and academic initiatives began trying to improve neighborhood resources. Many programs promoted food access and physical activity opportunities as "healthy living" or "healthy community" initiatives (Blackwell 2009). The Centers for Disease Control and Prevention (CDC) led early efforts to advance healthy living through community-level change. Between 2008 and 2012, the CDC's Healthy Communities program provided training, grants, and technical assistance to support community physical activity, healthy eating, and tobacco control efforts through a variety of initiatives, including grants from Pioneering Healthy Communities and Communities Putting Prevention to Work (CDC 2017b, 2017c).

Private foundations also played an important role. For example, starting around 2000, the Robert Wood Johnson Foundation (RWJF) made a significant commitment to funding active living research and pilot programs. The approach was explicitly modeled on earlier successes in tobacco control. The aim was to both build a research base and support systems-change initiatives in communities across the country (Orleans et al. 2009). The "Active Living by Design" initiative was launched in 2002 to promote environmental changes that encourage physical activity (Active Living by Design 2018). Over time, the program also grew to include healthy eating and other social determinants of health and in 2018 was renamed Healthy Places by Design (2018).

Programs such as Active Living by Design and many others initially focused on creating opportunities for recreational activities like walking and biking. However, they soon recognized that increasing physical activity as part of people's daily transportation routines was essential, especially

in communities where people did not have the time, flexibility, discretionary income, or social support to engage in recreational physical activity (Community Prevention Services Task Force 2018). Public transportation was integrated in the active transportation initiatives because getting to transit stops often involves walking or biking.

One approach to creating more walkable and bikeable neighborhoods is improving the availability, safety, and design of sidewalks and trails. The concept of "complete streets" encourages active transportation by slowing motorized traffic, marking bike lanes, improving crosswalks, and enhancing transit facilities (e.g., bus stops) (Smart Growth America 2018). Crime prevention through environmental design (CPTED) principles were developed to improve lighting and other environmental features that discourage crime and increase people's feeling of safety so they are more likely to walk and bike (Crowe 2000; Mair and Mair 2003). Other initiatives like "Safe Routes to School" integrated infrastructure changes with programs such as working with schools to organize "walking school buses" for children (U.S. DOT 2012; CDC 2018a).

On the other side of the obesity equation, new initiatives promoted healthy food environments. Starting around 1990, the term "food desert" was used to describe neighborhoods lacking access to healthy foods (e.g a full-service grocery store) (Beaulac, Kristjansson, and Cummins 2009). Food deserts are most common in both low-income urban and rural neighborhoods (Grimm, Moore, and Scanlon 2013; Ver Ploeg 2010). However, in urban areas the term "food swamp" may be more accurate, since these neighborhoods frequently have many food outlets selling low-cost, unhealthy fast food (Luan, Law, and Quick 2015; Osorio, Corradini, and Williams 2013). One strategy to increase community sources of affordable healthy food focuses on developing local food production (CDC 2017d; ChangeLab Solutions 2018a; Harvard School of Public Health 2018). Community gardens and urban agriculture figure prominently in these strategies, as does increasing options for buying food by "greening" corner stores, bringing in farmers' markets, innovative financing for full-service grocery stores, and "mobile markets." A second strategy is to discourage unhealthy food sources by limiting the establishment of new fast-food and corner stores. Yet other programs work with school systems to improve the nutritional quality of school meals (Robert Wood Johnson Foundation 2018b).

No single approach is effective in combating obesity alone (Sallis et al. 2006; Grimm, Moore, and Scanlon 2013; Khan et al. 2009). Instead, as with reducing tobacco use, it appears that a multilevel combination of individual, institutional, and environmental changes is needed (Grimm, Moore, and Scanlon 2013). It is difficult to evaluate the impacts of such "complex systems comprised of diverse stakeholders engaging in multiple, inter-related activities across multiple levels" (Leeman et al. 2015). As a result, "despite the almost universal acceptance that changes in PSEs [policies, systems, and environments] will improve healthful behaviors, the hard evidence for their effectiveness is just beginning to emerge" (Honeycutt et al. 2015). Nonetheless, there is an emerging consensus that built environment strategies are an important component of integrated efforts to combat obesity.

The pursuit of built environment changes that support health requires new connections between public health, communities, the private sector, and multiple government agencies (Fulton et al. 2018). As stakeholders in Duluth realized, creating an environment where healthy eating and exercising is easier for everyone requires interaction with multiple decision-making systems at many levels. The next section explains some of the policy tools available to small, postindustrial cities like Duluth as they strive to redevelop in ways that promote health equity. It builds on the brief overview of local land use management provided in chapter 2 by highlighting the primary decision processes that affect land use, transportation resources, and food access in small cities like Duluth.

### Policies, Institutions, and Actors That Shape the Local Built Environment

A comprehensive plan is a guide for a community's future (Peterson et al. 2018; American Planning Association 2015). A comprehensive plan sets forth a city's goals in a range of sectors, including land use, transportation, economic development, environment, and public facilities (Berke and Kaiser 2006; Dannenberg, Frumkin, and Jackson 2011; Cooperative Extension Service 2018). Comprehensive planning is ideally a participatory process that builds a public consensus around the future of the community. However, many cities—particularly smaller, less affluent cities—lack the staff capacity, resources, or political will to regularly update their plans, and these plans are generally nonbinding. Implementation of comprehensive plans requires sustained commitment from the city, private developers, and community organizations over time. Therefore, the planning process is important for

building the connections to support implementation, since it involves soliciting input from communities, businesses, and other stakeholders, collecting data from multiple sectors, and analyzing regional economic trends.

Land use plans usually feature prominently in comprehensive plans, providing a geographical vision of what types of developments and uses should occur, where, and how (Dannenberg, Frumkin, and Jackson 2011). Zoning ordinances set forth what types of uses are allowed in which areas to implement this vision (Maantay 2001, 2002). Building codes specify characteristics of developments and address matters such as fire safety, plumbing, and electric and mechanical systems (Dannenberg, Frumkin, and Jackson 2011; Listokin and Hattis 2005). Cities also have property maintenance codes that guide upkeep of existing buildings and facilities (International Code Council 2015).

Once adopted, comprehensive plans may inform cities' applications for grant funding, neighborhood land use plans, infrastructure improvements, and development priorities. Implementing plans is complicated by the fact that most land is privately owned, so decisions by housing, commercial, and industrial developers determine what actually gets built. However, cities control significant resources, including infrastructure, public facilities, parks, trails, and other public spaces. As well, cities may use tools like reducing taxes, grants, or offering variances to encourage desired types of private development.

Most cities have an office that plans, promotes, and oversees economic development. Cities may partner with private or not-for-profit corporations to build housing, commercial space, or industrial parks. Being involved in project financing and design gives municipalities some control over when, where, and how development happens. Cities can manage public infrastructure, including roads, water, and sewer, to influence this process. Some cities charge private developers impact fees to help offset anticipated costs to public infrastructure (Nelson and Moody 2003). Governments can serve as a "land bank," buying up land as it becomes available and holding it until a private developer comes forward (Dannenberg, Frumkin, and Jackson 2011). Thus, in addition to influencing development through planning and zoning functions, a city may employ a wide range of tools to promote development that fits its comprehensive plan.

Transportation planning is particularly complex. Although municipalities are responsible for planning, building, and maintaining local roads

within their borders, they must do so in accordance with federal and state design standards and in coordination with regional plans and programs. This makes sense, since local roadways connect with state and national highways, and there is a common national interest in consistent construction, safety, signage, and maintenance standards. Major highways and roads passing through a city may be managed by county, state, or federal transportation agencies.

Federal transportation planning and funding programs strongly impact local transportation infrastructure. In 1962, the Federal-Aid Highway Act required cities of more than 50,000 people to establish a Metropolitan Planning Organization (MPO) in order to be eligible for federal highway funding (Dannenberg, Frumkin, and Jackson 2011; U.S. DOT 2017). The MPO policy-making board is generally comprised of local elected officials who approve regional plans (U.S. DOT 2017). If a municipality wants to improve a road or facility, it may be eligible for financing through the MPO's Transportation Improvement Program (TIP). Conversely, if a state or federal transportation agency seeks to upgrade roadways within a city's boundaries, the MPO process gives the city an opportunity to weigh in.

The federal government increased its support for active transportation projects through the 2005 transportation funding bill—the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Funding dedicated to biking and walking infrastructure was reduced in 2012 under the Moving Ahead for Progress in the 21st Century Act (MAP-21), but some states have maintained support for these initiatives (U.S. DOT 2018b; Georgetown Law 2012; Transportation for America 2017). Federal resources for active transportation infrastructure may not benefit all communities equally: One study found that lower-income areas were less likely to implement bicycle and pedestrian projects (Cradock et al. 2009).

Public transit systems like local buses are generally operated by independent "authorities." A local transit authority typically controls decisions about routes, stops, schedules, finances, and equipment. It may partner with city agencies to develop infrastructure that supports public transportation, such as dedicated bus lanes on roads, pull-outs at bus stops, bus shelters, traffic signals, road design, and signage.

Municipalities interact with state and federal funding, planning, and regulatory systems in ways that shape neighborhoods' built environment. These diverse policy arenas are not coordinated with the goal of promoting

public health, nor are public health interests regularly represented in these decision-making systems. Indeed, many small cities do not have a city health department, but rather rely on the county or region for public health expertise. The cumulative impact of these disparate decisions over time has created inequitable access to health-supportive built environments. Implementing the strategies promoted by healthy living advocates to change these historical patterns requires coordinated action across many systems over a sustained period of time.

## Summary

While everyone can benefit from more physical activity and better nutrition, physical environments are most likely to pose a significant barrier to healthier living in low-income neighborhoods. Healthy community advocates focus on creating strategies that are culturally, economically, and logistically appropriate for low-income communities. Doing so requires extensive community engagement. Therefore, implementing the vision for a "healthy city" involves not only new policy outcomes but also new processes to better engage stakeholders in developing policies, programs, and projects (Corburn 2009; Dannenberg, Frumkin, and Jackson 2011).

Although this chapter focuses specifically on physical activity and food access, it is important to remember that health determinants like access to retail stores, jobs, public services, health care, stable housing, transportation, and neighborhood safety are inter-related. Creating a bike path may provide both new transportation options and exercise resources. Improved public transportation may give people more time to exercise and a way to travel to a store with affordable, healthy food. Spending less money on food may enable people to rent higher-quality housing, reducing their exposure to lead, asthma triggers, pests, or safety hazards. Thus, improving environmental conditions to support healthy living in low-income neighborhoods may be a vital contributor to reducing both health disparities and poverty.

Emerging evidence suggests that action at all levels of the "public health pyramid" is needed to reduce health disparities (Frieden 2010). For built environments, this means connecting public health to a range of private, community, and government decisions. Significant built environment decisions are made at the local level, which increases the potential for community engagement. However, most local governments have limited financial, technical, and institutional resources for involving the public.

As well, low-income communities often lack capacity to engage in efforts to improve the health-supportive resources in their neighborhood. Thus, local initiatives to promote collaboration among diverse stakeholders hold potential for improving the equity of built environments.

Stakeholders in Duluth, Minnesota, leveraged federal, state, and local resources to improve the built environment conditions that shape residents' ability to live healthy lives with an explicit goal of reducing health disparities. Informed by state and national healthy living initiatives, they focused on changing policies, systems, and environments to improve food access and opportunities for physical activity. Their diverse efforts engaged multiple agencies, programs, sectors, and institutions. These efforts were informed and initially supported by external resources, particularly from the Minnesota Department of Health (MDH), but were coordinated, sustained, and led locally.

### Connecting Environment and Health in Minnesota

Minnesota may seem like an improbable place to be a leader in health equity work, given the overall good health status of its population. However, Minnesota also has some of the worst health disparities by race and ethnicity in the nation. As the MDH's 2014 Advancing Health Equity Report states: "Minnesota ranks, on average, among the healthiest states in the nation. But the averages do not tell the whole story. Too many people in Minnesota are not as healthy as they could and should be, and the health disparities that exist are significant, persistent and cannot be explained by biogenetic factors. Minnesota has these disparities in health outcomes because the opportunity to be healthy is not equally available everywhere or for everyone in the state" (MDH 2014, 3). The report provides data on health disparities in the state, including that African American and Native American babies die at twice the rate of white babies. It correlates these disparities with social determinants including poverty, educational attainment, and incarceration rates. The analysis recommends that state agencies adopt a "Health in All Policies" approach to pursuing health equity, provide training and data to communities, and support local initiatives (MDH 2014).

Minnesota's health equity initiative built on a foundation of prior work to promote policies, systems, and environments supportive of health for all. Minnesota was an early leader in comprehensive, systems-based approaches

to tobacco control (Public Health Law Center 2017). More recently, MDH leveraged funding from the CDC and the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and the Pew Charitable Trusts, to promote the practice of health impact assessment (HIA) in the state through grants, technical support, training, and a statewide HIA Coalition. As of 2018, the program had identified thirty-four HIAs conducted in the state (MDH 2018).

Minnesota benefited from years of work by community, not-for-profit, and private efforts to bring health considerations into nonhealth decisions. One early community effort to link built environment decisions to health was the 2010 Central Corridor Health Impact Assessment. A new "Central Corridor Rail Line" had been proposed to improve public transportation between the Twin Cities of Minneapolis/St. Paul and neighborhoods to the south. ISAIAH, a faith-based coalition of local congregations focused on racial justice, successfully applied for private foundation funding to do a HIA of this proposal.[1] The final "Healthy Corridor for All" report recommended changes in development policies, zoning, and planning around the new rail line to promote affordable housing, maximize job creation for local residents, and mitigate negative impacts on local businesses (PolicyLink 2011). This HIA helped community groups in the Twin Cities understand how powerful health arguments could be in public decisions and provided a model "for community engagement and analysis to help address community needs as (the region) plans for other transit corridors" (PolicyLink 2011, 4). Jeanne Ayers, a former leader of ISAIAH's Healthy Communities initiative, brought these experiences with her when she became MDH's Assistant Commissioner in 2011. A number of similar projects across the state increased the capacity of community groups and local governments to promote consideration of health in diverse policy arenas.

Building health equity into the state's public health infrastructure became a major focus of MDH. MDH focused on three foundational practices: (1) expand the understanding of what creates health; (2) implement a Health in All Policies approach with health equity as the goal; and (3) strengthen the capacity of communities to create their own healthy future (Ehlinger 2015). MDH Commissioner Edward Ehlinger called this the "triple aim of health equity" (Ehlinger 2015). In her role as assistant commissioner of health, Jeanne Ayers noted that the approach constituted a "theory of change to advance health equity. It blends an understanding

of power and systems change. Power can be built through organizing the narrative, resources, and people. These three arenas are completely interrelated" (Ayers 2017).

One of MDH's primary tools for promoting community health was the State Health Improvement Program (SHIP, renamed the State Health Improvement Partnership in 2016). SHIP was a cornerstone of a major health reform law passed by the Minnesota legislature in 2008 (National Cancer Institute 2008). Between 2010 and 2017, SHIP provided over $130 million in assistance to partners in all eighty-seven counties and ten tribal nations in Minnesota (MDH 2017a). SHIP's goal was to invest in community-based primary prevention activities aimed at reducing the population's risk factors for chronic disease in order to reduce long-term health care costs. The program explicitly adopted the language of "policy, systems, and environment" changes and recognized that this was a major departure from public health's traditional focus on individual behaviors (MDH 2011). In 2009, a first round of SHIP grants was issued to help local health departments promote healthy eating, encourage active living, and reduce tobacco exposure in their communities. In subsequent iterations of SHIP funding, grant guidelines added a health equity focus.

Regional private foundations, including the Center for Prevention at Blue Cross Blue Shield Minnesota, the McKnight Foundation, Headwaters Foundation for Justice, and the Bush Foundation, among others, also provided support for built environment efforts (McKnight Foundation, 2019; Headwaters Foundation for Justice 2011; Bush Foundation 2018; Center for Prevention at Blue Cross and Blue Shield of Minnesota 2015a). These funders sought to enhance health equity through community-based work to change policies, systems, and environments. For example, the Center for Prevention's goal is to tackle "the leading causes of preventable disease—tobacco use, physical inactivity, and unhealthy eating—to increase health equity, transform communities, and create a healthier state" (Center for Prevention at Blue Cross and Blue Shield of Minnesota 2015a). It does so by promoting policy change, convening stakeholders to develop new approaches, providing technical support, and funding local initiatives (Center for Prevention at Blue Cross and Blue Shield of Minnesota 2015b).[2]

A diverse array of programs, policies, and projects emerged from these efforts to create neighborhood environments that support health equity. Within this vibrant statewide context, the diversity, durability, and impact

of Duluth's efforts stand out. The Duluth initiatives are particularly remarkable given the small size, geographic challenges, and economic history of the city.

## Duluth: Geographic, Historical, Economic, and Demographic Context

Located on the western shore of Lake Superior in the northeast corner of Minnesota, Duluth has a population of 86,000 (City of Duluth 2018a). It is the seat of St. Louis County, which despite being the largest county east of the Mississippi has just over 200,000 mostly rural residents. Duluth is comprised of communities stretching from affluent eastern neighborhoods through the downtown area and west into poorer neighborhoods abutting formerly industrial sites along the St. Louis River. The downtown area is hilly, and a steep escarpment limits development to the narrow area of shoreline west of town. The forested hills surrounding the town are a treasured recreational resource for hiking, mountain biking, and skiing.

Duluth emerged in the late 1800s as an international port where agricultural products, timber, and later taconite (iron ore) from the region were transported east across the Great Lakes (Bunnell 2002). Because of this location, Duluth's first newspaper nicknamed it the "zenith city of the unsalted seas" (Greater Downtown Council 2017). It eventually developed into an industrial center dominated by the steel industry (Duluth Area Chamber of Commerce 2017; Alanen 2007). Many of Duluth's buildings date to this period, with more than half of all housing built before 1950.

The U.S. steel industry declined after 1950, and U.S. Steel's Duluth operation closed in the 1970s, along with many associated businesses. Other industries that had been the mainstay of the economy, including agriculture and timber, also waned during this time period. Meanwhile, new transportation infrastructure elsewhere (including the Panama Canal and the expansion of East Coast ports) made cross-country shipping through the Great Lakes less attractive, reducing Duluth's importance as a port. Consequently, Duluth's population dropped 30 percent from 1960 to 1980. As of 1983, Duluth had an unemployment rate of 16 percent, more than double the statewide rate and among the highest in the country (Bunnell 2002).

As a result of its industrial history, the City of Duluth has a large number of "brownfields," sites of known or potential environmental contamination (U.S. EPA 2018g). Two former industrial sites totaling around 800

acres together comprise the largest Superfund site in Minnesota. The highly polluted St. Louis River was named one of forty-three Areas of Concern (AOC) under the Great Lakes Water Quality Agreement of 1987. As an AOC, the river has been the focus of cleanup efforts that improved water quality, restored aquatic ecosystems, and addressed contaminated sediments (Minnesota Pollution Control Agency 2016). These efforts boosted water-based recreation along Duluth's extensive waterfront, including kayaking, paddleboarding, and even surfing the waves of Lake Superior.

The Duluth economy has improved significantly over the past two decades. New manufacturing, aviation, technology firms, tourism, transportation, and services drove this growth (Duluth Economic Development Authority 2018b). Health care emerged as a major sector of the local economy. Duluth also grew as a launching point for tourism in northeastern Minnesota and was named the "Best Town Ever" in the United States by *Outside Magazine* in 2014 (Pearson 2014). Recent economic growth has spurred redevelopment of downtown Duluth with new restaurants, services, and businesses. This growth has increased demand to make productive use of former industrial sites in outlying areas. With the support of the city's brownfield and economic development programs, several new light manufacturing businesses have located on these reused sites in recent years.

The population of Duluth is 90.4 percent white (U.S. Census 2016). There are significant populations of racial and ethnic minorities, particularly African American (1,988, 2.3 percent), Native American (2,124, 2.5 percent), Latino (1,305, 1.5 percent), and Asian (1,293, 1.5 percent).[3] The Native American population in Duluth includes people from several tribes and bands, many of whom have close ties to reservations in the region.

The median household income in Duluth in 2014 was $43,518 (mean $60,682) (U.S. Census 2016) and the overall unemployment rate was low (5.1 percent). Continued growth of jobs in sectors including construction, aviation, health care, education, and professional services was expected (Duluth Economic Development Authority 2018b). The booming demand for housing as a result of this growth was reflected in a low (3.5 percent) vacancy rate for rentals in 2016. Just over 60 percent of the city's housing units were owner-occupied, with a median single-family house value of $145,900.

Despite the positive economic trends in Duluth, significant economic disparities existed within the population. The unemployment rate of African

Americans was 31.3 percent compared to 7.2 percent for whites (U.S. Census 2016). Similarly, the number of African Americans (65.9 percent) and Native Americans (49.3 percent) living below the poverty level greatly exceeded the percentage of whites below the poverty level (19.9 percent). Many of Duluth's racial and ethnic minority residents live in lower-income neighborhoods adjacent to former industrial sites.

These economic, demographic, geographic, and historical conditions were reflected in the health status of people living in Duluth. Community groups representing low-income and minority populations were well aware of the health disparities within the city. With the growing national recognition of connections between environmental, economic, and social conditions and health, local stakeholders explored the relationships between the built environment and health equity in Duluth and what could be done to change them. Community, government, and private efforts to promote health equity in Duluth have evolved over the past decade.

## Shaping Duluth's Built Environment to Promote Health Equity

In the early 1980s, the Minnesota Department of Transportation (MNDOT) proposed to extend Route I-35 through downtown Duluth (Bunnell 2002). Community members organized in opposition to the plan, which would have demolished historic portside buildings, cut the city off from the waterfront, and destroyed a beloved park and rose garden. Former city planner Jerry Kimball said, "Leif Erikson Park was created by the WPA [Works Progress Administration] during the 1930s, and losing the Rose Garden was unthinkable" (Bunnell 2002, 341). The city convened a citizen's committee and began negotiations with MNDOT to modify the plan.

As part of the resulting agreement, MNDOT redesigned the project to maximize public access to the lake. A large section of the highway was built in tunnels below grade with bridges at street level, allowing better connection to the waterfront. A park constructed on top of the new highway replaced the old one, complete with a larger garden where the original roses were replanted. In addition, the project provided funding for the Lakewalk, a four-mile-long pedestrian walkway along the shore of Lake Superior. Built between 1986 and 1991, the Lakewalk became an anchor for redevelopment of the lakefront Canal Park as a tourist and recreational area (Bunnell 2002; Go Duluth MN 2018).[4]

The Lakewalk, Canal Park, and associated development marked the start of several decades of investment in outdoor recreation-based tourism that contributed to the city's rejuvenation. Trails surrounding the city earned Duluth a reputation as a mountain biking mecca. These natural resources attract year-round use despite the harsh winters—local tourism campaigns advertise the Duluth "winter experience" that includes fat-tire mountain biking in the snow as well as brewery tours and sled dog rides (Skihut 2018). Bike trails were also expanded within the city, with plans to eventually extend them the full twenty-six miles of the city's length (City of Duluth 2011).

Despite its image as a healthy, outdoor-oriented community, not everyone in Duluth was in good health. A 2013 St. Louis County Health Status Report showed that the mean life expectancy in Duluth was below the state average, and that there was a more than eleven year difference in life expectancy between wealthier and poorer zip codes (Gilley, Gangl, and Skoog 2011). Anecdotal observations by community service agency staff confirmed that many low-income and nonwhite residents faced significant health challenges. These disparities informed the efforts of a range of community agencies, government agency staff, and community leaders who sought to improve access to healthy food and opportunities for physical activity to support healthy living by all residents.

Stakeholders concerned about improving access to healthy food and physical activity first came together through the city's designation as a Minnesota "Fit City" in 2007. Over the next decade, efforts to create an environment that supported health for all residents of Duluth evolved through a wide range of activities. From an initial focus on encouraging individuals to make healthy choices, the initiative soon shifted gears to concentrate on changing policies, systems, and environments. Although many of the efforts were connected through Fit City Duluth's successor, the Healthy Duluth Area Coalition (HDAC), various initiatives were led by local agencies, community organizations, and private foundations. In addition to city, county, and regional government agencies, partners included the local YMCA, the Local Initiatives Support Corporation (LISC), Duluth's community action agency, local health systems, and many others. This collective body of work is referred to in this book as the "Healthy Duluth" initiatives.[5]

Many of the Healthy Duluth partners worked directly with low-income areas and communities of color. As well, many of the Healthy Duluth

projects directly engaged residents. However, most individuals involved in the collaborations did so in a professional capacity. Through these varied spheres of activity, a cohort of professionals developed experience promoting health equity through policies, systems, and environmental (PSE) change. They sustained this vision by institutionalizing PSE concepts in their own organizations, supporting community coalitions, building systems for sharing data, and promoting health equity as a guiding principle for local policy-making. The ways in which Healthy Duluth partners promoted a health-supportive built environment became increasingly well coordinated. These efforts were not carried out by a single umbrella organization, but rather were interwoven actions led by different stakeholders at different times. The discussion that follows describes the health equity efforts organized through Duluth's brownfields redevelopment program, Fit City Duluth, the HDAC, the St. Louis County State Health Improvement Program (SHIP), and a series of three MDH-funded health impact assessments, among others (table 5.1). The final section summarizes ongoing efforts to sustain the Healthy Duluth work.

## Brownfield Redevelopment and Healthy Living

Multiple public decisions, plans, and projects have a cumulative effect on the built environment in ways that impact community health. However, these decisions are usually made in isolation from each other. The process of brownfield redevelopment offers an opportunity to coordinate many of these forces. Because of Duluth's industrial legacy, most of the land available for potential redevelopment is a brownfield. Some of the earliest efforts to incorporate health into public decisions took place in the context of brownfield redevelopment projects. The city's Department of Business and Economic Development and the Duluth Economic Development Authority (DEDA) brownfield redevelopment work laid the foundation for the city's health equity work in other sectors.

Brownfields are properties where past land uses resulted in known or suspected environmental contamination of buildings, soil, or water (U.S. EPA 2018g; Minnesota Pollution Control Agency 2018). Government programs supporting brownfield redevelopment promote productive reuse of contaminated sites not eligible for the federal Superfund cleanup program. Because environmental remediation is so costly, developers are often wary

**Table 5.1**
Healthy Duluth timeline

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|---|---|
| 2007 | Duluth recognized as a "Governor's Fit City." |
| 2008 | Fit City Duluth forms as independent organization. |
| 2009 | Duluth team attends the CDC's "Pioneering Healthy Communities" conference. |
| | First State Health Improvement Program (SHIP) grants awarded. |
| | Safe and Walkable Hillside coalition begins. |
| 2010 | Health Duluth Area Coalition convenes. |
| 2011 | St. Louis County Health Status Report issued. |
| | Health impact assessment (HIA) conducted on the redesign of 6th Avenue. |
| 2013 | HIA of Gary-New Duluth Small Area Plan initiated. |
| 2014 | HIA of Lincoln Park Small Area Plan initiated. |
| | City receives U.S. EPA Brownfields Area-wide Planning grant for Irving Fairmount Brownfields Revitalization Plan in the Western Port Area neighborhoods.[6] |
| | St. Louis River Corridor initiative launches. |
| 2015 | "Grocery Bus" begins running. |
| 2016 | Mayor Emily Larson announces "health" and "fairness" as goals of city's new Comprehensive Plan. |
| | Zeitgeist Center for Arts and Community receives Center for Prevention grant to initiate Health Equity Collaborative. |
| | Bridging Health Duluth produces first integrated Community Health Needs Assessment in region. |
| 2017 | Team representing city, county, Metropolitan Interstate Council, and community attends National Association of Chronic Disease Directors' 3-day Walkability Action Institute. |

of buying brownfield properties. The potential for contamination is a particular problem in low-income neighborhoods where the profit margin of development may not justify cleanup costs by private developers. Federal and state brownfield programs offer funding to assess contamination, determine appropriate cleanup strategies, and develop plans for uses that are compatible with any remaining contamination (U.S. EPA 2018g).

Brownfields are usually considered economic and environmental issues. They have underappreciated significance for public health (Minnesota Brownfields 2018b). Neighbors' concerns related to brownfields typically focus on *risks* of exposure to unknown toxicants. As well, the overall impact of redeveloping brownfields can provide long-term community health *benefits* by reducing blight, creating new businesses and parks or trails, and

creating jobs. Local governments generally are motivated to participate in brownfield redevelopment efforts to pursue these potential economic, social, and environmental benefits.

Because Duluth is a fully built city, any new development will likely take place on land that is potentially contaminated by prior uses. The City of Duluth's Department of Business and Economic Development therefore has actively sought grants, technical support, and partnerships to facilitate brownfield redevelopment. U.S. Environmental Protection Agency (EPA) pilot assessment grants for brownfield sites in the early 2000s led to fifteen assistance packages between 2010 and 2018 (Timm-Bijold 2016). Since 2000, the city has received nearly $2 million in U.S. EPA site assessment grants, secured $15 million for site cleanup and redevelopment, and leveraged over $100 million in projects (Duluth Economic Development Authority 2018a; Timm-Bijold 2016).

These early cleanup projects often resulted in health-supportive changes in the built environment, although health equity was not an explicit aim. The ongoing efforts to clean up the St. Louis River decreased the potential for exposure to toxicants in surface waters, soils, and fish and expanded water-based active recreation opportunities. Several trails are located on former rail lines acquired and converted by the city. Between 2006 and 2010, the 10.2-acre Clyde Iron Works brownfield site was developed into an ice rink, sports complex, restaurant, and children's museum and is expected to serve as an anchor for additional sports and recreation facilities in the Lincoln Park neighborhood.

As part of receiving these grants, the city's economic development staff regularly attended U.S. EPA national brownfield meetings. These conferences emphasized the public health benefits of brownfield redevelopment. The U.S. EPA encouraged grantees to highlight potential community health improvements from their projects. With this guidance, Duluth's economic development program staff began seeking new ways to maximize health benefits of their work.

Interactions with brownfield programs created new opportunities for Duluth. For example, staff from the Agency for Toxic Substances and Disease Registry (ATSDR) Brownfield/Land Reuse Initiative became aware of Duluth's efforts and in 2010 invited the city to participate in a funding proposal to the Great Lakes Restoration Initiative. This project proposed to assess the public health benefits of cleanup and redevelopment of

the St. Louis River and Lake Superior waterfront. As then-mayor Don Ness stated in his letter of support, "Our driving force in seeking [ATSDR's] assistance is in seeking to inform and engage the public in the public health benefits of land reuse" (Ness 2010). Although the full project was not funded, ATSDR and the City of Duluth convened a workshop in July 2012 to engage stakeholders in identifying community health indicators for restoration and redevelopment of the St. Louis River corridor. This interaction strengthened the Department of Business and Economic Development's connections with MDH, which in turn helped foster the subsequent MDH-city partnership to conduct HIAs in western Duluth (as described later in this chapter).

Another public health connection came through Minnesota Brownfields, a statewide nonprofit group formed in 2006 to "promote, through education, research, and partnerships, the efficient cleanup and reuse of contaminated land as a means of generating economic growth, strengthening communities and enabling sustainable land use and development" (Minnesota Brownfields 2018a). Heidi Timm-Bijold, Duluth's business resources manager, was a longtime board member of the organization. Duluth's health equity efforts benefited from its long-standing involvement with Minnesota Brownfields. For example, in 2012 the city was approached by the group's graduate student intern about developing a public health indicator tool for brownfield projects. Minnesota Brownfields and MDH later completed and publicly released this tool, which was piloted in Duluth's Lincoln Park HIA in 2014 and again in 2016 for the Irving Fairmount Brownfields Revitalization Plan (Minnesota Brownfields 2018b).

These experiences brought a health perspective into brownfield redevelopment, giving city staff new tools, ways of communicating with the public about the impact of their work, and relationships with diverse stakeholders. Eventually, these connections led the city to become the lead applicant on two HIAs, further developing its capacity to integrate health considerations into municipal decisions.

### Fit City Duluth

In 2007, Duluth was recognized as part of the Minnesota "Governor's Fit City" program (Duluth News Tribune 2007). Fit City was a voluntary designation established under MDH in 2005 to highlight cities that had made

a commitment to supporting healthy living (New Ulm Minnesota 2006). Duluth's application was written by the city's Parks and Recreation Department and focused on the city's extensive system of mountain biking trails, the Lakewalk, and other physical activity resources. After being awarded the designation, Parks and Recreation staff assembled a broad-based Fit City task force to explore expanding physical activity opportunities. Lacking resources or designated staff, however, the group soon dwindled.

Mimi Stender, a Fit City member and community volunteer, incorporated a nonprofit called "Fit City Duluth" to implement these goals after the city's task force stopped meeting. Stender became the executive director and members of original task force were invited to join the new Fit City Duluth board. As a nonprofit organization, Fit City Duluth was able to apply for grants to undertake substantive work to promote active living. Fit City Duluth's initial sponsors were St. Luke's Foundation, St. Mary's/Duluth Clinic Health System (now part of Essentia Health), the Local Initiatives Support Corporation (LISC), and Northland's News Center. These resources supported core staff, an AmeriCorps volunteer, expenses associated with convening meetings and conferences, and maintaining a website. Fit City Duluth coordinated several projects including a school wellness initiative, the Safe and Walkable Hillside neighborhood coalition, and workplace health assessments.

In July 2008, the St. Louis County health department received notice of a CDC-sponsored conference called "Community Approaches to Obesity Prevention" and shared this opportunity with Fit City Duluth. Stender, along with a local pediatrician who was a Fit City board member, attended the conference. This experience inspired them to focus Fit City's goals and strategies on policy change. According to Stender, "There were lots of different cities doing different things, but the ones that spoke most powerfully to us were those that were doing policy things. … [We thought] 'this is it, now we know where we can really have an impact.'" She added, "This conference provided a renewed sense of confidence that PSE change can have a true and lasting positive impact on the health of community members" (Stender 2016).

After the CDC conference, Fit City Duluth began seeking support to pursue PSE work. Together with the local YMCA, Fit City Duluth applied for and received a Pioneering Healthy Communities (PHC) grant in 2009 (CDC 2011; Duluth News Tribune 2014). Pioneering Healthy Communities was a

national partnership between the Centers for Disease Control and Prevention and the YMCA that had already enrolled dozens of communities. The grant required local stakeholders to attend the Pioneering Healthy Communities workshop in Washington, DC in December 2009 (Duluth News Tribune 2014). Ten people from Duluth attended, including Fit City board members, health professionals, county health department staff, the city schools superintendent, the Local Initiatives Support Corporation director, and a city council member. Participants learned about research on the built environment and health and about other communities' efforts to promote safer streets, build trails, and improve access to healthy food.

Soon after, Fit City developed an action plan to promote PSE changes. One of Fit City's first policy actions was to advocate that the city adopt a complete streets policy. As Stender said, "Mayor Ness understood right away … but it was hard to create a movement within city hall. … There were departments that were a big barrier at first. But then, after a while, they really got it" (Stender 2016). In March 2010, the city council passed a resolution directing the city to develop a complete streets policy. Although a final policy was never enacted, Stender noted, "They do now plan new street construction with the complete streets idea."

Fit City recognized the need to engage multiple stakeholders in policy advocacy and initiated an informal collaborative called the Healthy Duluth Area Coalition (HDAC). Over time, Fit City Duluth became less active as an organization and, in 2010, HDAC found a new home at the Zeitgeist Center for Arts and Community.[7] Despite its short duration as an organization, Fit City Duluth played a critical role in assembling local stakeholders, accessing national resources on built environment and health, and focusing Duluth's efforts on PSE approaches.

### Healthy Duluth Area Coalition (HDAC)

After moving to the Zeitgeist Center for Arts and Community, HDAC worked to implement and broaden the scope of Fit City work plan. As Zeitgeist Center executive director Tony Cuneo said, HDAC realized that "if we can work on shared language and vision we should be able to bring together people interested in local food and healthy food to support equitable outdoor recreation and public transportation that works better for low-income people" (Cuneo 2016). Thus, HDAC strongly embraced a health

equity agenda. This focus was reinforced by the growing evidence of striking health disparities within Duluth (Bridge to Health Survey 2018; Gilley, Gangl, and Skoog 2011).

Funding to support HDAC's project-based work and convening functions came from a variety of sources over time. For example, the State Health Improvement Program (SHIP) provided support for core staff who were able to write grant proposals to other funders and coordinate the HDAC (Harala 2016). As of 2015, HDAC included seventeen local organizations and was supported by two full-time staff members, an AmeriCorps volunteer, and student interns (Healthy Duluth Area Coalition 2018).

HDAC's focused on promoting active living and healthy eating. The Fair Food Access campaign was informed by a 2011 University of Minnesota-Duluth study that identified the Lincoln Park neighborhood as a "food desert" (Pine and Bennett, 2011). HDAC developed several efforts to improve food access in this neighborhood, both through on-the-ground projects and promoting policies to enhance future access. An early effort funded by a $25,000 grant from State Farm involved community surveys to identify barriers to accessing healthy foods, inform food access improvement projects, and monitor changes over time (French 2014c). Lisa Luokkala, former director of HDAC, credits data from this survey with the success of a proposal to the Center for Prevention at Blue Cross Blue Shield of Minnesota to support the Fair Food Access campaign's work in Lincoln Park (Center for Prevention at Blue Cross and Blue Shield of Minnesota 2018a). The Fair Food Access campaign also partnered with the City of Duluth and community groups to establish a new community garden in Lincoln Park and host classes on cooking, gardening, and food preservation (French 2014a, 2015a; Wilder Research 2014).

HDAC's second area of concentration, active transportation, focused on promoting bus transit, biking, and walking. In 2012, HDAC hosted a series of public meetings to get community input on transportation initiatives (Luokkala 2012). HDAC staff also participated in a number of direct initiatives to support active transportation, such as a 2012 Hillside neighborhood bike and pedestrian survey, exploring designation of Duluth as a "bike friendly city," and promoting a "Bus/Bike/Walk" month in May each year (French 2014d; Luokkala 2013a, 2013b).

In addition to these campaigns, a key contribution of HDAC staff was convening, coordinating, and supporting communication among stakeholders

in Duluth. The Active Living and Fair Food Access campaigns both met monthly. Staff published updates on the HDAC website, communicated with members, and organized public outreach. According to HDAC, "individually, the organizations, initiatives and individuals we represent have limited capacity to advocate for public policy that supports their vision, but collectively we create a voice in the community and share resources to push policy and system changes that bring about better health" (Luokkala 2013c). Lisa Luokkala, who directed HDAC from 2011–2015, described HDAC as a "'plate,' not an umbrella, because we wanted to lift up everyone's great work and tie it to policy issues. So we became a platform to do that in Duluth." She added, "We kind of hunted as a pack for funding, which allowed us to go for larger, more comprehensive granting opportunities, then parts or portions were divvied out to organizations to complete certain parts but with a strong tie of always coming back to the table to work collaboratively" (Luokkala 2016).

Finding funding to support project-based staff who could also sustain the convening function of HDAC was an ongoing challenge. As Tony Cuneo noted, "You can get a wise funder and sell them on the need for convening but they are rarely willing to fund it long term, they want to start seeing projects again and distinct programs." He added, "To do this well you need coordination, and funding for coordination is the hardest to find" (Cuneo 2016). Recent efforts to identify new ways to sustain the HDAC are discussed in the section on Sustaining, Growing, and Evaluating Collaboration.

### The Role of Public Health in Promoting Healthy Environments in Duluth

It may seem logical that the local health department would have a key role in community health promotion efforts. However, promoting public health through changes in the physical environment is not a traditional core function of local health departments. In Duluth, the county health department's role evolved along with developing community health equity initiatives.

Before 2008, Jim Skoog's work as a county health educator focused on changing individual health behaviors and increasing public awareness (Skoog 2016). One exception was his involvement with regional efforts to reduce exposure to tobacco smoke. Health departments and community groups including the local American Lung Association had worked together

to successfully pass laws regulating smoking in indoor environments. This experience of working with a coalition to achieve policy change provided a foundation for envisioning a broader health department role in community efforts to address determinants of health. As Skoog said, "This tobacco work showed how you could be successful with policy change to impact health. …" (Skoog 2016). Thus, by the time Fit City Duluth formed, health department staff had already had a positive experience working with community coalitions to achieve change outside of the traditional scope of the health educator's practice.

Around the same time that Fit City Duluth was forming, the Center for Prevention distributed copies of the DVD *Unnatural Causes* to local health departments across the state. It told the story of how physical, economic, and social determinants contribute to health inequities across the country (Unnatural Causes 2018). According to health department staff, "that documentary and its accompanying robust website stimulated much thought and action within PHHS (St. Louis County Public Health and Human Services) and in Duluth. It led directly to the decision … to begin mapping health outcomes in St. Louis County" (Gilley, Gangl, and Skoog 2011, 26). *Unnatural Causes* presented a radically different way to think about the role of public health professionals in prevention. Rather than focusing on public education, delivering programs, and providing services, the video suggested a role for public health professionals in changing environments to achieve lasting health improvements for disadvantaged communities. As one health department staff noted, "I don't think the impact that *Unnatural Causes* had on us can be overstated" (Gangl 2016). This new way of thinking about the role of public health did not immediately resonate with health department leadership. However, with encouragement from Fit City Duluth members, staff eventually received permission to participate in the community initiatives.

Skoog joined the Duluth delegation to the Pioneering Healthy Communities conference in 2009, where he learned how local health departments were supporting PSE work in other communities. He recalled being advised by a conference speaker that reporting on the health status of different populations within the community could be a helpful contribution by a public health department (Skoog 2016). Although Duluth had been part of the seven-county "Bridge to Health" survey, which had been conducted every five years since 1995, this data was not at a fine enough geographic

scale to show local disparities (Bridge to Health Survey 2018).[8] The health department hired an intern to undertake this project in 2010, but delays in obtaining data from the state meant that the report had to be completed by health department staff over the next several years. When the report was finally released in 2013, it documented striking differences in health status between wealthier and lower-income zip codes, as well as between whites and people of color (Gilley, Gangl, and Skoog 2011). It also highlighted obesity as a major community health problem, strengthening the rationale for promoting healthy eating and active living.

Meanwhile, these ideas about expanding public health's role in community change were being incorporated in the Minnesota Department of Health's expectations for local departments. In July 2009, the state issued two-year State Health Improvement Program (SHIP) grants to community health boards and tribal authorities totaling $47 million. SHIP's goal was to help communities address barriers to good health through PSE changes (MDH 2008). Healthy eating and physical activity initiatives were among several projects in Duluth that were included in the SHIP-funded program, which was administered through the Carlton-Cook-Lake-St. Louis Community Health Board.

One of the first projects undertaken was the Safe and Walkable Hillside Coalition. This coalition was initiated by Fit City Duluth's Active Living coordinator and transitioned to the St. Louis County health department with SHIP support. The coalition's goal was to "create an environment that is safe and welcoming for all pedestrians and bikers in the Hillside Community." The group identified three goals: (1) creating a safe and walkable Hillside for everyone; (2) creating a cleaner, greener, and more inviting Hillside; and (3) making certain that children can walk and bike safely to and from school (St. Louis County Health and Human Services 2011). Health department staff participated in bike and pedestrian counts in Hillside, laying the foundation for future active transportation planning. SHIP provided technical assistance through the Arrowhead Regional Development Commission, including a walkability assessment conducted with neighborhood residents near Hillside's Grant Elementary School. This led to implementing the national "Safe Routes to School" model to encourage children to walk or bike to school (National Center for Safe Routes to School 2018). The coalition also initiated a neighborhood street festival called HillFest to encourage community cohesion. In addition to these specific projects,

the health department's work with residents around walkability provided a foundation for a HIA on the redesign of 6th Avenue in Hillside.

In 2012, a second round of SHIP funding (SHIP 2) was released. Starting with SHIP 2, St. Louis County was part of a regional application through Healthy Northland, a collaboration of local health departments that includes the Carlton-Cook-Lake-St. Louis Community Health Board as well as three additional rural counties (Aitkin, Itasca, and Koochiching counties) (MDH 2013; Healthy Northland Statewide Health Improvement Program 2018). With SHIP 2 funding, the health department continued its work in Hillside and established a second neighborhood coalition called Lincoln Park on the Move. It had similar goals to the Safe and Walkable Hillside, engaging community members in promoting a health-supportive built environment. Lincoln Park on the Move initiated a "Meet on the Street" event to promote social cohesion (Gorham 2016b). The health department also developed Safe Routes to School programs for a new middle school in Lincoln Park.

For the third round of SHIP funding in 2013, the state's guidelines changed significantly to emphasize engaging communities around health equity, consistent with the 2014 MDH Health Equity report (MDH 2014). The regional SHIP program embraced these new guidelines. After getting input from community groups, the St. Louis County health department focused on social determinants affecting low-income children. This work built on the school district's emerging interest in developing a comprehensive wellness program.

As the SHIP guidelines changed and the health department shifted its focus from community coalitions to schools, Safe and Walkable Hillside and Lincoln Park on the Move became less active. Nonetheless, residents continued to be involved in issues of community redevelopment, safety, access, and walkability projects. In addition, the health department partnered with HDAC to engage communities about planned road improvement projects. Health department staff also participated in HDAC projects including biking promotion events. The ongoing involvement of health department in community coalitions, advisory groups, and decision processes helped sustain those groups' energy and institutional knowledge. Staff also helped write proposals for additional funding to support related community efforts. Thus, MDH's efforts to promote a PSE approach through SHIP had significant impacts in Duluth (MDH 2017b). As Jim Skoog said,

"We finally figured out how to do stuff that is more permanent" (Skoog 2016). The health department has remained a consistent voice promoting health equity through PSE in the community.

### Health Impact Assessments of Neighborhood Redevelopment

Concurrent to the SHIP program, MDH began exploring the potential of using health impact assessment (HIA) to integrate health into nonhealth decisions. MDH obtained several grants intended to build capacity for HIA throughout the state. Duluth received technical support and funding for three HIAs between 2010 and 2014. These opportunities allowed local stakeholders to develop greater familiarity with HIA, use health data to analyze how built environment decisions affect health disparities, and gather community input on improving environmental health equity. Because HIAs emphasize community input, these projects also supported resident engagement efforts. As well, the HIA process required input from multiple sectors, strengthening local stakeholder relationships. Finally, because the HIAs targeted timely decisions in key locations, their recommendations established an evidence base for future action. Each of the three HIAs built collaboration, capacity, and systems to improve health equity in Duluth's built environment.

#### 6th Avenue Redesign HIA, January–June 2011

In 2010, an Arrowhead Regional Development Commission staff member identified an opportunity to apply to MDH for HIA funding. The MDH funding came through a grant from the Association of State and Territorial Health Officials (ASTHO) to conduct three HIAs in the state. The Arrowhead Regional Development Commission partnered with the St. Louis County health department to propose an HIA of a plan to redesign 6th Avenue, a busy roadway bisecting the Hillside neighborhood (St. Louis County Health and Human Services 2011). Begun in January 2011, the HIA project took around six months with an estimated total budget of $15,000 (Raab 2017). This project enabled many of the Healthy Duluth partners to work together for the first time on a transportation infrastructure project.

As noted previously, health department staff had been working with residents through the Safe and Walkable Hillside coalition for several years. Safe and Walkable Hillside had identified 6th Avenue as a major challenge

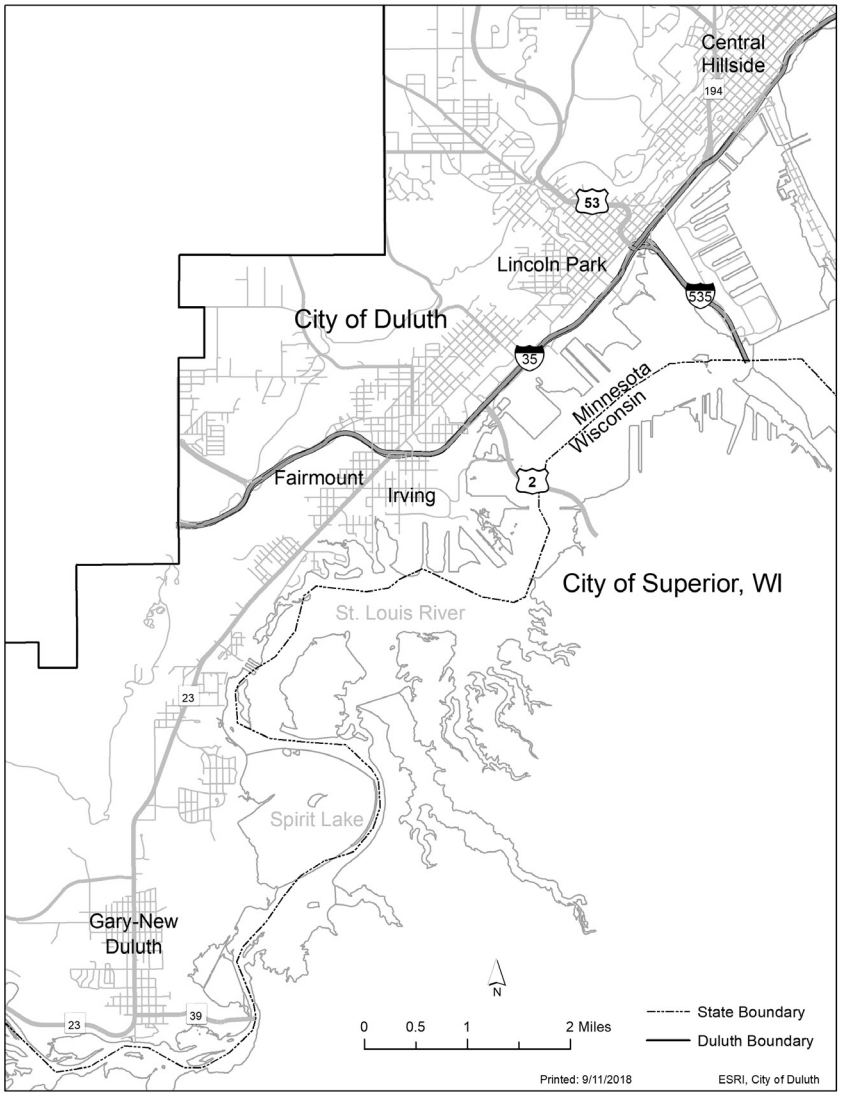


**Figure 5.1**
Map of Duluth neighborhoods where health assessments were conducted
Map credit: Richard Bunten

to the walkability of the neighborhood. The HIA took place in the wake of the 2011 consolidation of two neighborhood schools, which required many children to cross 6th Avenue to reach their new school. Because of the dangerous traffic on 6th Avenue, many of these children were being bussed to school, despite living only a few blocks away.

The HIA assessed the health impacts of the proposed 6th Avenue redesign with respect to accessibility, safety, physical activity, and livability, with a focus on vulnerable populations including children, older and disabled adults, and low-income residents (St. Louis County Health and Human Services 2011). The HIA team included staff from the county health department, the Arrowhead Regional Development Commission, and local consultants, with technical assistance from MDH staff. Because this HIA focused on road redesign, the team sought input from the city's engineers, but the city planning department was not extensively involved. The project also supported enhanced community engagement efforts.

The HIA's recommendations included increasing the number of bus stops to better accommodate people with physical limitations, adding a traffic signal, improving crosswalks, creating a designated bike lane, and better snow clearing. The team also recommended actions beyond the scope of the roadway project, including more affordable housing, improving the sidewalk network, and "adding amenities outside of the right-of-way to create greener, more neighborhood-friendly development" (St. Louis County Health and Human Services 2011, 5).

Although the roadway redesign has not yet been implemented, planning efforts continue. For example, a 2014 redevelopment strategy plan included many of the "livability" recommendations included in the HIA (Cunningham Group Architecture 2014). The 6th Avenue East HIA provided Duluth stakeholders with their first "hands-on" experience with HIA. Through this process, they strengthened connections and expanded the number of partners engaged in health equity work.

### Gary-New Duluth Small Area Plan HIA, June 2013—June 2014

In 2012, MDH received another grant from the Health Impact Project, a partnership of Pew Charitable Trusts and the Robert Wood Johnson Foundation, to expand HIA capacity. In addition to supporting a statewide HIA collaborative, the project included support for three additional local HIAs. Having recently worked in Duluth on the 6th Avenue HIA, the state health

department staff reached out to Duluth stakeholders. Together they identified two upcoming Small Area Planning (SAP) processes suitable for HIA. Duluth's comprehensive plan from 2006 called for SAPs to be developed for the economically challenged Gary-New Duluth and Lincoln Park neighborhoods. Although these projects involved different local stakeholders than the 6th Avenue HIA, MDH was encouraged to select Duluth because of the community's prior experience with HIA.

The Gary-New Duluth neighborhood was developed to house workers at the nearby U.S. Steel Duluth Works plant (Minnesota Department of Health Climate and Health Program 2014; City of Duluth 2006). Since the U.S. Steel Duluth Works plant closed in 1979, there had been little economic activity or residential investment in the area. The neighborhood is part of western Duluth, which lost 50 percent of its population between 1950 and 1980, a rate three times that of the rest of the city (Bunnell 2002, 362). As of 2010, the neighborhood had just over 3,000 residents, 99 percent of whom were white (Minnesota Department of Health Climate and Health Program 2014). Gary-New Duluth's poverty was higher (12 percent) than in Duluth as a whole (7 percent), with a median household income of $40,833. The neighborhood had only a handful of commercial businesses and many vacant houses. The nearest full-service grocery store is six miles away, a nearly twenty-minute bus ride. As Mayor Ness wrote in his letter of support for the Gary-New Duluth HIA, "The [U.S. Steel] site and the adjacent Gary-New Duluth neighborhood are representative examples of areas currently underutilized that are ripe for sustainable growth. In so doing, it will be critical to incorporate HIA components into the planning process. The planning and decision-making process will benefit greatly by a partnership amongst the City, the MDH, and the long list of stakeholders that include the U.S. EPA, the Minnesota Pollution Control Agency, neighborhood groups, the West Duluth Community Development Corporation, and the St. Louis River Alliance" (Ness 2012).

The Gary-New Duluth HIA was launched in June 2013, concurrent with the SAP process. The HIA grant provided approximately $15,000 to support local involvement in the project. The bulk of the HIA analyses were conducted by MDH staff, with input from a technical advisory committee (TAC) that included community members and representatives from the county health department, Arrowhead Area Agency on Aging, the Department of Parks and Recreation, transportation planners, and the local hospital.

Several members of the HIA TAC also served on the SAP steering committee to enhance coordination between the efforts. The HIA team conducted several public meetings, focus groups, and a community survey to solicit feedback from the public. The survey identified economic development, crime, and access to goods and services as top community concerns.

The HIA team finalized the analysis in February 2014. The HIA suggested recruiting high-job-density businesses and targeting workforce development efforts at young people in Gary-New Duluth. Similarly, the HIA noted that the planned demolition of blighted properties should be combined with appropriate lighting and streetscape design to maximize health and safety benefits. The HIA also recommended developing convenient trail access points "so that the trails do not simply cross through the neighborhood but are accessible to neighborhood residents" (Minnesota Department of Health Climate and Health Program 2014, 100).

It is difficult to evaluate to what extent the HIA will affect the process of SAP implementation over time. Nonetheless, participants noted that the HIA process broadened consideration of health, developed the capacity of local residents to participate in planning, and laid the groundwork for future collaboration among stakeholders. The HIA report also noted that the process "increased the understanding of connections between health outcomes and policy for city staff and other stakeholders, which will influence their work in the future" (Minnesota Department of Health Climate and Health Program 2014, 6).

**Lincoln Park HIA, January 2014—September 2015**

A third HIA was supported under the MDH Health Impact Project grant in connection with the Lincoln Park Small Area Plan. Lincoln Park is a low-income neighborhood on the west side of downtown Duluth, closer to the city center than Gary-New Duluth. The HIA team aimed to build on the collaborations initiated in the Gary-New Duluth HIA: "The HIA will promote sustaining discussion of health in policy-making; encouraging the city to be constantly intentional about the conversation of health" (Minnesota Department of Health Climate and Health Program 2015, 4).

Lincoln Park is a "very dense, urban neighborhood with some of the highest racial and ethnic diversity in the city. The area is a poverty pocket and a food desert; has a poor walking environment; is adjacent to past

industry and current brownfields; has a neglected housing stock due to Duluth's 1 percent rental vacancy and high percentage of rental housing; has higher crime levels; and has limited transit access" (Minnesota Department of Health Climate and Health Program 2015, 3). The designated "study area" included a population of just over 2,500. In 2010, the median income was $19,825—less than half that of Duluth as a whole—and unemployment was high (20 percent), particularly among African American (50 percent) and Native American (39 percent) residents. Lincoln Park lies within zip code 55806, which had the lowest life expectancy in the city (73.44 years).

Nonprofit and government agencies had been actively pursuing community revitalization of the Lincoln Park neighborhood for many years. Significant developments included the Clyde Park athletic complex, a children's museum, a new middle school, expanded athletic fields, and construction of the Cross City bike and pedestrian trail through the neighborhood. In his second term, Mayor Ness promoted a vision of this area becoming Duluth's "sports corridor." One goal of the SAP process was to provide steps the city could take to build on these efforts. In contrast to the Gary-New Duluth HIA, which ran in parallel to the SAP process, the Lincoln Park HIA was fully integrated into the SAP.

The Lincoln Park HIA was initially scoped by the city planning and county health departments in January 2014. In addition to community representation on the advisory committee, public input was obtained through community events, one-on-one conversations between residents and staff, and two public meetings. Based on this input, the team focused its analysis on three health determinants: housing (availability, quality and affordability), community building/social cohesion, and access to healthy food. Looking at economic redevelopment through a "health lens," the HIA recommendations emphasized the creation of living wage jobs, increasing opportunities for social interaction, reducing crime and safety concerns, and creating a positive sense of place.

Reflecting on the process, the HIA team noted that the "integrated approach to the HIA was a very positive experience. … The HIA coordinator was present to ensure health was discussed while SAP recommendations were formed. The advisory committee benefited by learning about the health process and reduced redundancy in meetings. … It is possible that the HIA had more influence because it was discussed at almost every

meeting and always on the forefront of participants' minds" (Minnesota Department of Health Climate and Health Program 2015, 133). City planning staff reported that, as the MDH had hoped, this HIA built their understanding of how their actions could promote health equity.

### Summary: HIA and the City

These three HIA processes developed relationships and capacity in HIA among local stakeholders. Working together on the HIAs forged ties between city, county, and other agencies that had not worked closely together in the past. According to one city planner, "We were very separate in land use and planning activities—city and county—until recently. We have been meeting more with county planners and are actually working together now on several land use related issues. That is awesome. [It was] even the case in city hall with offices not working closely together in the past, but now these silos have come down and we are working together—it is a very exciting time" (Kelley 2016). At the same time, the Lincoln Park HIA cautioned that "city staff are very interested in incorporating health into the city's comprehensive plan update, but were concerned with how to go about that process—for example, if an HIA would be necessary and who would coordinate it?" (Minnesota Department of Health Climate and Health Program 2015).

The grant-funded efforts also exposed Duluth stakeholders to the practice of HIA in other communities. At least two city staff attended national HIA conferences and others participated in statewide trainings and the HIA collaborative. Although these three HIA projects built capacity to promote health through built environment decisions, several barriers remained. First, the HIAs informed plans, not decisions. Getting funding to implement these plans could be a challenge. Second, absent outside funding, the community does not have the capacity to support HIAs on future public decisions.

## Sustaining Health Equity in Duluth

Stakeholders in Duluth recognized that significant inputs of external resources—including foundation and government grants and technical assistance—contributed to their PSE work. Support from external funders is unlikely to be sustained, raising the question of whether health equity has

been institutionalized and will promote changes in the built environment over time. This section explores the sustainability of Healthy Duluth's work by examining impacts on key local decision-making processes, implementation projects, and emerging collaborative opportunities.

### Health Equity in All Plans?

As described in chapter 3, the concept of "Health in All Polices" has been promoted as an overarching approach to improving health equity. Applying this idea to the built environment requires influencing local planning processes for land use, transportation, parks, and development. Although plans are not always implemented as intended, they provide a structure for coordinating decisions made across sectors, by multiple actors, over a long period of time. In other words, planning is necessary but not sufficient to implement visions of a healthier built environment. Nonetheless, there are promising signs that health equity is being integrated into local decision processes in a sustainable way.

**Comprehensive Planning** When the Duluth comprehensive plan was updated in 2006 for the first time in decades, it called for SAPs for several neighborhoods, including Lincoln Park and Gary-New Duluth.[9] The SAPs were expected to be integrated into the 2016 plan update. HIA participants hoped that the health-informed provisions of the SAPs would become part of the city's comprehensive plan, but the mechanism to do so was not clear.

Soon after taking office in 2016, Mayor Emily Larson signaled that health equity was central to her overall vision for the city.[10] She announced in her first State of the City address in April 2016 that she was adding two new guiding principles to the comprehensive planning process: "1)— how does this increase fairness and opportunity across neighborhoods? And 2)—what are the health impacts of our decisions?" (Larson 2016). Healthy Duluth stakeholders viewed this as a commitment by Duluth's leadership to integrate health equity in all city decisions, not only those affecting the built environment.

In order to consider health in its ongoing decision-making processes, the city needed sustained partnerships with public health professionals. One early opportunity to do so came in 2016, when the city invited representation from the St. Louis County health department on the Irving Fairmount

Area-Wide Plan advisory team (Timm-Bijold 2016). The health department identified a staff person with the time and flexibility to participate in this short-term commitment. However, obtaining input, data, or analysis from a public health perspective on an ongoing basis may by limited by staff capacity.

**Brownfield Redevelopment Planning in the Western Port Neighborhoods** As described earlier, the city's Department of Business and Economic Development worked for many years to integrate health into redevelopment plans and projects. For example, redevelopment of the Universal Atlas Cement site in western Duluth is expected to create nearly 100 new jobs adjacent to the Gary-New Duluth neighborhood (Minnesota Pollution Control Agency 2011). Informed by HIA recommendations, city staff made sure that site plans included trails and street design conducive to active transportation. Recognizing the need to integrate health equity into brownfield redevelopment on an ongoing basis, city staff worked with Minnesota Brownfields to develop a streamlined brownfield health indicator tool, which they piloted during the Lincoln Park HIA.

In 2014, the city received a $200,000 grant from the U.S. EPA to develop a reuse plan for the western port neighborhoods of Fairmont and Irving, two small residential neighborhoods along the St. Louis River between Lincoln Park and Gary-New Duluth. These neighborhoods are bordered by a railyard, the 255-acre St. Lawrence River Interlake Duluth Tar Superfund site, and Route I-35. This area, originally referred to as the Western Port Area Neighborhoods (WPAN), suffered significant flood damage in 2012, including destruction of the community center. As Mayor Ness said in his support letter for the project, "Duluth's rising tide has not yet reached the WPAN. In order to foster economic growth and neighborhood stability within the WPAN, we must grapple with the brownfield sites that possess the potential for reuse and we must do so in harmony with its unique green spaces and precious water resources. … We have no doubt that this [Area Wide Plan] opportunity is *THE* opportunity to move the collective vision of extant plans for the WPAN toward their much-needed implementation" (Ness 2014). Although the word "health" did not appear in the application, the twelve-page work plan guiding the project had many mentions of "human health," "public health," and "health impacts" (City of Duluth 2014a).

Without calling out health analysis as a separate process, as was done in the HIAs, the WPAN work plan expressed the city's intention to integrate public health in brownfield redevelopment. In addition, while emphasizing the health benefits of reducing exposure to environmental contaminants, the city made it clear that it aimed to address a broad range of health determinants based on community input (City of Duluth 2014a, 2014b; U.S. EPA 2015). Implementing Minnesota Brownfields' revised brownfields health indicator tool in this case contributed to a focus on social cohesion, connectivity, and economic stability in the final plan (Timm-Bijold 2016). Thus, Duluth's economic development office was a leader in bringing health into city plans and projects. As Heidi Timm-Bijold said, "We were not intentional about the health conversation [before], but now … we are very clear about the conversation as it relates to food, safety, connectivity—it is just part of the discussion. So, as we move forward … it is becoming normalized to think about health as part of the process" (Timm-Bijold 2016).

**Bike Trail and Park Planning** Duluth's comprehensive plan of 2006 recommended development of a Trail and Bikeway master plan, which was released in 2011. Responding to Mayor Ness's challenge that "Duluth should be the premier trail city in North America," the plan set forth a vision that "Duluth's trail and bikeway system has the potential to improve quality of life, foster economic development, preserve and enhance natural resources and enhance community and individual health and enjoyment" (City of Duluth 2011).

To help implement this plan, in 2014 the Minnesota state legislature approved a tourism tax ("the half and half tax") that allowed Duluth to raise up to $18 million over the next fifteen years for development of trails, parks, river access, environmental restoration, and recreational facilities around the St. Louis River.[11] The city planned to leverage other funding sources to generate a total of $50 million for twenty-five projects between 2015 and 2018 (City of Duluth 2016a, 2016b; Pioneer Press 2014).

When Mayor Larson took office in 2016, she affirmed her commitment to this initiative, calling it "an unmatched opportunity to extend the benefits of Duluth's success to all" (City of Duluth 2016b). In her first public update on implementation of the project, she emphasized community engagement, neighborhood parks, stimulating economic development and

local jobs creation, and ensuring that the project benefited all Duluth residents. The mayor also indicated an awareness of the collaborative nature of this work by promising to "increase inter-departmental collaboration to give substance and cohesion to neighborhood revitalization and economic development goals." Several projects serving low-income neighborhoods were prioritized for early construction, including the Cross City trail, improvements in Lincoln Park, and the Gary-New Duluth Recreation Area (City of Duluth 2016b). These implementation priorities evidenced a continued commitment to support active transportation, economic development, and neighborhood cohesion consistent with the health equity-focused recommendations of the SAP HIAs.

**Transportation Planning** The Duluth-Superior Metropolitan Interstate Council (MIC) is the Metropolitan Planning Organization (MPO) for Duluth. It provides regional transportation planning for a metropolitan area that spans two states, including Duluth, Minnesota, and Superior, Wisconsin, as well as several small urban areas adjacent to these cities (Duluth-Superior Metropolitan Interstate Council 2018). The MIC provides regional transportation planning services that bring together city, county, and state transportation engineers and other stakeholders on its technical advisory committee (TAC). Final plans and decisions are made by its policy board, which is comprised of local elected officials. The MIC has engaged in bike and pedestrian planning since the 1990s and formed a dedicated subcommittee including a public health representative in 2010. A staff member from the St. Louis County health department was appointed as a voting member of the TAC in 2015. Although transportation agencies are by law required to take health into consideration in their plans, health concerns are typically limited to traffic safety and air quality. Having a public health representative with a strong background in health equity ensured that consideration of broad health outcomes was a regular part of discussions.

**Limitations and Challenges** These initiatives suggest that Healthy Duluth's goal of a built environment that promotes health equity has been institutionalized into local planning processes. Nonetheless, several stakeholders expressed concerns that without formally integrating health into implementation systems—such as project design, prioritization, and funding—these visions may not be realized in practice. Others cautioned that formalizing

health equity as a decision-making criterion could lead to perfunctory mandatory review rather than meaningful collaboration and impact.

### Where the Rubber Meets the Road: Implementing Health Equity in the Built Environment

Planning is necessary, but not sufficient, to shape the built environment. Therefore, Healthy Duluth partners have increasingly focused on opportunities to implement their vision. Notable are several recent projects aimed at promoting tangible health equity improvements in Duluth's built environment.

**Food Access in Lincoln Park** Healthy Duluth partners have worked for years to address poverty and food insecurity in Lincoln Park. The strategies developed through the Lincoln Park HIA spurred new initiatives and increased support for implementing projects. Three recent projects to improve food access in the area include the "Grocery Bus," a community garden/greenhouse, and a new Kwik Trip convenience store.

The Grocery Bus was an outcome of community conversations about the health impacts of poor transportation options and food access in Lincoln Park (Timm-Bijold 2016). Community members pointed out in the Fair Food Access door-to-door surveys and HIA public engagement meetings that there was limited bus service to the Super One, the nearest full-service grocery store. As well, the bus stop location was too far from the store entrance for people to easily carry bags of groceries. HDAC's Fair Food Access campaign worked with the Duluth Transportation Authority to institute the Grocery Bus—a special bus equipped with bins for groceries that runs once a week from Lincoln Park and Morgan Park (near Gary-New Duluth) directly to the Super One (Lundy 2016, 2017).

HDAC's Fair Food Access campaign also worked with Seeds of Success (an urban agriculture project of Community Action Duluth that works with unemployed community members) and other local groups to establish a farmers' market and community gardens in Lincoln Park. The Fair Food Access campaign enhanced these projects' contributions to health, neighborhood well-being, and economic development. For example, Fair Food Access provided a table for people to sign up for health insurance at the farmers' market. To highlight the gardens' potential impact on health and equity, Fair Food Access reported the monetary value, not just the quantity,

of produce harvested. The city amplified these efforts by providing mulch, water, and compost for the gardens and was considering adding edible landscaping in trail and park projects. The city was also exploring the use of Community Development Block Grant funds for food access projects (Wilder Research 2014). These projects laid the foundation for the "Deep Winter Greenhouse," a collaborative effort of Seeds of Success, the Junior League, the City of Duluth, and a local architect that opened in 2018 (Community Action Duluth 2018; Timm-Bijold 2016).

In 2014, Kwik Trip announced its intention to locate its first Duluth store in Lincoln Park (Renalls 2014). Kwik Trip is a convenience store chain based in Wisconsin. Neighbors were initially concerned about the idea of a convenience store with high prices and unhealthy food. HDAC's Fair Food Access campaign invited Kwik Trip's chief financial officer to a community meeting about the proposed store (Wilder Research 2014). At the meeting, thirty-five residents gathered to ask the executive questions about Kwik Trip's business practices and were pleasantly surprised to learn that the stores carry a selection of fresh produce, baked goods, and staple foods (Renalls 2014). Residents were also pleased to hear that Kwik Trip is a family-owned business that sources the majority of its products from the region. Impressed with the executive's responses, they wrote a letter in support of Kwik Trip's application for a zoning variance to build the store (Wilder Research 2014). The year after Kwik Trip opened, the Fair Food Access campaign's door-to-door survey showed a noticeable improvement in residents' responses about access to food. Since then, two other Kwik Trips have opened in outlying western neighborhoods and more are planned for the future (Renalls 2015).

**"Tactical Urbanism"** The Healthy Duluth partners recognized that public engagement was key to building support for implementation efforts. Around 2015, the HDAC Active Living group began promoting a series of high-visibility, creative events to engage the public's imagination about how streets in Duluth could better promote active transportation, social cohesion, and business development. Every May, they organized events for Bus/Bike/Walk month, including bike-themed movies, bike education, a "bike with the mayor" ride, and a bike art exhibit (French 2014d). A "parklet" program gave mini-grants to businesses to take over parking spaces and create temporary mini-parks with benches, tables, art, and landscaping (French 2015b). Most of these events were supported with small grants or event sponsorships.

**Road Redesign** More concretely, Healthy Duluth sought opportunities to shape ongoing road redesign and construction projects. In 2014, health department and HDAC staff engaged in a proposed redesign of Superior Street, a major commercial street in downtown Duluth (French 2014b). They supported eliminating a section of diagonal parking in favor of parallel parking and a bike lane. Business owners successfully opposed the plan, citing concerns that reduced parking would harm their businesses. In another road construction project on 4th Street, HDAC's Active Living team successfully advocated for additional community engagement in the design process. The enhanced public input resulted in the inclusion of bike lanes, traffic-calming features, additional green space, and sidewalk buffers. Although there was no business opposition in this case, city engineers had raised concerns about the additional cost that the public support helped overcome. [12] On the western end of town, the city's Department of Business and Economic Development leveraged $3.3 million in grant funds to augment an ongoing highway repaving project with extra lighting, bus pullouts, new stoplights, and other safety improvements.

**Summary** Healthy Duluth partners increased health equity considerations in many projects by engaging with implementing agencies. The relationship-building, technical assistance, and visioning processes that developed Healthy Duluth's capacity to promote such efforts was initially supported by outside resources, including MDH, the Health Impact Project, and private foundations. The examples demonstrate how this local capacity has impacted the practice of local decision makers. These projects all resulted from local stakeholders integrating health equity goals into programs whose primary objective was not health promotion. The potential to sustain such efforts absent external funding is explored in the next section.

### Sustaining, Growing, and Evaluating Collaboration

Although many of the implementation activities described so far were carried out by a small subset of partners or by individual organizations, they were informed by nearly ten years of collaboration through Fit City Duluth, the HDAC, three HIAs, the city's brownfield program, and external training opportunities. As noted by several participants, these experiences developed partnerships between stakeholders, a "common language" around PSE and health equity, and a shared vision for a built environment that supports health for all residents.

Sustaining collaboration is challenging. Funders seldom support convening for the sake of developing collaborations for more than a few years at a time. These collaborations often decline without dedicated funding. However, there are several promising initiatives in Duluth that could help continue collaboration around these issues. These include the Zeitgeist Center's Health Equity Collaborative project, community health planning by local health systems, and the development of systems to track health data.

In 2016, the Zeitgeist Center for Arts and Community initiated a Health Equity Collaborative. This project was supported by a three-year grant from the Center for Prevention at Blue Cross Blue Shield of Minnesota's new Health in All Policies program (Center for Prevention at Blue Cross and Blue Shield of Minnesota 2018b). The Health Equity Collaborative aimed to build on past efforts of HDAC, engage new stakeholders at the community level, and implement at least eight policies to promote health equity in public institutions, private companies, and Duluth's two hospitals (Center for Prevention at Blue Cross and Blue Shield of Minnesota 2018b).

HDAC engaged health care institutions for many years, primarily as funding and technical support partners. However, the Affordable Care Act's requirement for hospitals to conduct a Community Health Needs Assessment (CHNA) provided impetus for health systems to take a broader role in prevention. In addition, it focused attention on the community benefits local hospitals must document to maintain their tax-exempt status (Keigley 2016). Healthy Duluth stakeholders worked to enhance community engagement in the CHNA and drive local health system investment in community health. Kayla Keigley, who led these efforts for Essentia Health in Duluth from 2014 to 2016, said: "It is a big culture shift for hospitals to think about population health. Now with the Affordable Care Act, it is so focused on what we can do before people come to the hospital, or better yet, keep them from coming to the hospital at all" (Keigley 2016). Initial efforts included funding support for "Together for Health," a school-based program to provide housing, economic development, and coordinating services for high-need families. Essentia Health also partnered with the health department to target prevention and clinical services to low-income housing developments where residents frequently visited the emergency department.

Building on this foundation, in 2016 the two major hospital systems in Duluth—Essentia and St. Luke's—collaborated to develop a joint CHNA. The planning group, later named "Bridging Health Duluth," included

Essentia Health-Duluth, Essentia Health-St. Mary's Medical Center, St. Luke's, the county health department, the Carlton-Cook-Lake-St. Louis Community Health Board, Healthy Northland, Generations Healthcare Initiatives, and the Zeitgeist Center for Arts and Community (Bridging Health Duluth 2016). The group was convened by Generations Healthcare Initiatives, a local foundation dedicated to promoting low-income communities' health. Health system staff undertook the majority of the analysis and writing. These partners analyzed available health data—including the Bridge to Health Survey—conducted community focus groups, and identified four priority areas. Two of these priority areas, "socioeconomic disparities based on race and neighborhood" and "obesity, including lack of access to healthy foods and physical inactivity," related directly to the Healthy Duluth work (Bridging Health Duluth 2016). In the words of one Bridging Health Duluth participant, "The goal and strategies selected were informed by foundational work and initiatives currently underway in our community, such as Health in all Policies" (Peterson 2017).

The participating hospitals committed resources to Bridging Health Duluth's implementation plan, including working with community groups "to address the social determinants of health such as housing, food access, safety, transportation, employment, and asset and income building" in low-income neighborhoods, supporting Health in all Policies (HiAP), and partnering with "local initiatives related to physical activity, multimodal transportation, and food access" to reduce obesity (Bridging Health Duluth 2016). The local health systems' growing focus on prevention and appreciation of the contributions of inequitable environmental conditions to health disparities created the potential for sustained support of healthy built environment initiatives.

Appropriate data are key to targeting, evaluating, and sustaining health equity work. Healthy Duluth initiatives made good use of available data, including the St. Louis County Health Status Report and the Bridge to Health Survey. However, these data sources were limited by scale, timeliness, and scope. Healthy Duluth partners recognized that in order to invest in community initiatives, health systems would need evidence that these efforts are effective in reducing health care costs at a fine geographic scale in real time. In 2016, Bridging Health Duluth brought together the local entities that collect or use health data to explore coordinating data systems. They continue to work on a publicly accessible tool to track community

health status at a fine geographic and temporal scale to inform planning, decision-making, and program evaluation.

Initiatives such as the Health Equity Collaborative, the joint Community Health Needs Assessment, and efforts to improve geographically based population health data systems suggest that there is continued support for efforts to promote health equity through the built environment in Duluth.

### Summary: The Future of Health Equity in Duluth's Built Environment

Health equity work in Duluth evolved in several loosely connected sectors including brownfield redevelopment, transportation, community food access, and land use planning (table 5.1). Shared experiences and coordinating groups like HDAC and Bridging Health Duluth facilitated networks across multiple sectors that developed strong personal relationships, a common vision, and shared language around health equity. As former HDAC director Lisa Luokkala said, health equity "has become a more common term that people can wrap their heads around, where four to five years ago we were really struggling to get people to grasp that concept. … It is really interesting how that culture change happens." She added, "It was very intentional that we tried to spread the word. … Now there is a broad group of professionals who use that term" (Luokkala 2016). The community is now seeing the concrete implementation of this vision through projects like community gardens, the Grocery Bus, and trail improvements in low-income neighborhoods.

Whether these sectors continue to collaborate remains to be seen. Reductions in external funding and staff turnover pose challenges for sustaining relationships and capacity in health equity analyses. Nonetheless, Duluth has made significant progress in creating a shared vision, intersectoral collaboration, and the institutionalization of a Health in All Policies approach.

## Applying the Local Environmental Health Initiative Framework to Healthy Duluth

For more than a decade, Healthy Duluth efforts have promoted an equitable and health-supportive built environment (see table 5.2). Early work by the city's office of economic development to focus on the health implications of Duluth's brownfield redevelopment projects gained traction through the HIAs of two low-income neighborhoods. Meanwhile, efforts to promote

**Table 5.2**
Healthy Duluth and the Local Environmental Health Initiative Framework

| Collaborative Function | Analysis of Healthy Duluth |
|---|---|
| Issue framing and problem definition | Reframed health disparities from a problem of individual behavior and health care to "Fair Food Access" and equitable active transportation. |
| | Defined problem as need for a health equity focus to prioritize, gain community input, and impact decisions affecting the built environment. |
| Resources for collaboration | Brought health stakeholders into new decision sectors. Generated and analyzed health data in new ways. HDAC obtained core support, new grants/projects (HIAs), and leveraged resources for partners' related projects. Grants, conferences, and agency staff provided technical information and supported community engagement. |
| Structure and decision-making process | Convened by multiple local organizations over time, including community, private, and government institutions. |
| | HDAC provided a forum for sharing information, coordinating, and developing strategy with consensus-based process. |
| | Community input provided by HDAC partner organizations and solicited through community-building, outreach, and survey efforts. |
| Impacts of collaboration: | |
| Outputs | County health status report, HIAs, brownfield plans, community surveys, HDAC newsletters/website, tactical urbanism projects. |
| Social outcomes | Relationships built through multiple projects over time facilitated ongoing partnerships and new city-county health department connections and developed a network of professionals committed to promoting health equity. |
| | Several HDAC members involved in new Health Equity Collaborative and Community Health Needs Assessment process. |
| Impacts on policies, systems, and environments (PSE) | Trail developments, community gardens, parks, and Grocery Bus have created more health-supportive environment in low-income areas. |
| | No evidence of population health improvements, but developing a system to track health outcomes. |
| | Incorporated health equity into comprehensive plan, Small Area Plans, and brownfields plans. |
| | Health representatives on transportation advisory committee. |
| | Informed MN Brownfield health indicator tool. |

recreational physical activity evolved to focus on active transportation options for low-income communities. Fit City Duluth's first initiatives to encourage healthy eating developed into a wide menu of projects aimed at supporting local food production, neighborhood food sales, and public transportation to grocery stores. These efforts gained support from the public, community groups, professionals, and elected officials, as evidenced by the mayor's directive to incorporate health as an additional goal in the 2016 Comprehensive Plan update.

### Issue Framing and Problem Definition

The initial focus of Fit City Duluth was on improving nutrition and increasing physical activity by "making the healthy choice the easy choice" (Public Health Law Center 2018). The group adopted a "policies, systems, and environments" approach to accomplish its goals. Its successor, the Healthy Duluth Area Coalition (HDAC) continued to coordinate, promote, and advocate for systems changes, particularly those that would improve food access and transportation options for low-income residents. Developing a common language and understanding of health equity helped professionals in diverse organizations coordinate around a wide range of projects, activities, and planning processes. Thus, the group reframed health disparities—which had been seen as largely an issue of access to health care and individual choices—as a community effort to provide equitable opportunities for everyone to live healthy lives. This reframing oriented health professionals and other partners away from individual education and services toward promoting policy, systems, and environmental changes.

### Resources for Collaboration

Healthy Duluth was able to access both local and external resources. These initiatives tapped into an infusion of ideas, funding, and technical support from government agencies and private foundations committed to developing new local models for addressing the social determinants of health. As well, local stakeholders directed internal resources from their organizations toward efforts to promote healthier, more equitable built environments. These resources supported capacity building and specific projects.

**Human Resources** Many of the Healthy Duluth participants contributed "in kind" staff time with support from their employers, who saw connections between health equity efforts and their organizations' core goals. These

included staff from the city, county, regional planning agencies, hospitals, and community groups. HDAC staff members were a key human resource, since they were responsible for organizing many of the meetings, facilitating discussions about strategies, proposals, and projects, and administering resources.

City staff involvement was supported by municipal leaders. Mayor Don Ness expressed how these initiatives fit in with his vision for growing Duluth: "Growth has to be sustainable, to include healthy neighborhoods, families, and individuals. Decisions made by the corporate city have a direct impact upon the community's health" (Ness 2012). Mayor Emily Larson also made it clear that she strongly embraced the idea of health equity. Thus, while many of the city's projects that promoted health equity leveraged outside funding, staff had clear mayoral support to write grants, partner with outside groups on projects, and prioritize city resources to promote built environment improvements in disadvantaged areas. Staff from city departments of business and economic development, planning, and parks were especially active in these efforts.

Another key source of human resources was the county health department. Former health educator Jim Skoog was an early leader in promoting systems changes in support of health. Subsequent funding through SHIP supported significant staff time devoted to related projects. Since 2009, there has been at least one full-time staff equivalent directed toward SHIP activities to improve determinants of health, primarily physical activity and healthy eating.

Staff from regional planning agencies serving Duluth also participated as part of their ongoing responsibilities. For example, an Arrowhead Regional Development Commission planner identified the first HIA opportunity and an MIC transportation planner contributed substantial time to the 6th Avenue HIA, as well as being longtime HDAC partners. As trained planners, these individuals understood the value of cross-sector collaboration and were personally supportive of these efforts.

Several staff from community and nongovernmental organizations were also active in HDAC. Leaders of community groups saw connections with their organizations' ongoing activities and directed human resources to aligned activities. For example, one of Community Action Duluth's organizers helped facilitate the Lincoln Park community survey in 2014. In recent years, hospital and health agency staff have become increasingly

involved by encouraging a more community engaged and PSE-focused Community Health Needs Assessment process. The human resources they provided for convening, public engagement, analysis, and communication complemented HDAC's efforts.

**Knowledge Resources** As noted throughout this chapter, Duluth benefited tremendously from conferences, training programs, and technical support provided by state and national government agencies and private foundations. Participation in these efforts built the capacity of Healthy Duluth partners. One of the first lessons local stakeholders learned was the importance of credible, detailed, timely local information. Fit City Duluth was inspired by its members' anecdotal information about the social and environmental health determinants affecting low-income areas and communities of color in Duluth. To quantify, support, and document these observations, the health department initiated the St. Louis County Health Status Report, which provided hard data about health disparities between zip codes in Duluth. The Bridge to Health Survey provided additional health-related information. Other organizations provided technical expertise, including regional health and transportation agencies. Although the HDAC did not have a consistent academic partner, the University of Minnesota-Duluth (UMD) food desert analysis was a valuable source of information, and the availability of interns from UMD provided ongoing assistance (Pine and Bennett 2011; Cuneo 2016).

Healthy Duluth drew on the emerging national consensus that the built environment impacts health and on Minnesota's strong support for environmental health equity. As the regional coordinator for SHIP, Annie Harala, said, "The state has historically provided some really solid technical assistance, and the state infrastructure is important. … I feel like we are really spoiled living in Minnesota with all this support from MDH. MDH's Health Equity report has been foundational in helping change how we do our work. … That gave us more power to come to the table saying, 'How you build the community affects health.' It wasn't just Los Angeles or San Francisco or New York City, it was that our commissioner of health believes this in Minnesota. So that helped get community on board" (Harala 2016). This credible regional support for their overall approach—in addition to the national perspective gained from conferences and training—boosted Healthy Duluth initiatives.

**Financial Resources** HDAC obtained financial resources to support convening the coalition on an uninterrupted basis since 2009. However, resources were often attached to specific projects, limiting staff time available for communications, strategy development, and coordination of partners' activities. In addition to grants, many organizations redirected existing funding sources to health equity priorities. External funding, like the HIA grants, paid for consultants, as well as for local staff, conferences, and public engagement efforts that contributed to building local capacity. SHIP funding supported local staff and some project costs. When asked if the infusion of outside resources had built sufficient capacity within Duluth to sustain this work, one regional planner said, "I feel [this work] needs to be sustained by federal agencies and foundations a bit longer to become sustainable at the local level. … As soon as these key players move on, I am concerned some of it could be weakened or watered down" (Herling 2016). Other conveners and partners obtained dedicated funding to pursue health equity work through grants, including the health impact assessments, brownfield planning efforts, and SHIP.

### Group Structure and Decision-Making Processes

Duluth's small size provided opportunities for individuals to interact in multiple settings over time. HDAC was the most durable forum for collaboration around equity in the built environment. The former HDAC director described it as an "organization of organizations" that worked "at the grass-stops" of groups representing at-risk community needs (Luokkala 2016). Its primary function was information-sharing, nurturing partnerships, and seeking project funding. HDAC's seventeen members met monthly, as did the major campaign work groups. HDAC committees made decisions by consensus.

HDAC did not have a direct role in all of the Healthy Duluth work. Many projects were conducted as partnerships of two or more groups, loosely coordinated with like-minded organizations, or communicated through blogs, public meetings, or individual relationships. Significantly, the City of Duluth was at no time a formal member of HDAC, yet city planning, funding, and policy decisions were crucial to progress (Healthy Duluth Area Coalition 2018). Despite not being members, city staff interacted with HDAC through its projects. Many of the Healthy Duluth efforts were

grant-funded, so decisions within these projects were made by the lead agency according to the established work plan.

Community members and groups had significant input into the Healthy Duluth work. Several HDAC members directly served low-income communities and communicated their clients' needs to the coalition. The majority of these projects—including the ATSDR health analysis, the HIAs, and brownfield planning—were funded by programs that emphasized community engagement. Thus, although HDAC did not directly involve residents, its projects enhanced engagement in local decisions.

### Collaborative Outputs and Outcomes

Because the health equity efforts in Duluth were diverse, diffused among multiple organizations, and interconnected, it is difficult to delineate all the Healthy Duluth outputs and outcomes. Fit City contributed to complete streets legislation. The brownfields planning efforts shaped land use and transportation design. Each of the HIA reports compiled data in an accessible way to guide SAP implementation. The county health department's reports and grant proposals were important products. The HDAC itself produced a wide range of communications materials, events, and public engagement efforts. For example, the HDAC Bus/Bike/Walk events, parklets, and blogs contributed to a community vision for healthier transportation and food access options. HDAC communications also sought to increase local decision makers' understanding of community benefits from promoting health equity through the built environment (Gorham 2016a). Going forward, integrating built environment data into the Community Health Needs Assessments will support project planning and evaluation. Thus, in addition to HDAC's direct products, many partners' outputs were influenced by this initiative.

Social outcomes were cited by many participants as important contributions to sustaining this work. Several partners also emphasized that Duluth's small size made it easier for professionals to connect across organizations and maintain individual relationships over time. As the leader of a local foundation said, "What has been great about Duluth is we do have a collaborative nature. I think we are the right size to be able to pull this sort of thing off. If we were the Twin Cities, there would be too many communities and too many players. We are small enough that we know each other and can build that trust and get something done. It is a scale that

is manageable. … There are complexities to our work, but there is a spirit of collaboration" (Peterson 2017). As one participant said, "The cool thing about Duluth is if you start a project that takes on a multisector approach to a problem, the table never gets smaller, it just keeps getting bigger, which is different than other places I have been" (Keigley 2016). Duluth's size also means that most of the professionals involved are city residents with a direct stake in the outcomes of efforts that affect their home neighborhoods, civic engagement, and personal lives.

Several projects promoted by Healthy Duluth have already impacted the physical environment. For example, the city prioritized constructing sections of the Cross City trail and parks improvements in low-income neighborhoods as part of the St. Louis Corridor Initiative. Documenting and linking health improvements to such environmental changes is likely to be a challenging long-term prospect. Bridging Health Duluth is developing a data system to track health outcomes at a temporal and geographic scale that may capture these impacts.

Policies and processes have also changed in significant ways. The mayor's commitment to include health as a goal of the 2016 Comprehensive Plan suggests a long-term commitment to these ideas. Inclusion of health interests in the Technical Advisory Committee of the Metropolitan Interstate Council has impacted transportation projects. The involvement of government staff, elected officials, and community leaders means that health equity concerns are more likely to be "top of mind" and given weight in public decisions. Although this has not been formalized in a Health in All Policies resolution or formal process between city government and the county health department, stakeholders noted that the shared understanding of how changes in the built environment can reduce health disparities has affected a wide range of decision processes. Outside of the Twin Cities, Duluth has performed the most HIAs in Minnesota and has been recognized by as a leader by the state (Raab 2017).

## Conclusions

When Fit City began, Duluth already had made progress in reducing unemployment, stabilizing its population, and attracting new development. This upward trend increased optimism about the future yet also highlighted the disparities in who benefited from Duluth's improved fortunes and who

did not. Since Duluth's designation in 2007 as a "Fit City," it has undertaken a range of efforts to improve access for all residents to health-supportive resources, particularly active transportation opportunities and healthy food. These efforts included development projects, community activities, planning efforts, and encouraging leaders' commitment to incorporate health equity considerations into local decisions affecting the built environment. The work involved community groups, service agencies, health care organizations, and multiple levels of government. Duluth has made significant progress toward Health in All Policies as a strategy for pursuing health equity. As Heidi Timm-Bijold said, "There has been a momentous but intentional aligning of the stars around this work" (Timm-Bijold 2016).

With its reputation as a postindustrial rust belt city with a recent history of high unemployment rates, observers often ask, "Why Duluth?" How did this small city develop such robust, diverse, and sustained efforts to promote health equity through decisions about its built environment? In response, local stakeholders credit the engaged and progressive spirit of Duluth, noting the robust university community, tradition of civic engagement, and the high level of voter turnout. Several interviewees stated that they originally came to the city—many as students at UMD—because of access to outdoor activities. Indeed, the story of Duluth's recent economic growth is peppered with tales of entrepreneurs and small business owners who moved to Duluth for the quality of life.[13] Former mayor Don Ness was quoted by *Outside Magazine* as saying, "Despite the weather, or maybe because of it, Duluthians are super passionate about this city" (Pearson 2014). This commitment to community was cited as a motivating and bonding force among Healthy Duluth stakeholders.

City leaders supported Healthy Duluth efforts as consistent with their vision for Duluth's future, but for the most part specific projects were initiated by staff. Recent efforts to use Community Development Block Grant (CDBG) funds and city land for urban agriculture, prioritization of St. Louis Corridor projects in low-income neighborhoods, and the directive to incorporate health in the comprehensive plan indicate growing commitment by local leaders. This commitment bodes well for the sustainability of these efforts. However, the HDAC has experienced difficulty sustaining support for convening functions over time. Given the multisectoral nature of the effort and the important roles of diverse community and government institutions, finding ways to continue this convening function is key.

The financial, technical, and human resources enjoyed by health equity efforts in Duluth over the past decade, its small scale, and the progressive cultural environment begs the question of whether its experience is replicable in other communities. Other communities may be able to borrow some of Duluth's approaches, but there may be differences based on their local resources, organizations, and culture. Duluth's experience also suggests that the process of learning together, identifying local needs, and building cross-organization relationships is a key to success. Opportunities to work together on pilot projects, interact with residents, and convene diverse groups may be essential for collaborative initiatives to identify the most productive ways to pursue equity in their local environment.