



FOOD *for* EVERY CHILD

THE NEED FOR HEALTHY
FOOD FINANCING
IN MICHIGAN

SPECIAL REPORT

ACKNOWLEDGMENTS

This report was prepared by Miriam Manon and Deirdre Church of The Food Trust and David Treering, GIS Specialist at Loyola University. It was published in March 2015. This report was made possible by a grant from the Voices for Healthy Kids Campaign, a partnership of the Robert Wood Johnson Foundation and the American Heart Association. Photographs by Ryan Donnell.



MICHIGAN must address the significant need for fresh food resources in many of its communities. A myriad of factors have created a shortage of healthy food resources in lower-income areas across the state, creating a public health crisis. The Food Trust, a nationally recognized nonprofit, issued *Food for Every Child: The Need for Healthy Food Financing in Michigan* to document these findings and to ensure that all children and their families live in communities that have access to healthy and affordable food. This goal can be achieved by stimulating the development of healthy food retail in underserved communities and supporting the production, aggregation and distribution of healthy and locally grown foods.

Despite having the nation's second most diverse agriculture industry, 17.9% of Michigan's residents are food insecure, meaning they lack reliable access to healthy food.¹ In Kent County, home to Grand Rapids, the largest city in West Michigan, 80,000 people are food insecure.² More than 1.8 million Michigan residents, including an estimated 300,000 children, live in lower-income communities with limited supermarket access.³ Underserved communities can be found in rural areas such as Hillsdale, Tuscola, Sanilac, Cold Water and Allegan, as well as in urban centers including Flint and Detroit.

The lack of access to affordable and nutritious food has a negative impact on the health of children and families in Michigan. A growing body of research indicates that people who live in communities without a supermarket suffer from disproportionately high rates of obesity, diabetes and other diet-related health problems. In contrast, when people live in a community with a supermarket, they tend to eat more servings of fruits and vegetables and are more likely to maintain a healthy weight.⁴

Increasing the availability of nutritious and affordable food in communities with high rates of diet-related diseases does not guarantee a reduction in the incidence of these diseases. However, if barriers to healthy food access can be removed, people in these communities can more easily maintain an adequate diet. Furthermore, the development of new supermarkets and other healthy food businesses, such as food hubs, farmers' markets and healthy corner stores, sparks economic revitalization; expands opportunities for Michigan farmers; and brings jobs into communities that need them most.⁵

Over 1.8 million Michigan residents, including an estimated 300,000 children, live in lower-income communities with limited supermarket access.

Through mapping, this study concludes that many lower-income communities in Michigan with poor supermarket access also have a high incidence of diet-related deaths. Access to supermarkets and other healthy food outlets is a key factor in the health and development of a community. We call upon state and local governments to take the lead in developing a public-private response to this issue. While not a situation of any one sector's making, it is in the interest of the entire community to solve this problem, a fact made all the more evident by the estimated \$3 billion Michigan spends annually on obesity-related medical costs.⁶

This report recommends the creation of a statewide healthy food financing program to incentivize healthy food retail development in communities of need and expand market opportunities for Michigan farmers. In cities and states throughout the country, such programs have improved healthy food access while creating jobs and strengthening the economic well-being of urban and rural communities.

INTRODUCTION

Many communities in Michigan have poor access to a full-service grocery store, and there are numerous communities where none exist.

This shortage of healthy food retail means that residents, particularly those in lower-income communities and rural areas, must travel out of their neighborhoods to reach the nearest store that sells fresh produce and other foods necessary to maintain a healthy diet. A growing body of research demonstrates that access to healthy food retail has a measurable impact on people's diet and health outcomes.

The Institute of Medicine and the Centers for Disease Control and Prevention have independently recommended that increasing the number of supermarkets in underserved areas would reduce the rate of childhood obesity in the United States. They also suggest that state and local governments should create incentive programs to attract supermarkets and other healthy food retail to these neglected neighborhoods.^{7,8} Such an investment would have positive economic impacts, as well. Supermarkets create jobs and revitalize communities, serving as retail anchors and sparking complementary development nearby. In addition, Healthy Food Financing programs strengthen local food systems by supporting food hubs and other distribution networks that expand market opportunities for local farmers and producers.

More than 30% of Michiganders are obese, the second highest rate of obesity in the Midwest region.⁹ In Michigan, communities of color, especially African-Americans and Hispanics, are disproportionately impacted by this crisis.¹⁰ For children, the situation is particularly alarming. In 2011, 32.6% of Michigan's youth ages 10–17 were overweight or obese.¹¹ Obese children face many physical and psychological issues, such as high blood pressure and cholesterol, diabetes, joint problems and asthma, and are more likely to be obese as adults.¹²

If rates continue to increase at their current levels, obesity-related health care costs are expected to climb to \$12.5 billion by 2018.

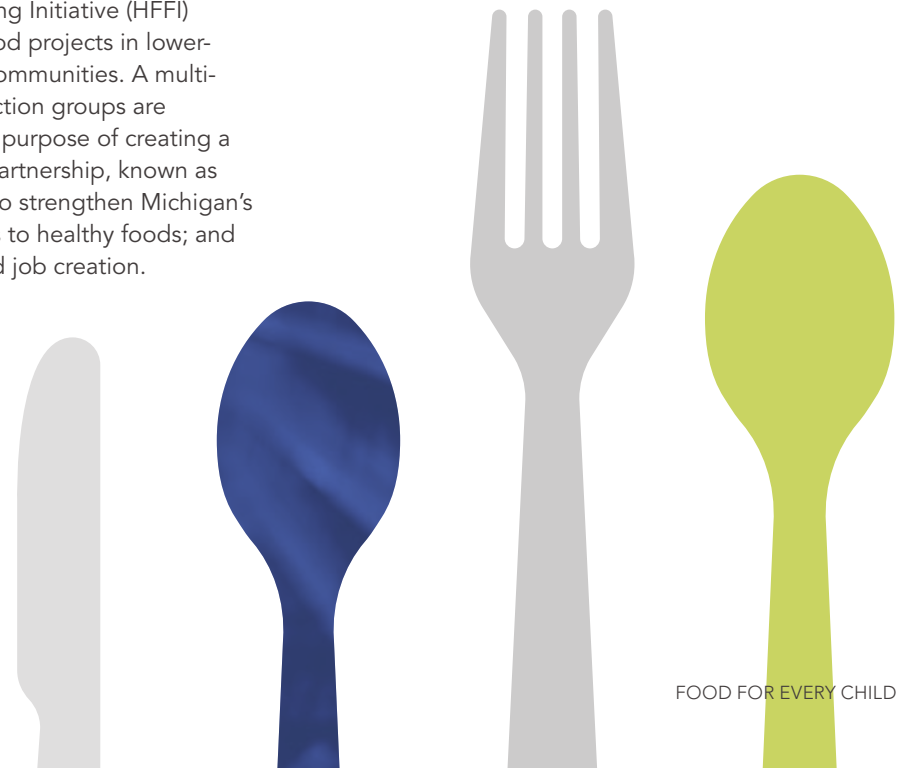
Obesity also has a tremendous economic impact in Michigan. In 2011, Gov. Rick Snyder announced that Michigan spends \$3 billion annually on obesity-related medical costs.¹³ If rates continue to increase at their current levels, these costs are expected to climb to \$12.5 billion by 2018.¹⁴ Further costs include reduced workforce productivity due to absenteeism, as well as short-term and long-term disability. These factors increase the cost of doing business in Michigan and weaken the sustainability and competitiveness of local businesses. An increase in obesity rates also reduces the number of residents physically fit to serve in the military, fill public safety positions and perform other roles requiring manual labor.¹⁵

The Food Trust issued *Food for Every Child: The Need for Healthy Food Financing in Michigan* to ensure that all children live in communities that have access to nutritious and affordable food. This report is designed, in part, to stimulate a process which will result in the development of supermarkets and other healthy food markets in lower-income communities. To achieve that goal, this study outlines the extent and implications of the supermarket shortage by identifying the gaps in food availability and the relationship between supermarket access, diet-related diseases and neighborhood income levels. (Please see the appendix for a detailed description of the methodology used to create the maps in this report.)

This study builds on the remarkable work undertaken by a variety of government, private and civic leaders in Michigan to improve access to healthy, affordable, locally grown food. In 2012, Gov. Snyder introduced the Michigan Health and Wellness 4x4 Plan to improve the health of individuals and communities throughout the state.¹⁶ That same year, Capital Impact Partners, a nonprofit certified Community Development Financial Institution (CDFI), received a \$3 million award from the federal Healthy Food Financing Initiative (HFFI) to provide funding for healthy food projects in lower-income, underserved Michigan communities. A multi-member task force and several action groups are working to grow this fund for the purpose of creating a robust statewide public-private partnership, known as the Michigan Good Food Fund, to strengthen Michigan's local food system; expand access to healthy foods; and drive economic development and job creation.

Michigan has also been a leader in creating incentive programs, such as the Michigan Double-Up Food Bucks program, which aims to increase the consumption of fresh, local produce by increasing the purchasing power of Supplemental Nutrition Assistance Program (SNAP) recipients and promoting repeat visits. This program has not only increased consumption of fruits and vegetables among lower-income residents, but it has also been an economic success for local fresh produce vendors.¹⁷

Despite this considerable progress, this report demonstrates that there is still more work to be done in Detroit as well as at the state level to ensure that all residents have convenient access to stores selling fresh and affordable foods. The Food Trust, the American Heart Association and its partners are committed to building on these successes and working with state and local leaders to improve healthy food access for residents across the state.



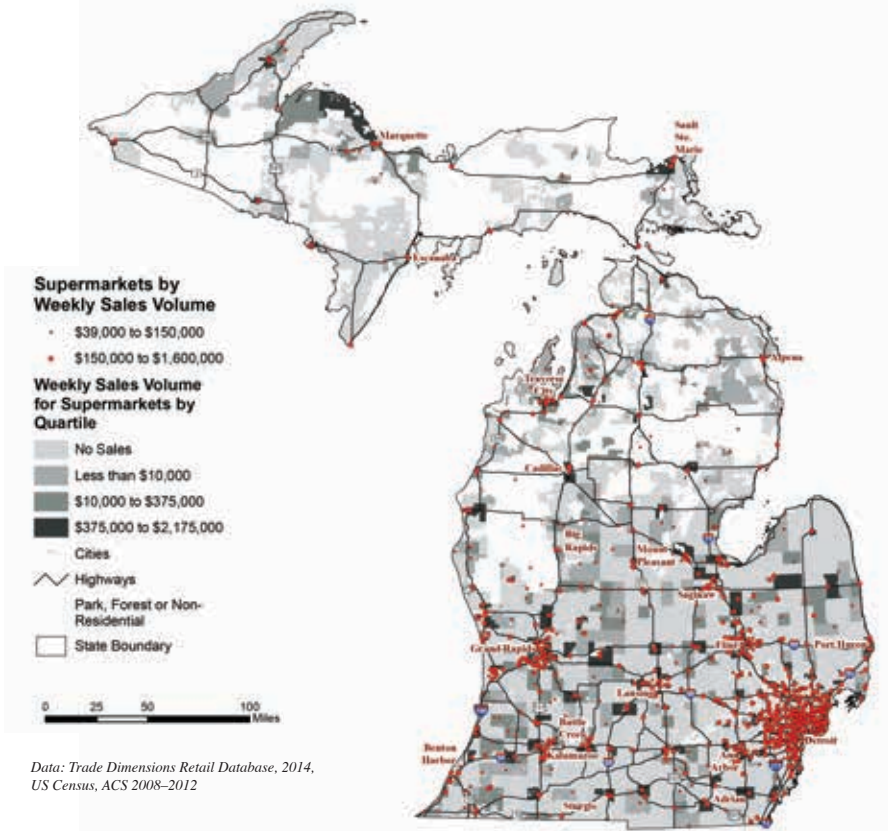
KEY FINDINGS

Access to nutritious food is not evenly distributed in Michigan. Many people have to travel excessive distances to buy food at a supermarket.

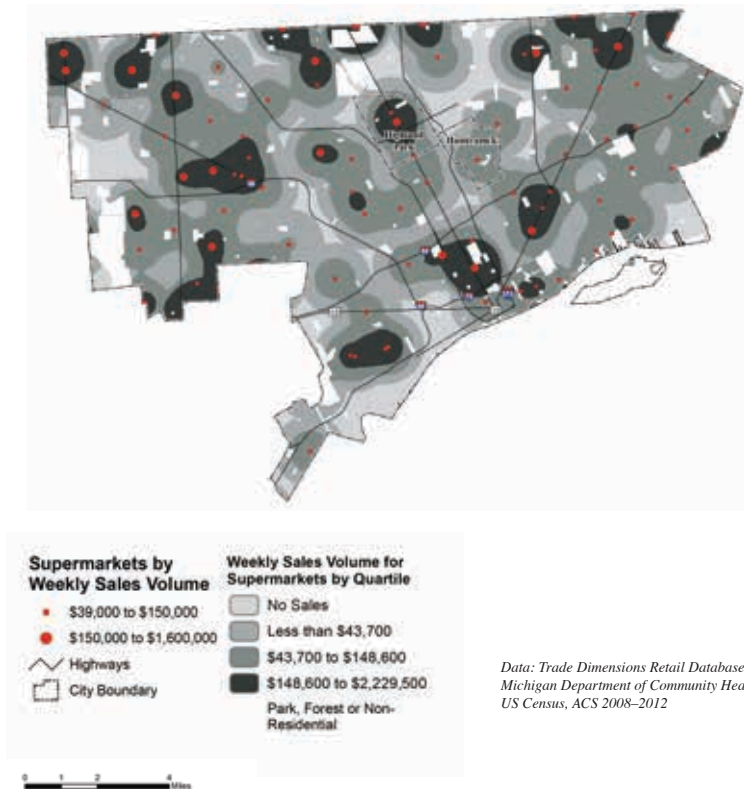
- The uneven distribution of healthy food retail outlets is a serious problem in Michigan. There are large areas of the state with few supermarkets, and many neighborhoods where none exist. This situation is reflected at the local level in Detroit as well as in rural communities throughout the state where there are substantial gaps in food availability.

MAP 1 A/B: *Weekly Sales Volume for Supermarkets* shows the location of 1,186 stores throughout Michigan, including 78 in Detroit, and the weekly sales volume at each store. The smaller red circles represent lower weekly sales volume; the larger red circles represent higher weekly sales volume. The gray shading shows how supermarket sales are distributed across each census tract. The darkest areas have the highest concentration of supermarket sales, whereas the light areas have the lowest sales, indicating that few or no supermarkets are located in these regions.

1A: Weekly Sales Volume for Supermarkets in Michigan



1B: Weekly Sales Volume for Supermarkets in Detroit



Map 1A shows that supermarkets in Michigan are unevenly distributed. Supermarkets are highly concentrated along major highways and in suburban areas, while urban centers, as well as rural communities in both the Upper and Lower Peninsulas, are relatively underserved. This suggests that many people are traveling considerable distances to buy food at supermarkets in those areas where supermarkets are more easily accessible.

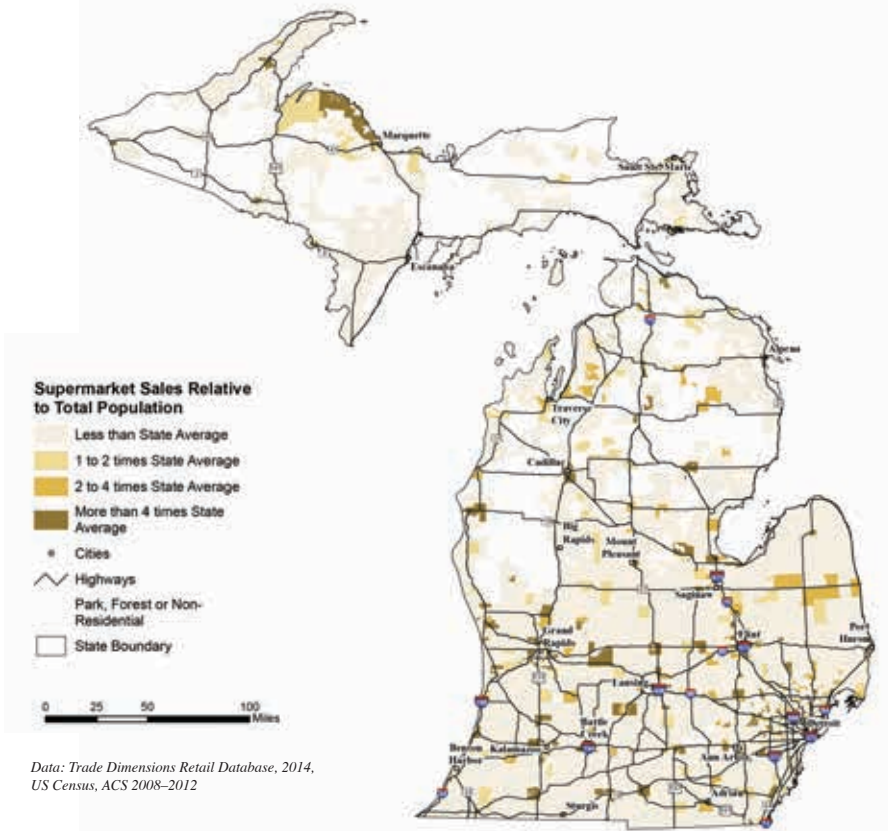
Map 1B features supermarkets in Detroit and the concentration of sales across the city. The highest concentration of supermarkets and supermarket sales

are found in neighborhoods in and around downtown, the University District and Sherwood Forest area; communities north and east of Brightmoor; and the northeastern section of the city. Neighborhoods with the fewest supermarkets include communities surrounding the cities of Highland Park and Hamtramck as well as Brightmoor and areas west of Brightmoor.

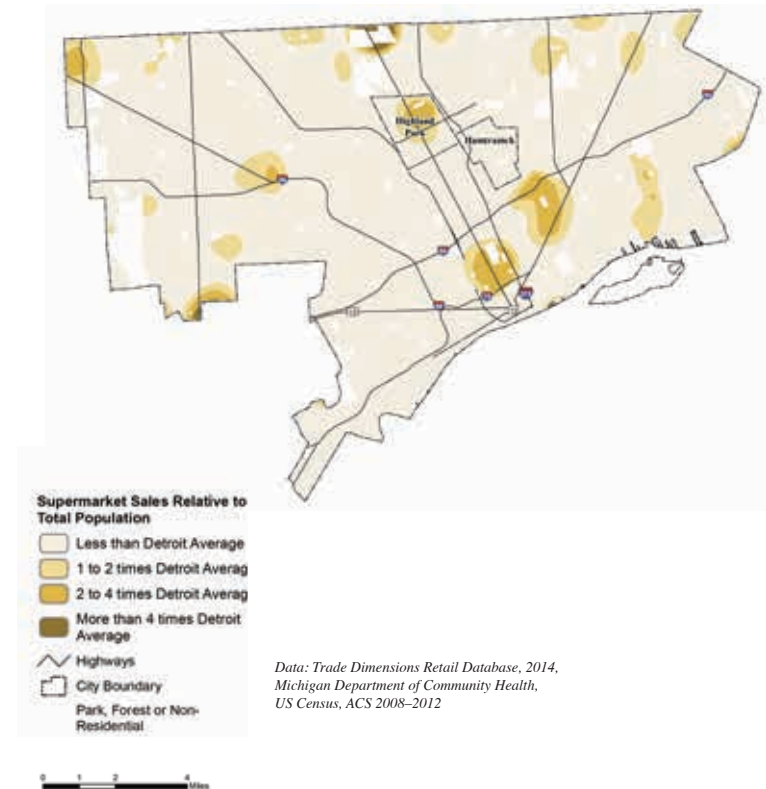
MAP 2 A/B: *Supermarket Sales and Total Population* shows that supermarket sales in a particular location do not seem to be associated with the population of that area. Communities with greater than average

supermarket sales relative to total population are shown in yellow and brown tones. In these communities, people are either spending more than average in supermarkets, as might be the case in higher-income communities, or more people are buying groceries in these communities than the number of people who live there, indicating that people are traveling from outside the area to shop there. Though Detroit is the most populous city in the state of Michigan, nearly the entire city has supermarket sales below the state average.

2A: *Supermarket Sales and Total Population in Michigan*



2B: *Supermarket Sales and Total Population in Detroit*



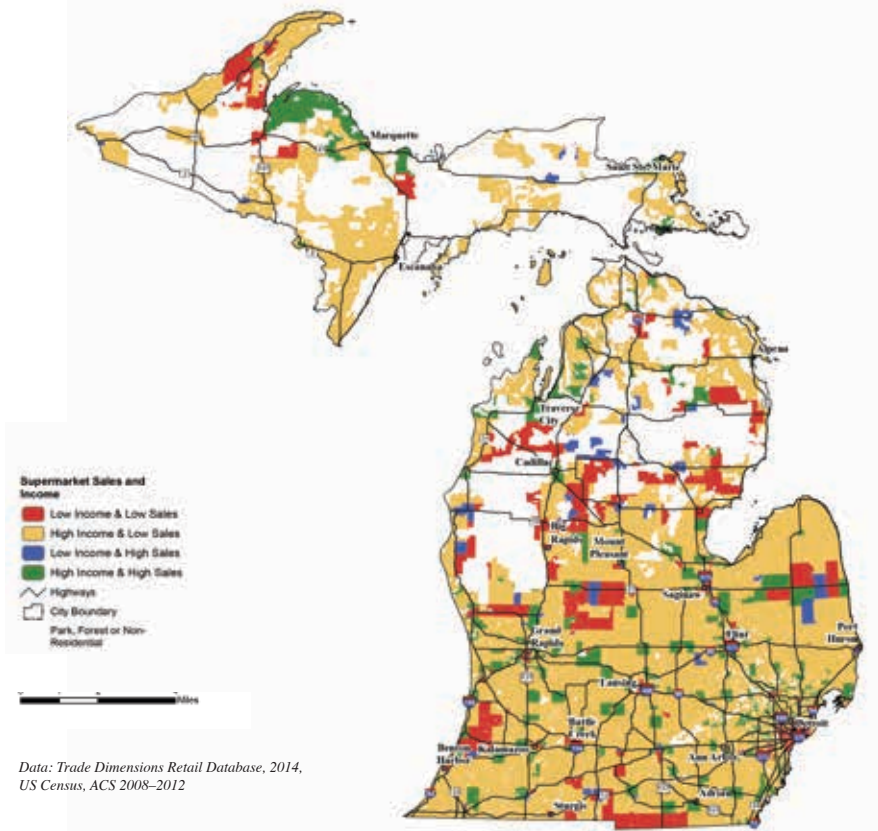
KEY FINDINGS

The uneven distribution of supermarkets in Michigan leaves a disproportionate number of residents without access to nutritious food.

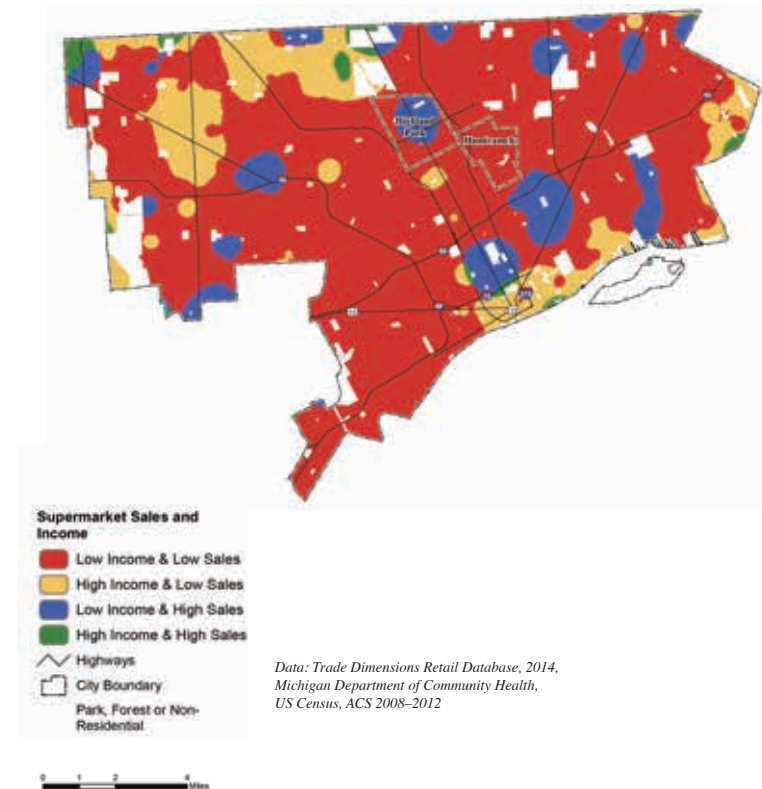
- This shortage of supermarkets particularly impacts lower-income residents with limited resources to maintain an adequate diet. This problem is impacting families across the state. More than 1.8 million Michigan residents, including approximately 300,000 children, live in lower-income communities underserved by supermarkets.

MAP 3 A/B: *Supermarket Sales and Income* shows the distributions of supermarket sales and income throughout the state and city. Higher-income areas with higher supermarket sales have the best access to food resources and are indicated by the green areas of the map. In blue are some lower-income areas with higher than average supermarket sales volumes. People in the areas shown in yellow have fewer supermarkets in their communities. However, since these communities are higher-income and often have high car ownership rates, residents are likely able to drive to stores or patronize small specialty food purveyors. The red areas represent lower-income communities that are not adequately served by supermarkets.

3A: Supermarket Sales and Income in Michigan



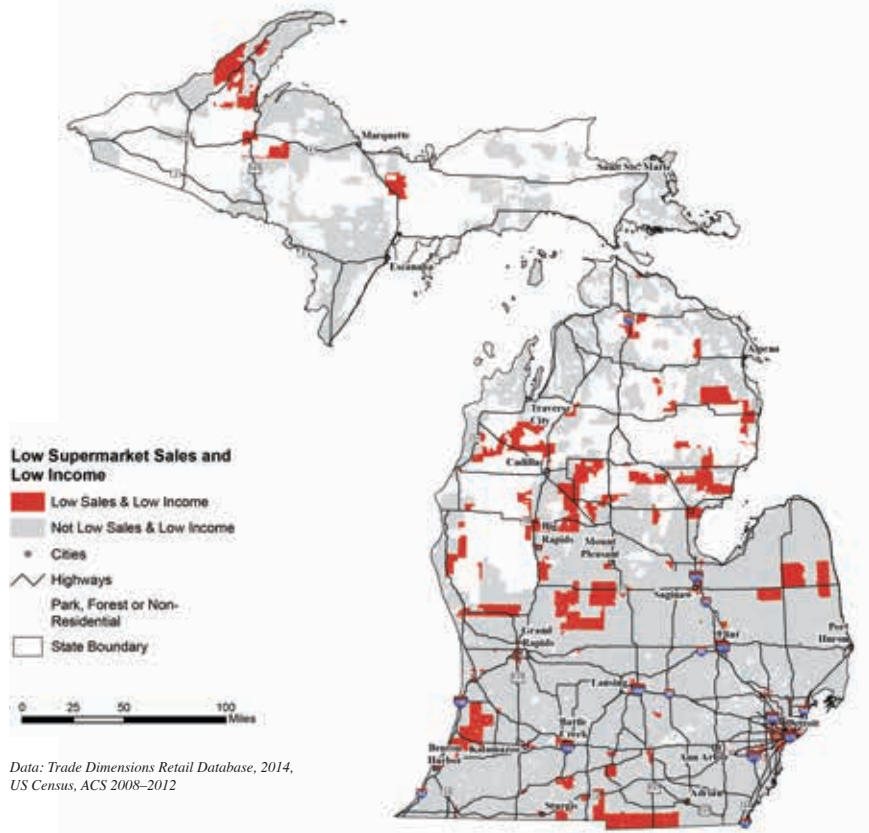
3B: Supermarket Sales and Income in Detroit



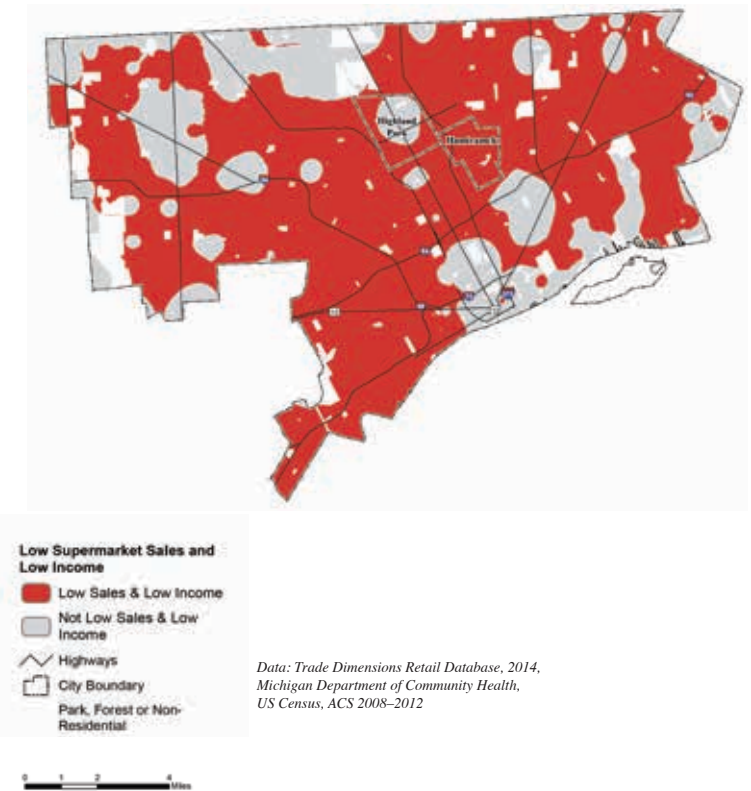
MAP 4 A/B: *Low Supermarket Sales and Low Income* further highlights areas with low supermarket sales because there are few or no supermarkets located there. Since income is also lower in these areas, families face more difficulty traveling to the areas where supermarkets are concentrated, especially when public transit is not accessible or convenient. Rural areas with limited access to healthy food retail are found throughout the state, in regions such as Hillsdale, Tuscola, Sanilac, Cold Water and Allegan. Underserved areas include tourist towns such as Traverse City and Cadillac, as well as the town of Hancock and Houghton, Baraga and Alger counties in the Upper Peninsula. In metropolitan areas, significant need exists in Flint, Grand Rapids and Detroit.

Lower-income neighborhoods with insufficient supermarket access can be found in urban centers and rural communities across Michigan.

4A: *Low Supermarket Sales and Low Income in Michigan*



4B: *Low Supermarket Sales and Low Income in Detroit*



KEY FINDINGS

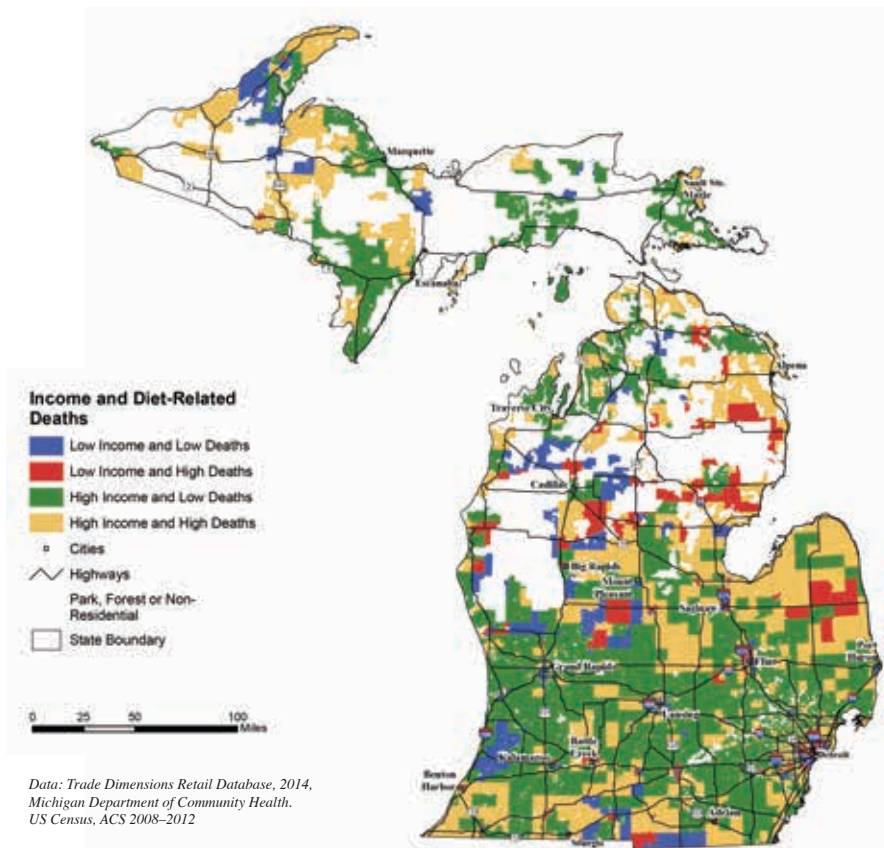
There is a connection between lack of supermarkets and diet-related disease.

- The Food Trust and PolicyLink, a national research and advocacy organization, conducted a comprehensive literature review which found that studies overwhelmingly indicate that people living in communities without a supermarket suffer from disproportionately high rates of obesity and other related health issues, while people living in communities with a supermarket are more likely to maintain a healthy weight.¹⁸

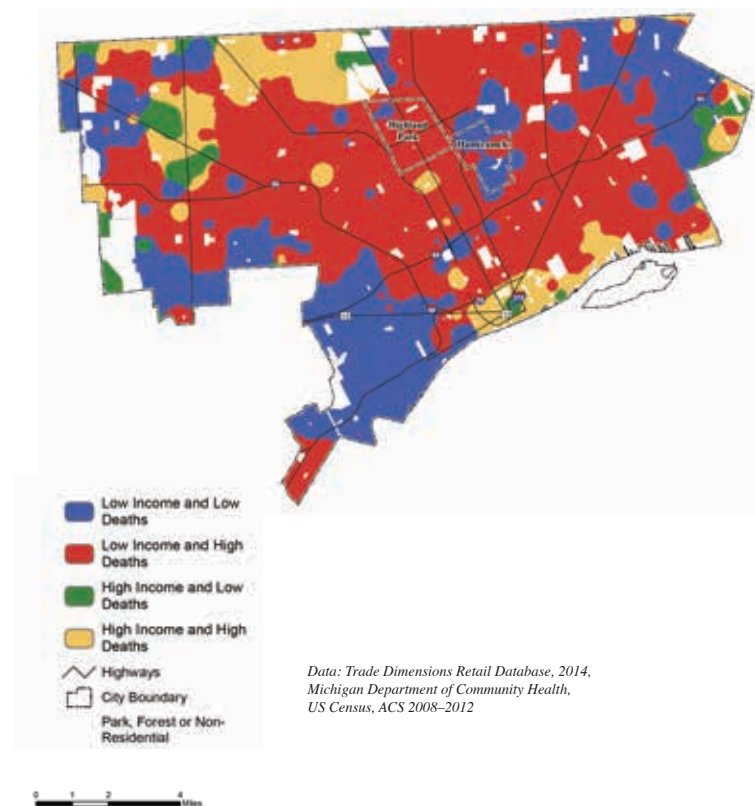
One study, for example, found lower body mass index and better health among residents who live near a supermarket.¹⁹ Another study documented that as distance to a supermarket increased in a metropolitan area, obesity rates increased and fruit and vegetable consumption decreased.²⁰

MAP 5A/B: *Income and Diet-Related Deaths* shows diet-related mortality data by income in Michigan and Detroit. The red areas indicate a higher than average rate of diet-related deaths occurring in lower-income areas. The yellow areas display higher rates of diet-related deaths occurring in higher-income areas. The blue and green areas have lower rates of diet-related deaths.

5A: *Income and Diet-Related Deaths in Michigan*



5B: *Income and Diet-Related Deaths in Detroit*



Diet-related diseases, such as hypertension, obesity and diabetes, create untold suffering and expense in families and communities. Heart disease and stroke account for more than one-third of deaths in Michigan, and overweight or obese adults are significantly more likely to suffer from these conditions.²¹ Diet-related deaths are associated with many factors, including the lack of access to a nutritionally adequate diet.

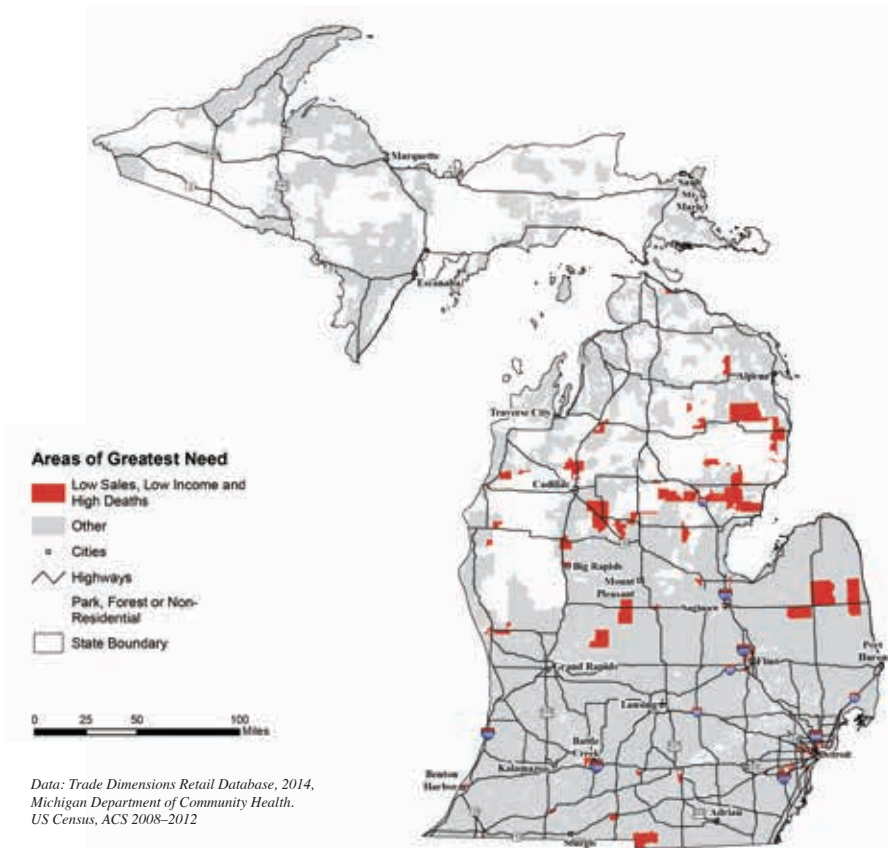
To provide affordable and nutritious food in these neighborhoods, and reduce rates of obesity and other diet-related diseases, Michigan should encourage new supermarket and other fresh food retail development in lower-income areas where there are few supermarkets. Increasing the availability of nutritious and affordable

food in neighborhoods with high rates of diet-related diseases does not guarantee a reduction in their incidence. However, leading public health experts, including the Centers for Disease Control and Prevention and the Institute of Medicine, agree that it is a critical component in improving health outcomes.

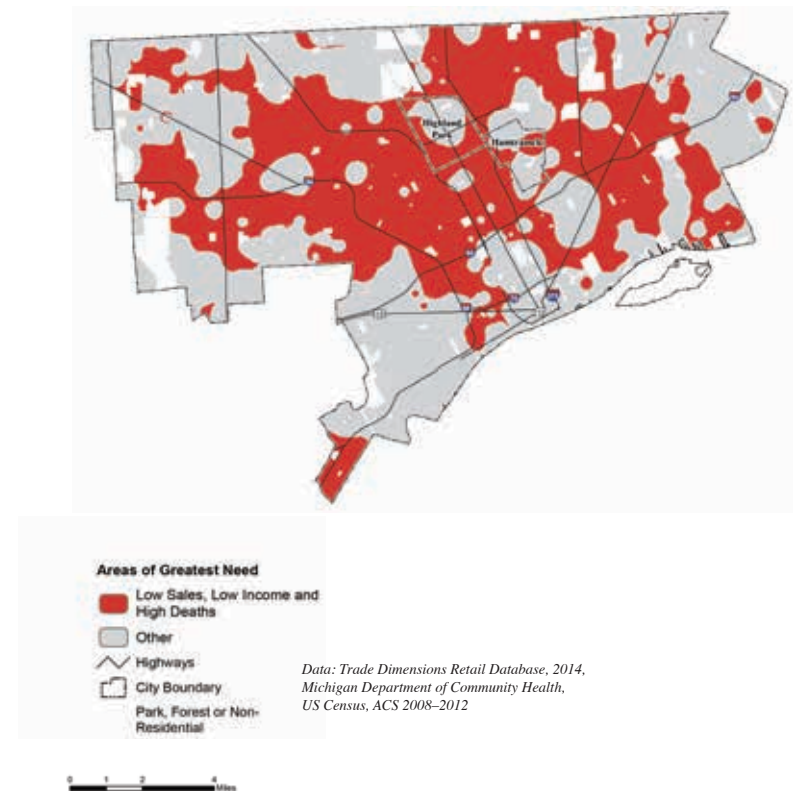
Leading public health experts agree that increasing access to supermarkets and other stores selling healthy, affordable foods in underserved communities is critical to residents' health outcomes.

MAP 6A/B: *Areas with Greatest Need* displays lower-income communities where there are low supermarket sales and a high number of deaths due to diet-related disease. These areas have the greatest need for more supermarkets and other healthy food retail outlets.

6A: *Areas with Greatest Need in Michigan*



6B: *Areas with Greatest Need in Detroit*



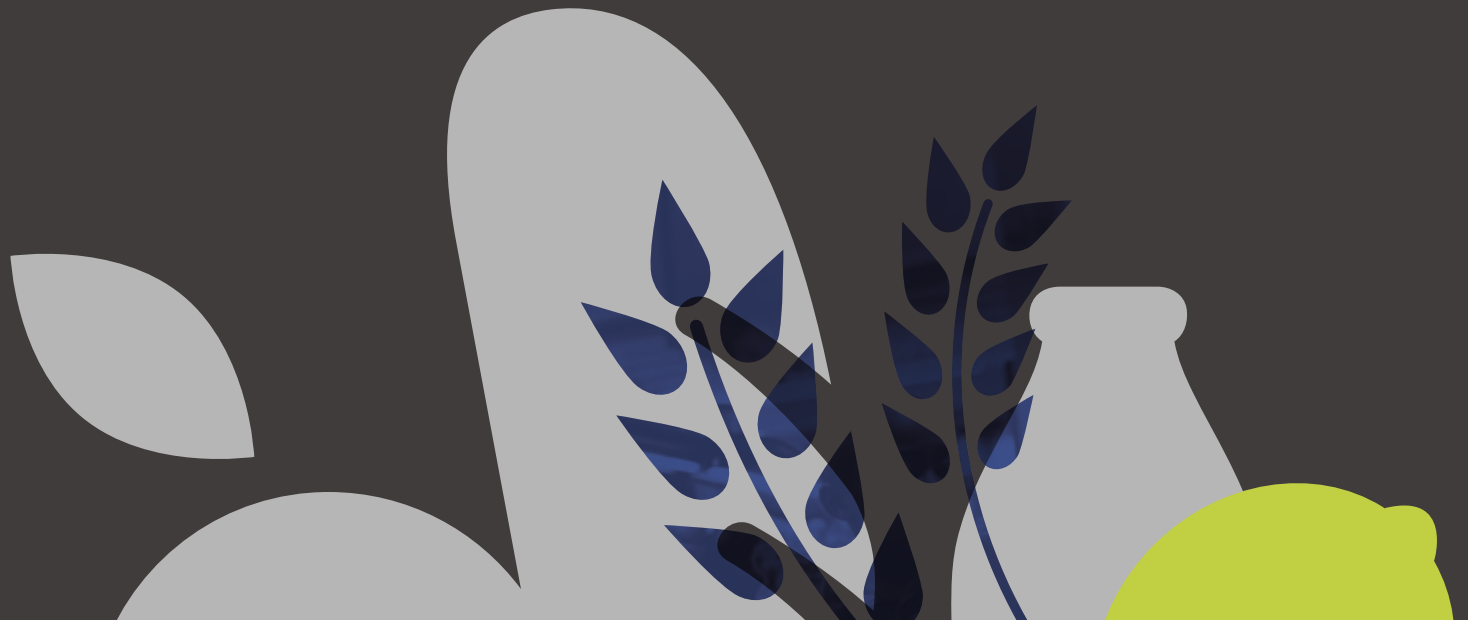
CONCLUSION AND RECOMMENDATIONS

Michigan must address the critical need for more healthy food retail in many communities.

Supermarket access is a key factor contributing to the health and economic development of neighborhoods. Through mapping, this study shows that many lower-income communities in Michigan have both poor supermarket access and a high incidence of diet-related deaths.

The increased incidence of obesity and other diet-related diseases in lower-income communities suggests that the public sector needs to invest in an initiative to stimulate supermarket development in these underserved areas to help combat these diseases. Such an investment would have positive economic impacts, as well, since supermarkets bring jobs to communities that need them the most and provide new market opportunities for Michigan farmers and producers. According to a 2012 study conducted by Trust for America's Health in partnership with the Robert Wood Johnson Foundation, if Michigan reduces its population's average body mass index by just 5%, the state would save nearly \$9 billion in health care costs by 2020 and over \$24 billion by 2030.²²

States across the country have invested in programs to attract healthy food retail to lower-income, underserved communities. For example, Pennsylvania created the Fresh Food Financing Initiative (FFFI), a public-private partnership that supported 88 projects, creating and preserving over 5,000 jobs and 1.6 million square feet of retail space.²³ Across the country, healthy food financing programs are improving food access and creating jobs in communities that need them most (see chart, p. 14).



We recommend that the state of Michigan invest in a statewide healthy food financing program.

The goals of the program should include:

- **Providing grants and loans** to supermarkets, grocery stores, cooperatives, corner stores, farmers' markets, food hubs and other healthy food businesses for the construction, expansion and renovation of projects in lower-income, underserved areas of urban, rural and suburban Michigan
- **Improving the health of families** and individuals living in those communities by increasing access to fresh foods in underserved communities
- **Creating or maintaining local jobs** in lower-income, underserved communities and spurring economic development and neighborhood revitalization by bringing supermarkets and other fresh food retailers back into Michigan communities, thereby attracting complementary businesses and increasing property values
- **Expanding market opportunities** for Michigan farmers and producers by supporting local food hubs and other food distribution networks dedicated to equity, community development and increasing healthy food access

Michigan is well-positioned to create and support a statewide healthy food financing program to encourage the development of supermarkets and other healthy food resources in underserved communities. There is already much momentum surrounding this issue in Michigan, and leaders in the business, government and civic sectors have all expressed the need for this type of program. Through public investment, we can improve the health of residents, create jobs and spark meaningful economic revitalization in underserved rural and urban communities across the state.

WHY A HEALTHY FOOD FINANCING PROGRAM?

Healthy food financing programs incentivize the development of supermarket and other healthy food businesses in underserved communities, increasing food access in communities that need it most.

This innovative model was first established in Pennsylvania with the state's Fresh Food Financing Initiative (FFFI) in 2004. FFFI took the form of a public-private partnership and encouraged grocery store development in underserved communities throughout the state. Seeded with \$30 million from the state's Department of Community and Economic Development, FFFI was designed to accommodate the diverse financing needs of large chain supermarkets, family-owned grocery stores, farmers' markets and other healthy food retailers, whether located in cities, small towns or rural communities. The program has had a tremendous impact in Pennsylvania, supporting 88 fresh food retail projects across the state, creating or retaining more than 5,000 jobs, and improving access to healthy foods for over 400,000 state residents.

Since the launch of FFFI, several other states and cities, including New York, New Jersey, Illinois, California, Colorado, New Orleans, Houston and Cincinnati, have all launched or are making preparations to launch their own versions of the Pennsylvania program. Similarly, the federal government introduced the national Healthy Food Financing Initiative, which has provided financial awards and New Markets Tax Credits to Community Development Financial Institutions, Community Development Corporations and banks investing in new or expanded healthy food retail in underserved communities as well as local food production and distribution networks throughout the country.

In addition to increasing families' access to healthy foods, new and improved grocery stores can help revitalize lower-income neighborhoods because they generate foot traffic and attract complementary services and stores, such as banks, pharmacies and restaurants. Studies have found that employees at urban supermarkets in distressed areas tend to live nearby, and the average supermarket hires 90 people or more directly from the areas where they operate.²⁴ By employing local residents, grocery stores create jobs for those who need them most and help establish a virtuous cycle that enables local residents to increase economic activity. At the same time, it takes between five and seven years before the initial investment costs of a typical new supermarket (\$8 million to \$25 million) are recovered, so start-up costs are a strong consideration for any new grocery project, particularly in a distressed community.²⁵

Investing in food hubs and other innovative local food distribution networks also creates jobs and expands market opportunities for small and midsize farmers and producers. A nationwide survey found that over 95 percent of food hubs are experiencing an increased demand for the products and services they provide. Momentum is growing around the creation of a statewide healthy food financing program in Michigan. Such an initiative would be a vital resource for improving healthy food access and sparking economic development across the state. More information is available at healthyfoodmi.heart.org.

Circle Food Store | *New Orleans, Louisiana*

When it originally opened in 1938, Circle Food Store was the first African-American-owned grocery store in New Orleans, and it became a community hub for the Treme neighborhood. In 2005, Hurricane Katrina severely damaged the store, forcing it to close and leaving a major void in the community. In 2014, owner Dwayne Boudreaux was finally able to reopen the store with support from various funding sources, including \$1 million from the New Orleans Fresh Food Retailer Initiative, the city's healthy food financing program. In addition to groceries, the new-and-improved 22,000-square-foot Circle Food Store has a pharmacy and a credit union, and has created 65 jobs, 95% of which are filled by local residents.

Bloss Holiday Market | *Blossburg, Pennsylvania*

When the owner of Bloss Holiday Market in Blossburg, Pennsylvania, decided to retire, the 1,400-resident rural community faced the loss of its only store in town and the only supplier of groceries and fresh produce for nearly eight miles. The Pennsylvania Fresh Food Financing Initiative provided Ryan and Melanie Shaut, a young entrepreneurial couple from the community, the financing they needed to purchase and renovate the store, thus preserving the only retailer within 11 miles to accept both food stamps and Salvation Army grocery vouchers for families in need. This project also aids food pantry patrons who receive vouchers that enable them to supplement the pre-packaged foods they get from the pantry with fresh produce at Bloss Holiday Market. In addition to providing nearby access to fresh, healthy foods in a region without a strong public transit system, this project has saved 30 quality jobs for local residents.

Buffalo Grown Mobile Market | *Buffalo, New York*

Massachusetts Avenue Project's (MAP) Buffalo Grown Mobile Market delivers organic, locally grown, affordable produce to Buffalo's lower-income, food insecure neighborhoods. Buffalo Grown Mobile Market travels regularly to drop-off sites where it sells fresh fruits and vegetables and bulk items, like rice and beans. MAP works with local community partners to identify drop-off sites that serve people most in need, such as health and senior centers. The group grows the majority of the produce it sells on its own urban farm and offers onsite nutrition education for market patrons. In 2010, MAP's Mobile Market vehicle became inoperable. Financing from the statewide New York Healthy Food & Healthy Communities Fund, a public-private partnership, allowed MAP to purchase and retrofit a new vehicle so that it can continue to bring healthy, local food to the residents of Buffalo's most underserved communities.

HEALTHY FOOD FINANCING PROGRAMS ACROSS THE COUNTRY

LOCATION	NAME OF PROGRAM	PROGRAM PARTNERS	FUNDING SOURCES	TYPES OF FINANCING
CA	California FreshWorks Fund www.cafreshworks.com	The California Endowment, Capital Impact Partners, Emerging Markets and others	The California Endowment and other private funding: \$264 million raised from a variety of private investors. Additionally, Capital Impact Partners has leveraged funding for CA projects since 2011 through the national Healthy Food Financing Initiative.	Loans: Up to \$8 million. Grants: Up to \$50,000.
CO	Colorado Fresh Food Financing Fund www.chfainfo.com/CO4F	The Colorado Health Foundation, Colorado Enterprise Fund and Progressive Urban Management Associates	Seeded with a \$7.1 million investment from the Colorado Health Foundation. Additionally, the Colorado Enterprise Fund has leveraged funding for CO projects since 2012 through the national Healthy Food Financing Initiative.	Loans: Up to \$1.5 million per project. Grants: May not exceed \$100,000 per project, except in extraordinary, high-impact cases.
IL	Illinois Fresh Food Fund www.iff.org/illinois-food	IL Department of Commerce and Economic Opportunity and IFF	Seeded with a \$10 million grant from the IL Department of Commerce and Economic Opportunity. The fund is designed to invest approximately \$30 million over the next three to four years.	Loans: Typical loans range from \$250,000 to \$1 million. Grants: Grants are only available to those who are also applying for a loan. The grant amount can be up to 10% of the loan amount, not to exceed \$100,000.
LA	New Orleans Fresh Food Retailer Initiative www.hope-ec.org/index.php/new-orleans-fresh-food-retailer-initiative	City of New Orleans, Hope Enterprise Corporation and The Food Trust	Federal and private funding. Seeded with \$7 million in Disaster Community Development Block Grant funds. Matched at least 1:1 by HOPE and other investment sources. Additionally, HOPE has leveraged funding for New Orleans projects since 2014 through the national Healthy Food Financing Initiative.	Loans: CDBG loans not to exceed \$1 million. Forgivable Loans: Up to \$500,000 or 20% of total financing needs.
NJ	New Jersey Food Access Initiative www.trfund.com/wp-content/uploads/2013/05/NJ_HealthyFoodRetailInitiativeBrochure_2013.pdf	NJ Economic Development Authority (NJEDA), The Reinvestment Fund (TRF) and the Robert Wood Johnson Foundation (RWJF)	To date, financial partners include: NJ Economic Development Authority (\$4 million), Living Cities (\$2 million credit) and the Robert Wood Johnson Foundation (\$10 million Program Related Investment). Additionally, TRF has leveraged funding for NJ projects since 2011 through the national Healthy Food Financing Initiative.	Loans: Range in size from \$200,000 to \$4.5 million or larger for New Markets Tax Credit transactions. Grants: Range in size from \$5,000 to \$125,000. Recoverable Grants: Early-stage financing with no-interest loans, typically repaid by construction financing.
NY	New York Healthy Food & Healthy Communities Fund www.liifund.org/products/community-capital/capital-for-healthy-food/new-york-healthy-food-healthy-communities-fund	NY Empire State Development Corporation, Low Income Investment Fund (LIIF), The Reinvestment Fund (TRF) and The Food Trust	Seeded with \$10 million from the state's Empire State Development Corporation. Matched with a \$20 million commitment from The Goldman Sachs Group, Inc. Additionally, LIIF has leveraged funding for NY projects since 2011 through the national Healthy Food Financing Initiative.	Loans: Range in size from \$250,000 to \$5 million or larger for New Markets Tax Credit transactions. Grants: Range in size from \$5,000 to \$500,000 for capital grants and \$5,000 to \$200,000 for predevelopment grants.
OH	Cincinnati Fresh Food Retail Financing Fund www.closingthehealthgap.org/fresh-food-fund	Center for Closing the Health Gap and Cincinnati Development Fund	Up to \$15 million over three years from the city. Funds appropriated by the city's Focus 52 allotted funds, sponsored by Cincinnati's Department of Trade and Development. Additionally, The Cincinnati Development Fund has leveraged funding for Cincinnati projects since 2012 through the national Healthy Food Financing Initiative.	Loans: Pending Grants: Pending
PA	Pennsylvania Fresh Food Financing Initiative www.trfund.com/pennsylvania-fresh-food-financing-initiative	PA Department of Community and Economic Development, The Food Trust, The Reinvestment Fund (TRF) and the Urban Affairs Coalition	Seeded with \$10 million in year one and an additional \$20 million over the next two years from the state's Department of Community and Economic Development. Matched with \$146 million in additional public and private investment. Additionally, TRF has leveraged funding for PA projects since 2011 through the national Healthy Food Financing Initiative.	Loans: Typical loans ranged in size from \$200,000 to \$3.5 million or larger for New Markets Tax Credit transactions. Grants: Up to \$250,000 per store and \$750,000 in total for one operator. Extraordinary grants of up to \$1 million were made available for projects with high potential for serving areas of extreme need.
Federal	Healthy Food Financing Initiative www.healthyfoodaccess.org/funding/healthy-food-financing-funds	US Departments of Treasury, Agriculture, and Health and Human Services	Since 2011, HFFI has distributed more than \$140 million to over 70 community development entities across the country.	Financing packages vary. HFFI dollars are given to Community Development Financial Institutions (CDFIs) and Community Development Corporations (CDCs) to provide one-time grants and loans to projects in their regions.

Endnotes

- ¹ United States Department of Agriculture: Farm Service Agency. Retrieved from: <http://www.fsa.usda.gov/FSA/stateoffapp?mystate=mi&area=home&subject=landing&topic=landing>
- ² Feeding America: West Michigan Food Bank (2014). Terra GR Encourages Patrons to Eat, Drink, and Feed the Hungry. Retrieved from: <http://www.feedingamericawestmichigan.org/tag/sustainability/>
- ³ Population in low-income, low-supermarket tracts. Derived from: Nielsen TDLinX Data (2014). American Community Survey 2008–2012, 2014 ESRI Data & Maps.
- ⁴ Bell J., Hagan E., Karpyn A., Mora G., Rubin V. (2013). Access to Healthy Food and Why It Matters: A Review of the Research. Oakland (CA): PolicyLink and The Food Trust.
- ⁵ Ibid.
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GIS Methodology

To demonstrate which neighborhoods lack supermarkets, a geographical representation of food access, income and diet-related disease was created by mapping the locations of supermarket sales, income and diet-related mortality data.

All tabular data was prepared in MS Excel and mapped in ArcGIS 10.2.2 by ESRI. The coordinate system and projection used during mapping and analysis were the North American Datum 1983 and Michigan State Plane Central. Analysis was at the US Census Bureau's tract level of geography using vector polygons from the 2014 ESRI Data & Maps shapefiles. Michigan statewide analysis used discrete tract polygons while citywide analysis used interpolated rasters and density grids from tract centroids and statewide rates.

Demographic data from the US Census Bureau website (<http://www.census.gov>) for the 2008–2012 American Community Survey was chosen due to the presence of income variables not available in the 2010 Decennial Census.

This analysis was performed for the state of Michigan at the level of Census tract. Both of the city maps for Detroit and Grand Rapids use the statewide data and are mapped relative to the State rates and odds ratios, not relative to the city's own rates and odds ratios.

SUPERMARKET SALES

Supermarkets in the 2014 Trade Dimensions retail database were included in the analysis of sales. For the purposes of this study, the definition of a supermarket is a store that had an SIC code of 541105 and was identified by Trade Dimensions as a "conventional, limited assortment or natural supermarket," a "superette" or a "supercenter" with over \$2 million in annual sales. There were 1,186 supermarkets in Michigan, with an aggregate weekly sales volume of \$348,264,000.

All supermarkets were plotted using the latitude and longitude coordinates for each record and then classified into two categories; between \$39,000 and \$150,000, and more than \$150,000 in weekly sales.

Aggregate weekly sales volume of all supermarkets was attributed to the Census tracts within which they occurred through a spatial join. For Michigan, values of total sales were used to classify the tracts by approximate quartiles into the four categories shown in *Map 1: Weekly Sales Volume for Supermarkets*. For the cities, weekly sales volume was further transformed from a series of points to a continuous raster grid representing the sales density per square mile using the Kernel Density function with a one mile radius in Spatial Analyst. This raster was then classified into quartiles shown in Map 1.

POPULATION

Population data estimates for the State of Michigan by tract were retrieved from the US Census Bureau's 2008–2012 American Community Survey (total of 9,897,264 people). Density of total

population was calculated from the Census tract centroid points using Kernel Density with a search radius of one mile, or 5,280 feet. Geographies with no population were removed from the analysis, as indicated on the maps.

SALES AND POPULATION DENSITY

For Michigan, the weekly sales volume was divided by the total population of each tract. The result was then divided by the statewide rate of \$35.19 (\$348,264,000/9,897,264) to create an odds ratio for weekly supermarket sales per person for Michigan.

For the cities, the density of weekly sales volume raster was divided by the density of total population raster. The result was then divided by \$35.19 to create an odds ratio raster.

An odds ratio of 1 is equivalent to the statewide rate. Anything below 1 is below the statewide rate. An odds ratio of 2 means the rate is twice the statewide rate. This is used for *Map 2: Supermarket Sales and Population Density*. A new binary field recorded whether each tract had a weekly sales odds ratio above or below 1.

INCOME

Michigan Median household income (\$48,471) was multiplied by number of households (3,818,931), and the result was divided by total population to create a per capita income per person (\$18,701). Local per capita income by tract was divided by this number giving an income odds ratio. For Michigan, a new binary field was created to store whether the tract had an income odds ratio above or below the statewide rate. For the cities, the odds ratio, assigned to the Census tract centroid, was used to interpolate a grid, which was then reclassified to yield two distinct values, those below and those above the statewide rate.

SALES AND INCOME

The Sales and Income odds ratio binary fields were combined, resulting in four distinct values which correspond to the four possible combinations of high and low odds ratios, used to classify *Map 3: Supermarket Sales and Income* and *Map 4: Low Supermarket Sales and Low Income*.

DIET-RELATED DEATHS

The Michigan Department of Community Health provided mortality data for a specified list of diet-related ICD-10 codes for the year 2011. A total of 37,197 diet-related deaths were summarized and mapped at the tract level for Michigan.

DIET-RELATED DEATHS AND POPULATION

The number of diet-related deaths attributed to each tract was divided by the total population of that tract. This result was divided by the statewide ratio of diet-related deaths to total population ($37,197/9,897,264 = 0.003758$, or 38 diet-related deaths per 10,000 people) to calculate the death odds ratio. For Michigan a new binary field was created to store whether the tract had a death odds ratio above or below the statewide rate. For the cities, the odds ratio, assigned to the Census tract centroid, was used to interpolate a grid, which was then reclassified to yield two distinct values, those below and those above the statewide odds rate.

DIET-RELATED DEATHS AND INCOME

The two binary fields of Deaths and Income odds ratios were combined through multiplication to calculate a new field and raster. This resulted in four distinct values which correspond to the four possible combinations of high and low deaths and income, used to classify *Map 5: Income and Diet-Related Deaths*.

DIET-RELATED DEATHS, SALES AND INCOME

To combine all three variables for Michigan, a new field was created and calculated by tract as the product of the deaths odds binary variable and the Low Supermarket Sales and Low Income variable. For the cities, the two reclassified rasters of 1) Deaths and 2) Low Supermarket Sales and Low Income were combined to create a new raster layer. These results were both reclassified to only retain one value, Low Supermarket Sales, Low Income and High Deaths, and mapped to produce *Map 6: Areas with Greatest Need*.

Ensuring That Everyone Has Access To Affordable, Nutritious Food

The Food Trust, a nationally recognized nonprofit founded in Philadelphia in 1992, strives to make healthy food available to all. Research has shown that lack of access to healthy food has a profound impact on food choices and, therefore, a profound impact on health.

For over 20 years, The Food Trust has worked with neighborhoods, schools, grocers, farmers and policymakers to develop a comprehensive approach to improving the health of America's children. The Food Trust's innovative initiatives integrate nutrition education with increased availability of affordable, healthy foods.

This approach has been shown to reduce the incidence of childhood overweight; a study in the journal *Pediatrics* found that the agency's School Nutrition Policy Initiative resulted in a 50 percent reduction in the incidence of overweight among Philadelphia school children.

The Food Trust is recognized as a regional and national leader in the prevention of childhood obesity and other diet-related diseases for this and other notable initiatives to increase food access in underserved neighborhoods, including the Healthy Corner Store Initiative and the Pennsylvania Fresh Food Financing Initiative, a public-private partnership which has approved funding for nearly 90 fresh-food retail projects across Pennsylvania.

The Centers for Disease Control and Prevention honored the Fresh Food Financing Initiative in its Showcase of Innovative Policy and Environmental Strategies for Obesity Prevention and Control, and the program was named one of the Top 15 Innovations in American Government by Harvard University. For more information or to order additional copies of this report, visit thefoodtrust.org or contact The Food Trust.

“The Food Trust is transforming the food landscape one community at a time by helping families make healthy choices and providing access to the affordable and nutritious food we all deserve.”

▪ ROBERT WOOD JOHNSON
FOUNDATION



The Food Trust

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