



FOOD *for* EVERY CHILD

THE NEED FOR HEALTHY FOOD RETAIL
IN THE GREATER DALLAS AREA

SPECIAL REPORT

ACKNOWLEDGMENTS

This report was prepared by Sara Albert, Assistant Director for Food Policy at CHILDREN AT RISK in Dallas, Texas, and Miriam Manon and Risa Waldoks of The Food Trust in Philadelphia, Pennsylvania. It was published in February 2015. This report was made possible by grants from Voices for Healthy Kids (a joint initiative of the Robert Wood Johnson Foundation and American Heart Association) and the Michael and Susan Dell Foundation. Photographs by Ryan Donnell.



DALLAS must address the significant need for fresh food resources in many of its neighborhoods. Several factors have led supermarkets to disinvest from lower-income communities, contributing to a public health crisis. CHILDREN AT RISK, a local research and advocacy group, and The Food Trust, a nationally recognized nonprofit, issued *Food for Every Child: The Need for Healthy Food Retail in the Greater Dallas Area* 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 encouraging the development and expansion of healthy food retail outlets in underserved communities throughout Dallas.

Despite its affluence and its reputation as one of the most dynamic and fastest-growing metropolitan areas in the country, Dallas County has fewer supermarkets per capita than most large U.S. cities. Thirty-six percent of Dallas County ZIP codes contain areas of limited access to affordable and nutritious food.¹ Nearly 700,000 Dallas County residents, including over 245,000 children, live in lower-income communities with limited supermarket access.² In addition to having too few supermarkets, existing supermarkets are unevenly distributed across the city, and lower-income communities are categorically underserved. In Dallas County, the demographic and economic disparities in ZIP codes with low food access are considerable. Nearly twice the percentage of African-American and Latino residents and nearly twice the number of residents who live below the poverty line live in areas that lack access to healthy food, as compared to white, higher-income residents.³

Without easy access to supermarkets, residents of these areas frequently turn to convenience stores, corner stores or other small food retailers for their food purchases. These stores often do not offer fresh vegetables and fruit, whole grains, or healthy dairy, meats or fish. Their inventory typically consists of highly processed foods of high caloric and low nutritional quality. Convenience stores are also frequent destinations for children, many of whom stop daily on the way to and from school for snacks.

The lack of access to affordable and nutritious food has a negative impact on the health of children and families in Dallas. Studies show that residents of communities without a local grocery store suffer from disproportionately high rates of obesity, diabetes and other diet-related health problems. In contrast, when people live in a community with access to a full range of fresh foods, they tend to eat more servings of fruits and vegetables and are more likely to maintain a healthy weight.⁴ Leading public health experts, including the Institute of Medicine and the Centers for Disease Control and Prevention, recommend investing in supermarkets and corner stores that sell high-quality, healthy and affordable foods in underserved communities as part of a comprehensive strategy to combat obesity.⁵ 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. But if barriers to fresh food access can be removed, people in these communities can more easily maintain an adequate diet.

Nearly 700,000 Dallas County residents live in lower-income communities with limited supermarket access.

Through mapping, this study concludes that many neighborhoods in metropolitan Dallas with poor access to fresh foods also have a high incidence of death from diet-related diseases. 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 Texas Comptroller's warning that, left unchecked, obesity could cost Texas employers \$32.5 billion annually by 2030.⁶

We call upon city and county governments to take the lead in developing a public-private response to this problem. This report recommends strategic investments with public funds to improve healthy food access while creating jobs and strengthening the economic well-being of surrounding areas. Strategies that have proven to be successful elsewhere in the country have included:

- Creating a Healthy Food Financing Initiative that provides grants, loans and tax credits for new supermarket development. Supermarkets increase access to nutritious food, anchor economic development and bring jobs into communities that need them most.
- Supporting Healthy Corner Store programs by partnering with existing corner and convenience store owners to introduce and promote a healthier, more nutritious range of products. Healthy Corner Store programs increase healthy food options, revitalize commercial corridors and support local businesses in underserved neighborhoods.

INTRODUCTION

Greater Dallas is one of the nation's fastest-growing metropolitan areas, and yet it has fewer supermarkets per capita than most major cities.

This shortage of supermarkets means that residents, particularly those in lower-income neighborhoods, often rely on corner and convenience stores for their food purchases where healthy, affordable food options are limited.

A growing body of research demonstrates that access to healthy food can have 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 fresh food retail markets in lower-income neighborhoods would reduce the rate of obesity in the United States. They also suggest that state and local governments should create incentive programs to attract supermarkets and support healthy changes in existing corner and convenience stores in underserved neighborhoods.⁷ Such an investment would have a positive economic impact, as well. Supermarkets create jobs and spark complementary economic development; and bolstering existing stores revitalizes commercial corridors and supports local business owners.

According to a report published by CHILDREN AT RISK, 49 percent of Dallas County children are overweight or obese.⁸ Lower-income residents are likely to suffer from obesity and other diet-related health problems at rates significantly higher than those of the population as a whole.⁹ These same families are also likely to have few, if any, places in their communities in which to shop for reasonably priced, nutritious foods.

49 percent of Dallas County children are either overweight or obese.

The region's supermarket deficit could be eased and diet-related health problems decreased by embracing an initiative to increase access to fresh food resources in lower-income communities, resulting in the improved health and nutrition of children.

CHILDREN AT RISK and The Food Trust wrote *Food for Every Child: The Need for Healthy Food Retail in the Greater Dallas Area* 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 that will result in the improvement of the food retail environment in lower-income neighborhoods through the development of new supermarkets and the launching of a Healthy Corner Store program for convenience stores, corner stores and small neighborhood markets.

To address the critical need for improved healthy food retail in many communities, this study outlines the extent and implications of the supermarket shortage by identifying the gaps in fresh food availability and the relationship among healthy food 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 excellent work undertaken over the past several years by a variety of leaders from city and state government and the private and civic sectors, and by the state level Healthy Food Advisory Committee, established by the executive commissioner of the Health and Human Services Commission and the commissioner of the Department of Agriculture, as put forth by the Texas Legislature during the 81st legislative session. Groundwork has already been laid for Healthy Corner Store work in Dallas, as well, including research by the Charting the Course coalition and others. CHILDREN AT RISK and The Food Trust are committed to building on these efforts and working with these leaders to improve access to healthy food for residents of Greater Dallas.

What is a Healthy Corner Store Program?

Healthy Corner Store programs support existing small-store owners who want to increase the healthy food inventory in their stores and help their customers make healthier choices. Successful programs across the country use a multifaceted, phased approach to incrementally improve food offerings. These programs increase healthier food choices, create healthier businesses and encourage healthier communities.¹⁰ Strategies include:

- Training and technical assistance to store owners to provide the skills necessary to make healthy changes profitable, such as produce handling, healthy food promotion and effective display techniques.
- Marketing materials including shelf banners, door decals and recipe cards designed to guide customers in making healthier decisions and increase awareness of healthy foods in corner stores.
- Free or reduced-cost equipment including shelving, refrigeration and signage to increase store capacity to sell and market healthy products and support healthy inventory changes.
- In-store and off-site community nutrition education, health screenings and cooking lessons highlighting healthy products available in local stores.
- Education in schools near targeted stores to reinforce healthy messages.
- Connections between convenience and corner store owners and community partners, local farmers and fresh food suppliers to create and sustain a network of healthy stores.

KEY FINDINGS

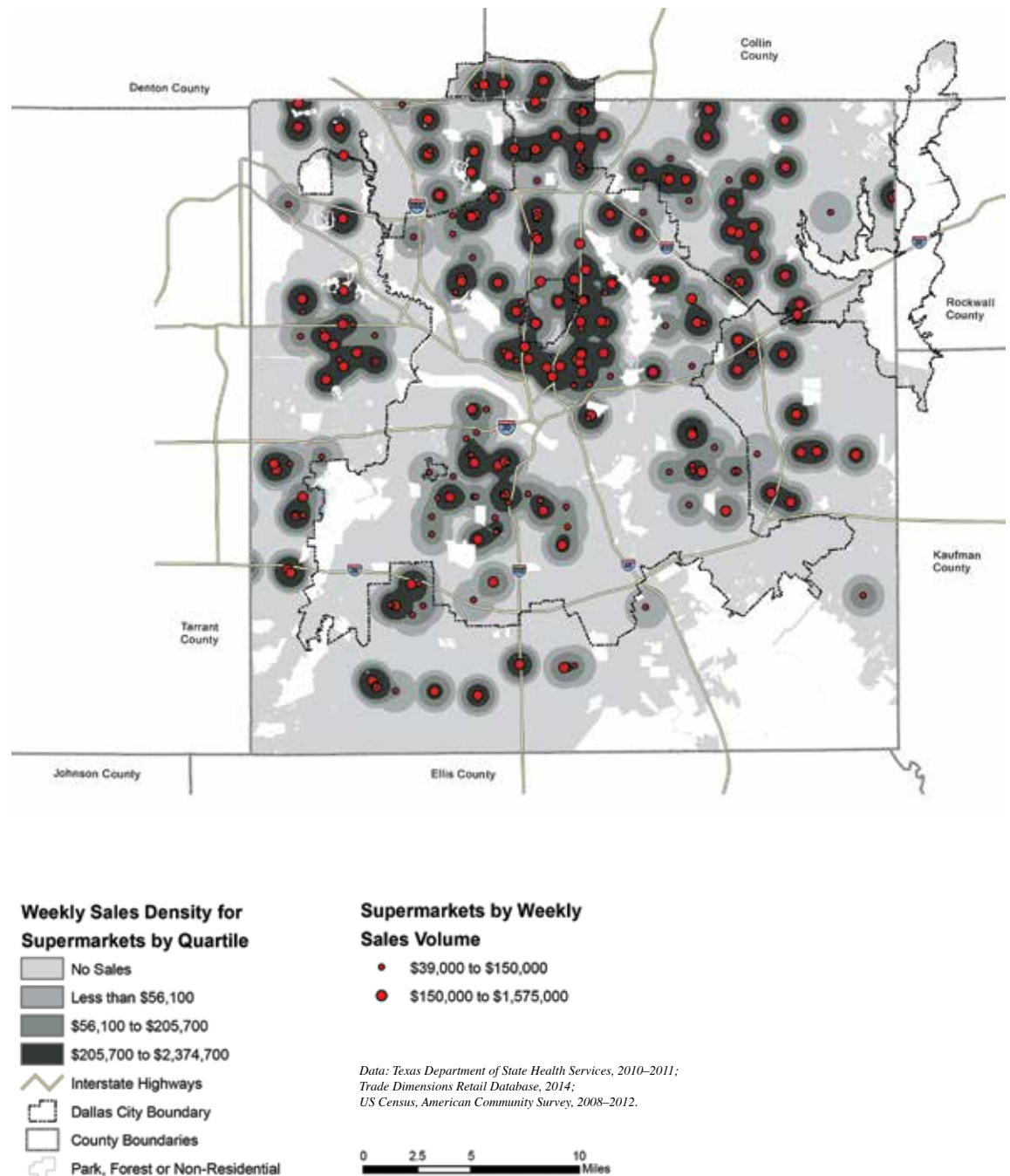
Access to nutritious food is inequitably distributed in the Dallas area. Many people have to travel excessive distances to buy food at a supermarket.

- The uneven distribution of supermarkets and healthy food resources is a serious problem in Greater Dallas. There are large areas of the city and county with few supermarkets and many neighborhoods where none exist. In these communities, the only convenient source for groceries is often a small corner store stocking highly processed snacks.

MAP 1: *Weekly Sales Volume for Supermarkets* shows the location of 226 stores in Dallas County 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 ZIP code. 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 there.

Map 1 shows that supermarkets in Dallas County are unevenly distributed. Many people must travel considerable distances to buy food from supermarkets in the few neighborhoods where supermarkets are easily accessible. Supermarkets are especially sparse in parts of West Dallas and the southeastern sector of the area, south of I-30.

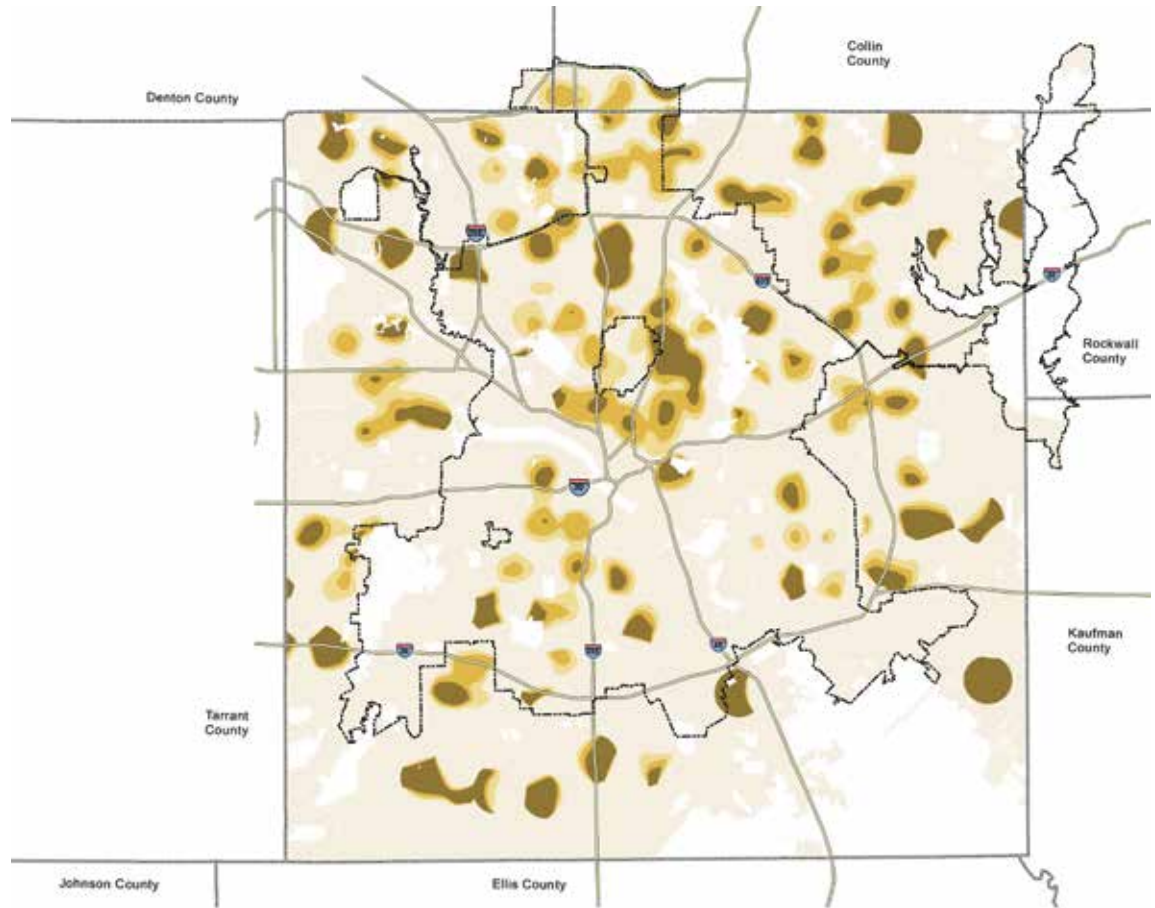
1: *Weekly Sales Volume for Supermarkets*



MAP 2: Supermarket Sales and Total Population shows that the amount of supermarket sales in a particular location does 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.

In Dallas, many people must travel considerable distances to buy food from supermarkets in the neighborhoods where they are easily accessible.

2: Supermarket Sales and Total Population



*Data: Texas Department of State Health Services, 2010–2011;
Trade Dimensions Retail Database, 2014;
US Census, American Community Survey, 2008–2012.*



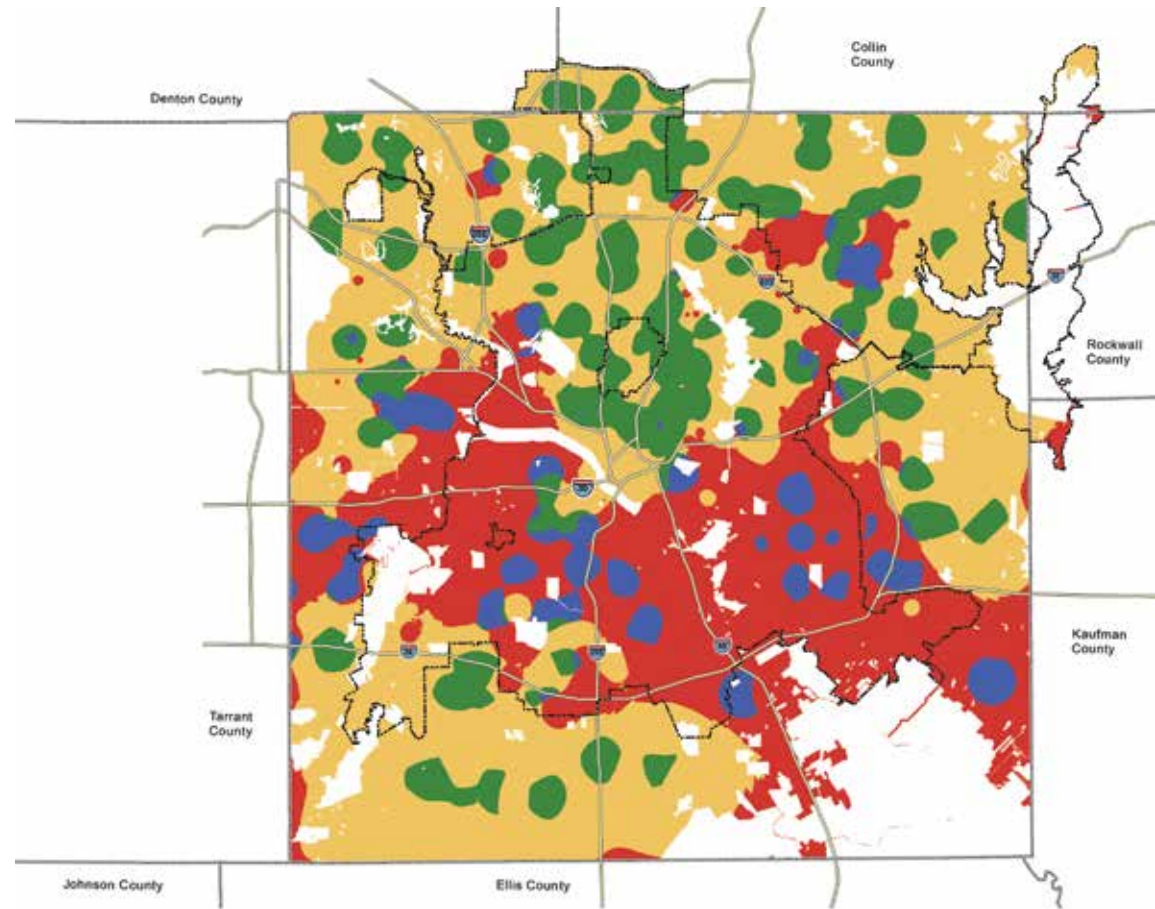
KEY FINDINGS

The uneven distribution of supermarkets in Dallas County leaves a disproportionate number of lower-income people without convenient access to nutritious food.

- Residents of these underserved areas rely on convenience stores and corner stores for their food purchases where fresh food and other healthy options are not readily available. Nearly 700,000 Dallas County residents, including over 245,000 children, live in lower-income communities with limited supermarket access.

MAP 3: *Supermarket Sales and Income* shows the distribution of supermarket sales and the distribution of income throughout the 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 some lower-income areas, there are communities with higher than average supermarket sales volumes, as highlighted in blue. People in the areas shown in yellow have fewer supermarkets at which to shop in their community. However, since these communities are higher-income, residents often have high car ownership rates and are likely able to afford driving the longer distances to shop. The red areas represent lower-income communities not adequately served by supermarkets.

3: Supermarket Sales and Income



Supermarket Sales and Income

- Low Income & Low Sales
- High Income & Low Sales
- Low Income & High Sales
- High Income & High Sales

- Interstate Highways
- Dallas City Boundary
- County Boundaries
- Park, Forest or Non-Residential

Data: Texas Department of State Health Services, 2010-2011;
Trade Dimensions Retail Database, 2014;
US Census, American Community Survey, 2008-2012.

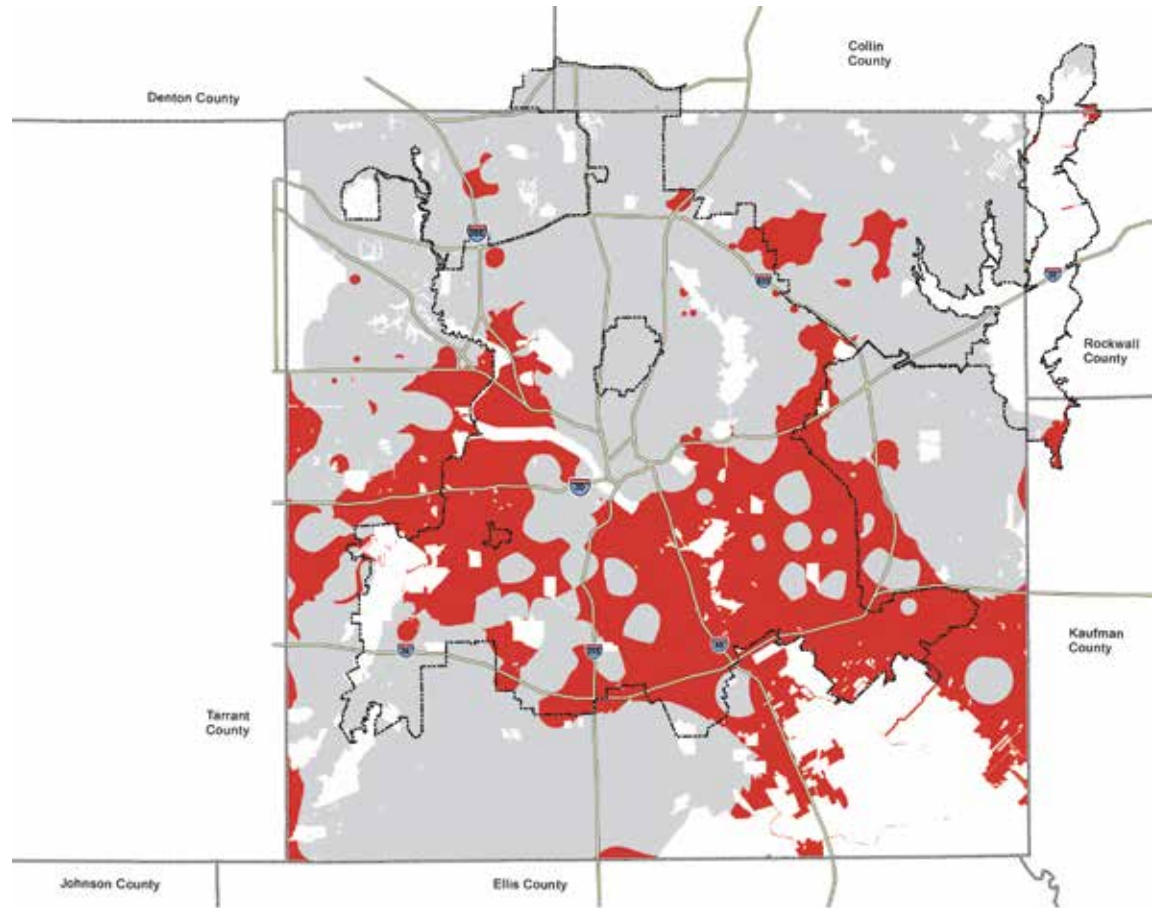
0 2.5 5 10 Miles

MAP 4: 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. In Dallas County, over 19 percent of the population lives below the poverty line and is disproportionately affected by the lack of supermarkets.

Lower-income areas with insufficient access to supermarkets in Dallas include the Fair Park/South Dallas neighborhood, sections of West Dallas and the southern sector of the city, south of the Trinity River.

In Dallas, these lower-income areas with insufficient access to supermarkets are heavily concentrated in the Fair Park/South Dallas neighborhood, sections of West Dallas and in the southern sector of the city, south of the Trinity River.

4: Low Supermarket Sales and Low Income



Low Supermarket Sales & Low Income

- Low Income & Low Sales
- Not Low Income & Low Sales
- Interstate Highways
- Dallas City Boundary
- County Boundaries
- Park, Forest or Non-Residential

*Data: Texas Department of State Health Services, 2010–2011;
Trade Dimensions Retail Database, 2014;
US Census, American Community Survey, 2008–2012.*



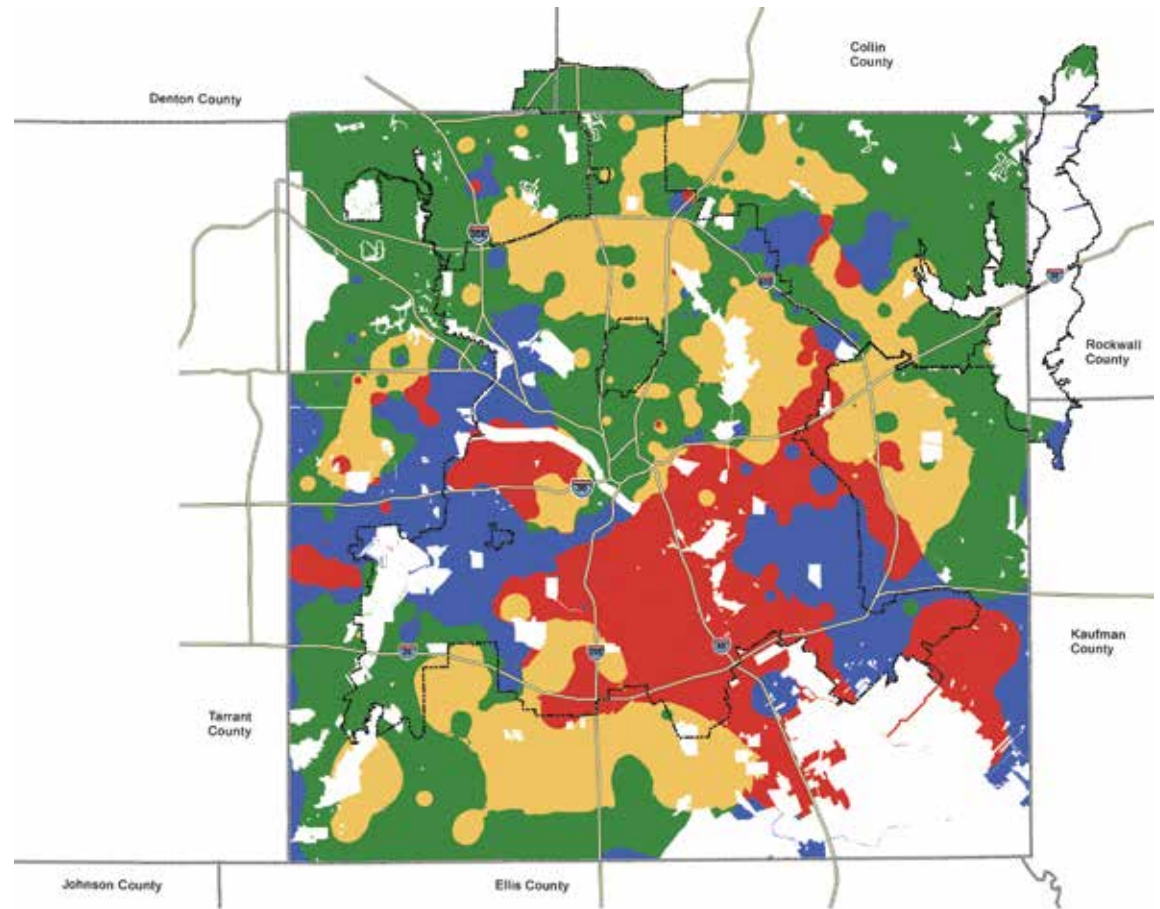
KEY FINDINGS

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

- 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 diet-related health issues, while people living in communities with a supermarket are more likely to maintain a healthy weight.¹¹ One study found lower body mass index and better health among residents who live near a supermarket.¹² Another study documented that as distance to a supermarket increased in a metropolitan area, obesity rates increased and fruit and vegetable consumption decreased.¹³

MAP 5: Income and Diet-Related Deaths shows diet-related mortality data by income. 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. Diet-related diseases, such as hypertension, obesity and diabetes, cause suffering and expense for families and communities. Heart disease is responsible for 12% of deaths overall in Dallas County, with significantly higher rates in areas that have low access to supermarkets.¹⁴

5: Income and Diet-Related Deaths



Income and Deaths

- Low Income & Low Deaths
- Low Income & High Deaths
- High Income & Low Deaths
- High Income & High Deaths
- Interstate Highways
- Dallas City Boundary
- County Boundaries
- Park, Forest or Non-Residential

Data: Texas Department of State Health Services, 2010–2011;
Trade Dimensions Retail Database, 2014;
US Census, American Community Survey, 2008–2012.

0 2.5 5 10 Miles

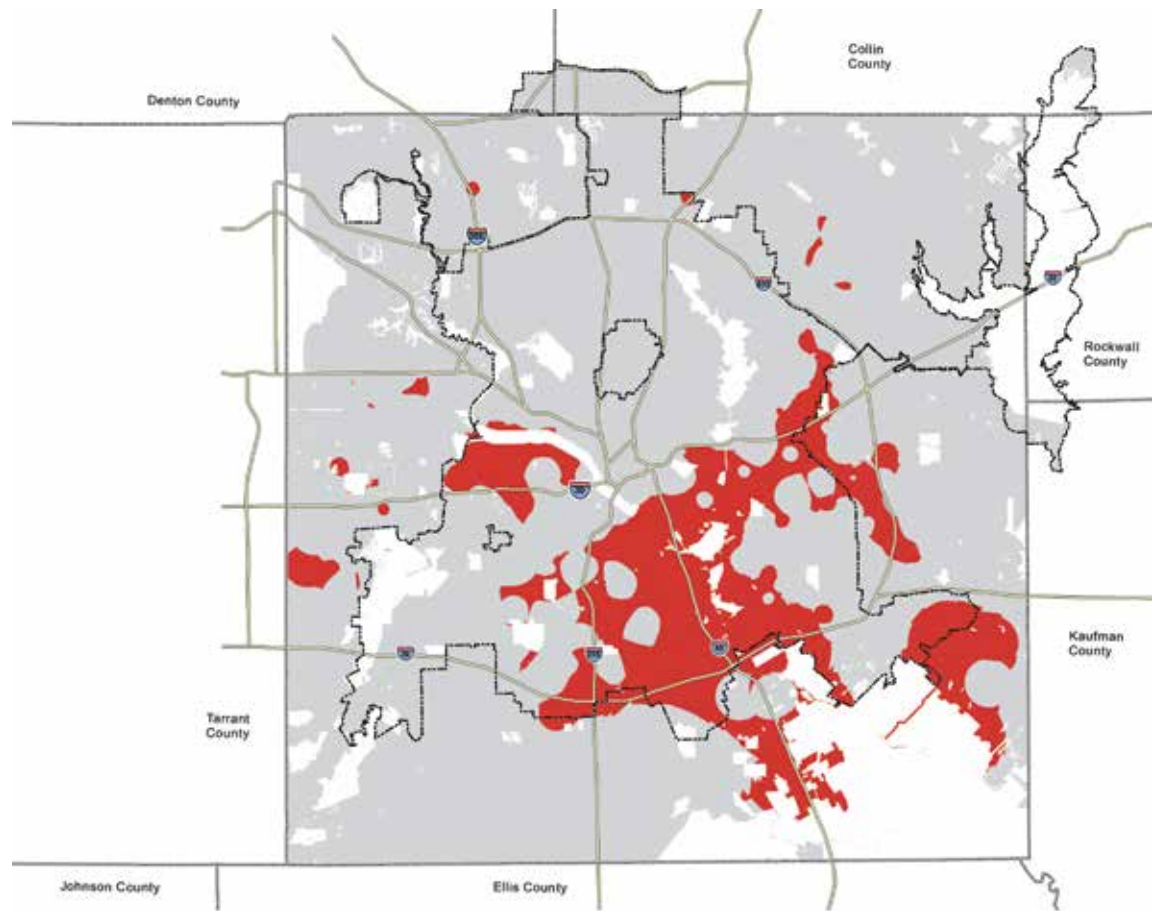
MAP 6: *Areas with Greatest Need* displays lower-income communities where there are low supermarket sales and a high number of deaths due to diet-related diseases. These areas have the greatest need for more supermarkets and other fresh food retail outlets.

To provide affordable and nutritious food in these neighborhoods, local government in the Greater Dallas area should encourage new fresh food retail development and support Healthy Corner Store programs in lower-income areas where there are high rates of diet-related diseases and few supermarkets.

Leading public health experts agree that the availability of nutritious and affordable food is a key factor in the development of a healthy community.

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 of the fight against obesity.¹⁵

6: *Areas with Greatest Need*



Areas with Greatest Need

- Low Sales, Low Income, High Deaths
- Other
- Interstate Highways
- Dallas City Boundary
- County Boundaries
- Park, Forest or Non-Residential

*Data: Texas Department of State Health Services, 2010–2011;
Trade Dimensions Retail Database, 2014;
US Census, American Community Survey, 2008–2012.*



CONCLUSION AND RECOMMENDATIONS

The lack of access to healthy food is a problem in many neighborhoods in the Dallas area, especially in lower-income communities where the incidence of obesity is alarmingly high.

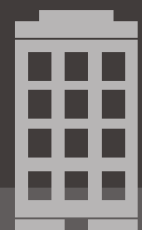
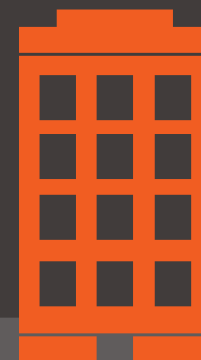
Without supermarkets in many communities, residents must shop at convenience stores and corner stores with higher prices and lower-quality food. Diets that rely on food from convenience stores are often higher in sugar and fat, contributing to the incidence of diet-related diseases.

The consequences are stark for people of lower incomes. People who live in areas without access to supermarkets suffer from diet-related deaths at a rate higher than that experienced by the population as a whole. Based on additional studies conducted by The Food Trust and others, access to fresh, affordable and nutritious food plays a role in determining what people eat.¹⁶ People who can only access poor food choices eat poorly.

Through mapping, this study shows that many lower-income neighborhoods in the Dallas area have both poor supermarket access and a high incidence of diet-related deaths. This study demonstrates that this issue adversely impacts lower-income neighborhoods and, in turn, costs Dallas billions of dollars.

Dallas must address the critical need for improved healthy food retail in its underserved communities. Solutions that have proven successful in cities across the country include the creation of a Healthy Food Financing Initiative and a Healthy Corner Store program.

Such investments would not only help combat the increased incidence of diet-related diseases in lower-income areas, but would also have a positive economic impact. Supermarket development brings jobs to communities that need them the most. Healthy Corner Store programs support local economic activity, generating tax revenue and sparking other healthy-living changes throughout the neighborhood.



Philadelphia's Healthy Corner Store Initiative

Corner stores—often thought of as a source of unhealthy products—can be key partners in the effort to improve access to healthy, affordable foods. In Philadelphia, 660 corner stores have introduced more than 25,000 healthier products to store shelves, making it easier for families in lower-income communities to maintain a healthy diet.

The Food Trust launched the Healthy Corner Store Initiative as a pilot project in 2004. The initiative has grown dramatically in partnership with the Philadelphia Department of Public Health's *Get Healthy Philly* initiative, with additional support from the Pennsylvania Department of Community and Economic Development, and a variety of other government and foundation sources. Today, the initiative includes an array of programs to provide training, technical assistance and infrastructure change to increase healthy food inventory and provide consumer education in corner stores.

A peer-reviewed study recently found that the Philadelphia Healthy Corner Store Initiative significantly increased the availability of fruits, vegetables and low-fat milk in participating stores. Store owners also reported that involvement in the initiative resulted in increased weekly profits and customer traffic.¹⁷

New Orleans Fresh Food Retailer Initiative

In New Orleans, many supermarkets closed after being badly damaged in Hurricane Katrina in 2005. As part of the rebuilding effort, the city of New Orleans partnered with Hope Enterprise Corporation (a regional Community Development Financial Institution) and The Food Trust to launch the Fresh Food Retailer Initiative (FFRI), a citywide program to encourage grocery store development in lower-income, underserved communities. The program was seeded with \$7 million in Disaster Community Development Block Grant (D-CDBG) funding, which HOPE has leveraged to more than double the total investment in grocery projects.

By providing forgivable and interest-bearing loans, the program enables operators to open, renovate or expand retail outlets that sell fresh, healthy food in underserved areas. Financing from the FFRI can be used for a wide range of activities, such as pre-development, site assembly, construction and rehabilitation, equipment upgrades, staff training and security. The program has supported several projects, including the reopening of the historic Circle Food Store, the first African-American-owned grocery store in New Orleans and a community hub for the Treme neighborhood.

WE RECOMMEND that Dallas, along with state and local governments in the region, convene leaders from the food retail industry, government, public health, economic development and civic sectors to develop a strategy to improve access to healthy food in lower-income communities.

This strategy could include developing a Healthy Food Financing Initiative to bring new and improved supermarkets to lower-income, underserved communities, and creating a Healthy Corner Store program to support existing small-store owners who want to increase the availability of fresh fruits and vegetables and other healthy foods in their stores. Local government should seek partnerships in the private sector to leverage and expand opportunities for wider community impact.

Successful programs across the country—such as the New Orleans Fresh Food Retailer Initiative and Philadelphia's Healthy Corner Store Initiative—are increasing healthier food choices, creating healthier businesses and encouraging healthier communities. Dallas is well-positioned to create similar initiatives. Key elements of the programs could include:

- **Providing grants and loans** for the development of new or expanded supermarkets in lower-income, underserved communities;
- **Training** for corner and convenience store owners to provide the skills necessary to increase the number of fruits and vegetables, whole grains, low-fat dairy and other healthy products in existing neighborhood food stores;
- **Infrastructure improvements** such as new shelving, refrigeration and signage to increase store capacity to sell and market healthy products;
- **Marketing materials** to guide customers in making healthier decisions; and
- **Community nutrition education, health screenings and cooking lessons**, both in stores and off-site, to engage local residents and build demand for healthy products.

There is already much momentum surrounding this issue in Dallas, and leaders in the business, government and civic sectors have all expressed the need for these types of programs. Through public investment, we can improve the health of residents, create jobs and spark meaningful economic revitalization in the areas that need it most.

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. Retail sales data for supermarkets were obtained from 2014 Trade Dimensions Retail Database. The Texas Department of State Health Services provided 2010–2011 death records for the state. Demographic projection data were derived from the US Census Bureau’s 2008–2012 American Community Survey.

All tabular data was prepared in MS Excel and mapped in ArcGIS 10.2.1 by ESRI. The coordinate system and projection used during mapping and analysis were the North American Datum 1983 and Texas State Plane North Central. Analysis was at the US Census Bureau’s tract level of geography using vector polygons from the 2014 ESRI Data & Maps shapefiles. Dallas County analysis used interpolated rasters and density grids from tract centroids. 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.

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 226 supermarkets in Dallas County, with an aggregate weekly sales volume of \$67,635,000. 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. 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: Weekly Sales Volume for Supermarkets*.

POPULATION

Population data estimates for Dallas County by tract were retrieved from the US Census Bureau’s 2008–2012 American Community Survey (total of 2,379,214 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

The density of weekly sales volume raster was divided by the density of total population raster. The result was then divided by \$28.43 (\$67,635,000/2,379,214) to create an odds ratio raster for weekly supermarket sales per person for Dallas County.

An odds ratio of 1 is equivalent to the countywide rate. Anything below 1 is below the countywide rate. An odds ratio of 2 means the rate is twice the countywide rate. This is used for *Map 2: Supermarket Sales and Population Density*. The result was reclassified to yield two distinct values, those below and those above the countywide sales rate.

INCOME

Dallas County median household income (\$49,159) was multiplied by number of households (849,874), and the result was divided by total population to create an income per person (\$17,559.98). Local per capita income by tract was divided by this number giving an income odds ratio. 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 countywide income rate.

SALES AND INCOME

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

DIET-RELATED DEATHS

The Texas Department of State Health Services provided mortality data for the specified list of ICD-10 codes for the years 2010–2011. A total of 10,166 deaths were summarized based upon the Census tract number, resulting in a count of diet-related deaths per Census tract.

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 countywide ratio of diet-related deaths to total population ($10,166/2,379,214 = 0.00427284$, or 43 diet-related deaths per 10,000 people) to calculate a death odds ratio. 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 countywide death rate.

DIET-RELATED DEATHS AND INCOME

The two binary rasters of Deaths and Income odds ratios were combined through multiplication to calculate a new 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 Dallas County, 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 reclassified to only retain one value: Low Supermarket Sales, Low Income and High Deaths, and were mapped to produce *Map 6: Areas with Greatest Need*.

Endnotes

- ¹ Edwards J., Pickens S., Schultz L., Erickson N., & Dykstra D. (2012). Horizons: The Dallas County Community Health Needs Assessment. Dallas, TX: Dallas County Health and Human Services and Parkland Health and Hospital System.
- ² Population in low-income, low-supermarket tracks, derived from: Trade Dimensions International, Inc. (2014); American Community Survey (2008–2012); ESRI Data & Maps (2014).
- ³ Edwards J., Pickens S., Schultz L., Erickson N., & Dykstra D. (2012). Horizons: The Dallas County Community Health Needs Assessment. Dallas, TX: Dallas County Health and Human Services and Parkland Health and Hospital System.
- ⁴ Bell J., Mora G., Hagan E., Rubin V., & Karpyn A. (2013). Access to Healthy Food and Why It Matters. Oakland, CA: PolicyLink and The Food Trust. Retrieved from: http://thefoodtrust.org/uploads/media_items/access-to-healthy-food.original.pdf
- ⁵ Institute of Medicine and National Research Council (2009). Local Government Actions to Prevent Childhood Obesity. Retrieved from: <http://iom.edu/Reports/2009/Local-Government-Actions-to-Prevent-Childhood-Obesity.aspx>; Centers for Disease Control and Prevention (2009). Recommended Community Strategies and Measures to Prevent Obesity in the United States. Morbidity and Mortality Weekly Report, 58, RR-7. Retrieved from: <http://www.cdc.gov/mmwr/PDF/rr/rr5807.pdf>
- ⁶ Combs S. (2011). Counting Costs and Calories: Measuring the Cost of Obesity to Texas Employers. Austin, TX: Texas Comptroller of Public Accounts. Retrieved from: <http://www.window.state.tx.us/specialrpt/obesitycost>
- ⁷ Institute of Medicine and National Research Council (2009). Local Government Actions to Prevent Childhood Obesity. Retrieved from: <http://iom.edu/Reports/2009/Local-Government-Actions-to-Prevent-Childhood-Obesity.aspx>; Centers for Disease Control and Prevention (2009). Recommended Community Strategies and Measures to Prevent Obesity in the United States. Morbidity and Mortality Weekly Report, 58, RR-7. Retrieved from: <http://www.cdc.gov/mmwr/PDF/rr/rr5807.pdf>
- ⁸ Sanborn R., Meyers J.H., Kimball M.S., Bernacchio M., Lew D., Hierholzer A., & Neary C. (2012). The Future of North Texas: Assessing the Quality of Life of our Children. Dallas, TX: CHILDREN AT RISK. Retrieved from: <http://childrenatrisk.org/wp-content/uploads/2013/05/The-Future-of-North-Texas-Children-FINAL1.pdf>
- ⁹ Department of State Health Services, Center for Health Statistics (2009). Texas Behavioral Risk Factors Surveillance System. Retrieved from: http://www.dshs.state.tx.us/chs/brfss/query/brfss_form.shtm
- ¹⁰ Almaguer Sandoval B., Law Y., & Young C. (2014). Healthier Corner Stores: Positive Impacts and Profitable Changes. Philadelphia, PA: The Food Trust. Retrieved from: http://thefoodtrust.org/uploads/media_items/healthier-corner-stores-positive-impacts-and-profitable-changes.original.pdf
- ¹¹ Bell J., Mora G., Hagan E., Rubin V., & Karpyn A. (2013). Access to Healthy Food and Why It Matters. Oakland, CA: PolicyLink and The Food Trust. Retrieved from: http://thefoodtrust.org/uploads/media_items/access-to-healthy-food.original.pdf
- ¹² Robinson P.L., Dominguez F., Teklehaimanot S., Lee M., Brown A., Goodchild M., & Hood D.B. (2013). Does Distance Decay Modelling of Supermarket Accessibility Predict Fruit and Vegetable Intake by Individuals in a Large Metropolitan Area? *Journal of Health Care for the Poor and Underserved*, Vol. 24(1).
- ¹³ Michimi A., & Wimberly M.C. (2010). Associations of Supermarket Accessibility with Obesity and Fruit and Vegetable Consumption in the Coterminous United States. *International Journal of Health Geographics*, Vol. 49(8).
- ¹⁴ Edwards J., Pickens S., Schultz L., Erickson N., & Dykstra D. (2012). Horizons: The Dallas County Community Health Needs Assessment. Dallas, TX: Dallas County Health and Human Services and Parkland Health and Hospital System.
- ¹⁵ Institute of Medicine and National Research Council (2009). Local Government Actions to Prevent Childhood Obesity. Retrieved from: <http://iom.edu/Reports/2009/Local-Government-Actions-to-Prevent-Childhood-Obesity.aspx>; Centers for Disease Control and Prevention (2009). Recommended Community Strategies and Measures to Prevent Obesity in the United States. Morbidity and Mortality Weekly Report, 58, RR-7. Retrieved from: <http://www.cdc.gov/mmwr/PDF/rr/rr5807.pdf>
- ¹⁶ Bell J., Mora G., Hagan E., Rubin V., & Karpyn A. (2013). Access to Healthy Food and Why It Matters. Oakland, CA: PolicyLink and The Food Trust. Retrieved from: http://thefoodtrust.org/uploads/media_items/access-to-healthy-food.original.pdf
- ¹⁷ Almaguer Sandoval B., Law Y., & Young C. (2014). Healthier Corner Stores: Positive Impacts and Profitable Changes. Philadelphia, PA: The Food Trust. Retrieved from: http://thefoodtrust.org/uploads/media_items/healthier-corner-stores-positive-impacts-and-profitable-changes.original.pdf

The Food Trust

Ensuring That Everyone Has Access To Affordable, Nutritious Food

For more than 20 years, The Food Trust has been working to ensure that everyone has access to affordable, nutritious food and information to make healthy decisions.

The Food Trust's comprehensive approach includes improving food environments and teaching nutrition education in schools; working with corner store owners to increase healthy offerings and helping customers make healthier choices; managing farmers' markets in communities that lack access to affordable produce; and encouraging grocery store development in underserved communities.

Learn more about The Food Trust:
www.thefoodtrust.org



CHILDREN AT RISK

Speaking Out + Driving Change for Children

CHILDREN AT RISK is an active research and advocacy group dedicated to improving the quality of life of Texas' children through strategic research, public policy analysis, community education, and collaboration. Now in its 25th year, CHILDREN AT RISK has grown to a statewide organization, working on a broad range of children's issues, including health and nutrition, education, human trafficking, and parenting and family well-being.

Through its Public Policy & Law Center established in 2006 as the only center of its kind in Texas, CHILDREN AT RISK uses policy and legal expertise as a powerful tool to drive change and create a better future for our children. In recent years, CHILDREN AT RISK has become a premier resource on children's issues for major media outlets, public officials, and the non-profit sector. In addition, the organization has significantly strengthened its voice in the community through a weekly radio show, regular appearances on television and radio broadcasts, and partnerships with newspapers.

Learn more about CHILDREN AT RISK:
www.childrenatrisk.org





The Food Trust

THEFOODTRUST.ORG

1617 John F. Kennedy Blvd. • One Penn Center, Suite 900 • Philadelphia, PA 19103
(215) 575-0444 • Fax: (215) 575-0466 • contact@thefoodtrust.org

children
atRisk
Speaking Out • Driving Change for Children

3625 N. Hall Street, Suite 760 • Dallas, TX 75219 • (214) 599-0072 • northtexasinfo@childrenatrisk.org