

Closing the Grocery Gap in Underserved Communities: The Creation of the Pennsylvania Fresh Food Financing Initiative

Tracey Giang, Allison Karpyn, Hannah Burton Laurison, Amy Hillier, and R. Duane Perry

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The issue of access to healthy foods has been central to the work of many community-based organizations around the country. One such organization, The Food Trust, launched an effective advocacy campaign to bring awareness and policy change to the issue. The Food Trust's efforts with its partners resulted in the creation of the Pennsylvania Fresh Food Financing Initiative, the nation's first statewide financing program to increase supermarket development in underserved areas. This article focuses on a key component of the advocacy campaign: the creation of an evidence-based report that served as a strong, credible foundation for the campaign. The steps that were taken to find partners, obtain and analyze the data, and disseminate the findings are described. In addition, the outcomes of the Fresh Food Financing Initiative are discussed.

KEY WORDS: diet-related disease, financing, policy, public health, supermarket

Emerging research has demonstrated that factors in the built environment, such as the availability of healthy foods, play an important role in determining a person's diet¹⁻³ and risk of related chronic diseases.⁴ Many studies have documented the lack of supermarket access in communities throughout the country. The "grocery gap" existing today in many urban areas resulted from the confluence of complex social, economic, and public policy factors. This phenomenon can be traced back to the 1960s and 1970s when urban centers experienced population decline as residents fled inner cities for refuge in the suburbs. Mirroring these demographic trends, supermarkets, along with other businesses, left as well. Among the factors that made

the suburbs an attractive market included larger, less expensive tracts of land ready to be developed, simplified and business-friendly zoning and other regulations, more homogenous consumer preferences, and less crime.

Philadelphia, like many cities across the country, also witnessed its own supermarket exodus. A national study found that Philadelphia had the second lowest number of supermarket stores per capita of major cities in the nation during the 1990s.⁵ Nationally, the number of supermarkets in the lowest-income neighborhoods was almost 30 percent less than the number in the highest-income neighborhoods.⁶ In the Philadelphia region the situation was substantially worse: the highest-income areas had 156 percent more markets than the lowest-income areas. In low-income neighborhoods with few to no supermarkets, residents are less able to afford to travel to the areas where supermarkets are concentrated. Thus, while Philadelphia was not exceptional in terms of the characteristics or poverty status of its residents in comparison with other major cities, Philadelphia's overall lack of access to healthy foods due to the supermarket shortage was exceptional, requiring leadership and action to remedy the situation.

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A growing body of evidence supports the idea that efforts to increase access to affordable, nutritious food can improve health status. Studies also highlight positive outcomes related to supermarkets. Supermarkets have been found to offer a large variety of healthy foods⁷ with typically the lowest prices in comparison with other, smaller food stores.^{8,9} Some research suggests that the presence of supermarkets in a community is associated with a lower prevalence of obesity and overweight whereas the opposite is true with the presence of convenience stores.^{4,10} One study found that the availability of healthful products was associated with an increased consumption of those products by individuals living near supermarkets.¹¹

Other research has found that African Americans' fruit and vegetable consumption increased by 32 percent for each additional supermarket in the neighborhood (White American's consumption increased by 11 percent, perhaps because Whites had greater access to personal transportation and thus were less dependent on local markets).² Studies suggest an association between eating more fruits and vegetables and lower body mass index in both adults and children¹² as well as decreased risk of major chronic diseases. Data from longitudinal studies demonstrate that childhood obesity is linked to a broad range of adverse health outcomes in adulthood for both men and women.^{13–15}

The Food Trust (hereafter referred to as The Trust), a nonprofit organization based in Philadelphia, was well-positioned within the community to take a lead role in crafting an advocacy campaign around the supermarket issue. The Trust's experience with other food access issues, such as farmers' markets and nutrition education, gave the organization a nuanced understanding of the community's needs. Through its work with operating farmers' markets in underserved communities, The Trust realized that farmers' markets could not meet the year-round food needs of residents. In addition, through its work with nutrition education in schools, The Trust recognized that teaching about healthy eating would not solve the problem if children and their families had nowhere to purchase more nutritious foods.

Research has shown that lack of access to supermarkets negatively impacts low-income residents' health and economic well-being. Residents are forced to travel out of their neighborhoods to purchase food or shop at smaller corner and convenience stores that generally have lower quality and limited fresh, healthy food.^{16–18} These stores also tend to charge substantially higher prices.^{8,19,20} Although low-income households spend less money on food, a greater proportion of their income is spent on food.²¹

This article discusses how The Trust launched an effective advocacy campaign to bring awareness and policy change to the "grocery gap" issue, ultimately re-

sulting in the creation of the Pennsylvania Fresh Food Financing Initiative, the nation's first statewide financing program aimed at increasing supermarket development in underserved areas. The initiative provides financing for supermarket operators that plan to operate in underserved communities where infrastructure costs and credit needs cannot be filled solely by conventional financial institutions. Specifically, the article focuses on how the creation and marketing of an evidence-based report was a critical component of the campaign, helping provide a strong, credible foundation for the work to come. The steps that were taken to find partners, obtain and analyze the data, and disseminate the findings are described below. In addition, the outcomes of the Fresh Food Financing Initiative are discussed later in the article.

● Methods

On the basis of the anecdotal information about the lack of supermarket access in many parts of Philadelphia, along with some research demonstrating that Philadelphia ranked second in having the lowest number of supermarkets per capita of major cities, The Trust conducted a research project, with the findings published in a report, that examined how public health was affected by the supermarket shortage. Policymakers were the primary audience for the report, which served to inform them about the issue of supermarket access in Philadelphia. The following provides a description of the key methodological considerations factoring into the creation of the report.

In 1999, The Trust approached the Philadelphia Department of Public Health to explain the purpose of the proposed research and to begin the process of obtaining citywide health data. Specifically, the research project focused on mortality data because this information can be obtained by where individuals reside. (In contrast, morbidity data show where treatment services may have been rendered, which may not correspond to the neighborhoods in which individuals live.)

To map supermarket locations, annual retail sales data for supermarkets were obtained from Trade Dimensions (a Westport, CT vendor that provides data on supermarket and convenience store location, size of store, and sales). Demographic data were derived from the 1990 US Census. With assistance from the Philadelphia Department of Public Health, mortality data were coded into deaths believed to be related to diet. This process included a team of physicians from a local hospital who reviewed all causes of death during the study year and classified the cause as related to diet or not. Because causes of death are likely to involve a variety of influences beyond just diet, the reviewers relied

more on exclusionary, rather than inclusionary, criteria; that is, diseases that were clearly not related to diet were excluded and the remaining diseases were included. For example, the diet-related classification included deaths due to certain neoplasms (stomach, other digestive organs, breast); endocrine and nutritional and immunity disorders (diabetes mellitus); and diseases of circulatory systems (hypertension, myocardial infarction, heart disease).^{*} To examine the relationship between food access, income, and our classification of diet-related deaths, The Trust partnered with researchers at the University of Pennsylvania to create a visual representation through Geographic Information Systems (GIS), a computerized mapping technology.

To analyze the supermarket sales and demographic and death data together, all data were converted to raster GIS map layers by using the Spatial Analyst for ArcView 3.2 (ESRI; Redlands, CA) software. First, a density map showing weekly supermarket sales volume was created, using a 1-mile distance to distribute the supermarket sales. One mile was chosen because The Trust and other food advocates had determined that this is an appropriate distance to travel for groceries. This raster layer was then divided by a raster layer of population density (based on block group census data) and divided by \$17.41, the citywide ratio of sales to population, to calculate an odds ratio for weekly supermarket sales comparing each raster cell to the citywide average. Ratios greater than 1 represent above-average (high) sales and ratios less than 1 represent below-average (low) sales. Second, median household income was multiplied by the number of households to determine total income density for each block group then a raster GIS layer was created. Third, a total of 7 586 diet-related deaths (out of the 17 172 Philadelphia deaths) were used to create block group measures of diet-related death controlling for total population and the area of each block group, and then a raster GIS layer was created. Raster cells with death rates higher than the citywide average were defined as "high" and raster cells with death rates below the citywide average were defined as "low." These three map layers were then analyzed together using Spatial Analyst's map to identify areas that were high or low in supermarket sales, income, and diet-related deaths.

In total, six maps were created and included in the report to demonstrate the relationship between the incidence of health, income, and supermarket access. The

maps included (1) weekly sales volume for supermarkets, (2) supermarket sales and total population, (3) supermarket sales and income, (4) low supermarket sales and low Income, (5) income and diet-related deaths, and (6) areas with greatest need. Figure 1 shows a map of the supermarket density, Figure 2 shows a map of income and diet-related deaths, and Figure 3 shows a map of areas with greatest need.

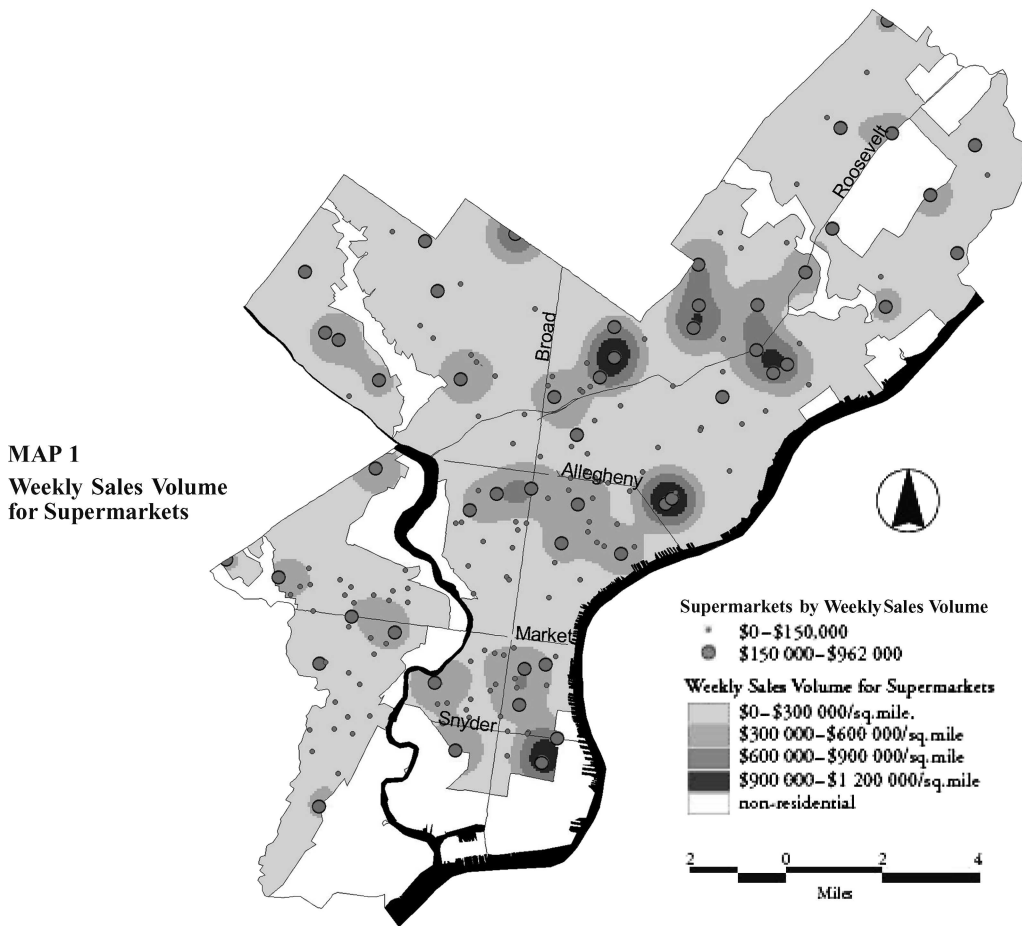
● Results

The report found that access to food is unevenly distributed in Philadelphia. Low-income residents are disproportionately affected by limited food access. Supermarket sales in Philadelphia are concentrated in a small number of locales, instead of being dispersed throughout the city in relation to the population, indicating that many people are traveling considerable distances to buy food at supermarkets in the few neighborhoods where these stores are easily accessible. In addition, in many of the same communities that lack adequate access to supermarkets, low-income Philadelphia residents are more likely to suffer from health problems meeting our classification of diet-related diseases, such as heart disease, cancer, and diabetes. As such, these areas became an important consideration when determining policy-based solutions.

As a part of the advocacy campaign, a document detailing these findings was released in 2001 in a report titled, *The Need for More Supermarkets*, the first of a continuing set of reports in the *Food For Every Child* series created by The Trust. The report was disseminated widely to the public, Philadelphia's City Council, and other public officials. The report captured the attention of City Council members, who responded by holding public hearings on the relationship between supermarket access and health in 2002. Following the hearings, City Council directed The Trust to convene a task force to identify policy changes to increase the number of supermarkets in Philadelphia. The Food Marketing Task Force, cochaired by a senior vice president of Acme Markets and the CEO of the United Way of Southeastern Pennsylvania, included more than 40 experts from city planning and economic development agencies, the supermarket industry, and the civic sector. In a series of meetings in 2003 and 2004, The Food Marketing Task Force examined the barriers and opportunities to developing supermarkets in Philadelphia's neighborhoods. In spring 2004, The Food Marketing Task Force released another report, *Stimulating Supermarket Development: A New Day for Philadelphia*, with 10 recommendations to increase the number of supermarkets in Philadelphia's underserved communities. These policy changes were intended to create a more positive climate

^{*}While the term *diet-related death* is used, the methodology used to gather and analyze data did not provide direct evidence of a causal link between diet and mortality. Rather, diet is known to be a contributing factor to the diseases (eg, diabetes, heart disease) reported as the cause of death.

FIGURE 1 ● Supermarket Density. Provides an overview of where supermarkets are and the relative size of markets



The first in a sequence which begins with where markets are located and ends with a discussion of where they are not located.

for supermarket development and generate jobs, alleviate diseases related to poor diets, and contribute to the revitalization of Philadelphia.

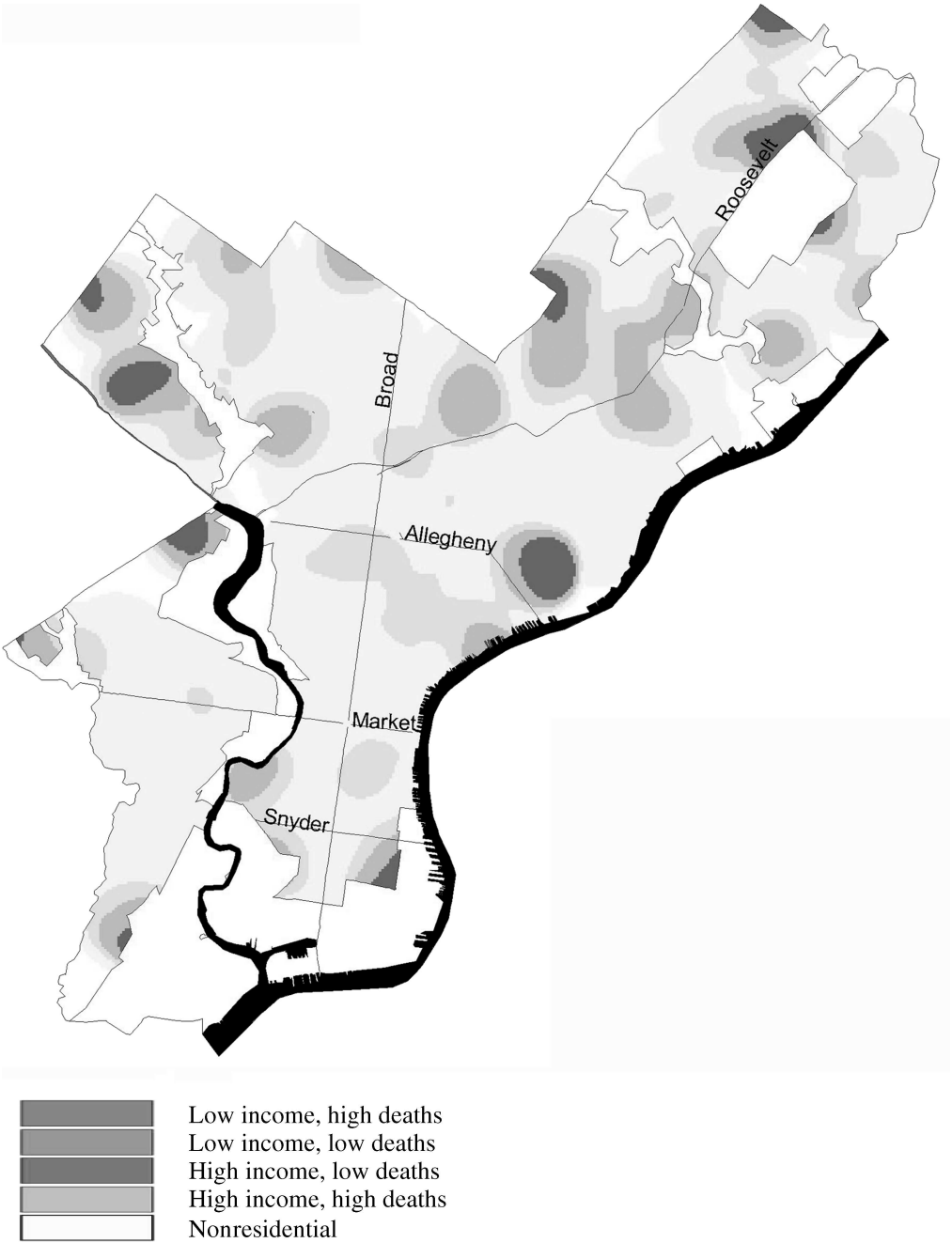
The sustained public attention to this issue within the city of Philadelphia also generated interest at the state level. State Representatives Frank Oliver and Dwight Evans from Philadelphia and Representative Jake Wheatley from Pittsburgh called for hearings on the grocery store gap, which were held by the Pennsylvania House Committee on Health and Human Services. In December 2003, the Committee issued a report, stating that the grocery store gap had an adverse impact on urban and rural communities statewide. The report called for a new partnership between government and industry to respond to the problem.

All these efforts, including the leadership of Representative Evans, culminated in the State's allocation of \$10 million to create the Fresh Food Financing Initiative in the spring of 2004. Another \$10 million was allocated to the initiative in June 2005, and a third allocation in

2006. The Fresh Food Financing Initiative became the nation's first statewide program aimed at the supermarket development. Because financing and capital gaps can often be a barrier to supermarket development in underserved areas, this program works to meet the financing needs of supermarket operators that plan to operate in underserved communities where infrastructure costs and credit needs cannot be filled solely by conventional financial institutions.

The Fresh Food Financing Initiative is supported by a partnership of The Trust, The Reinvestment Fund (a community development bank), and the Greater Philadelphia Urban Affairs Coalition (a community-based organization in Philadelphia). The \$30 million allocation from the State has been leveraged 3:1 by The Reinvestment Fund through private sources as well as New Markets Tax Credits to create an overall \$120 million multifaceted financing pool. At this writing, the Fresh Food Financing Initiative has committed \$26,800,000 in grants and loans to fund 32 stores

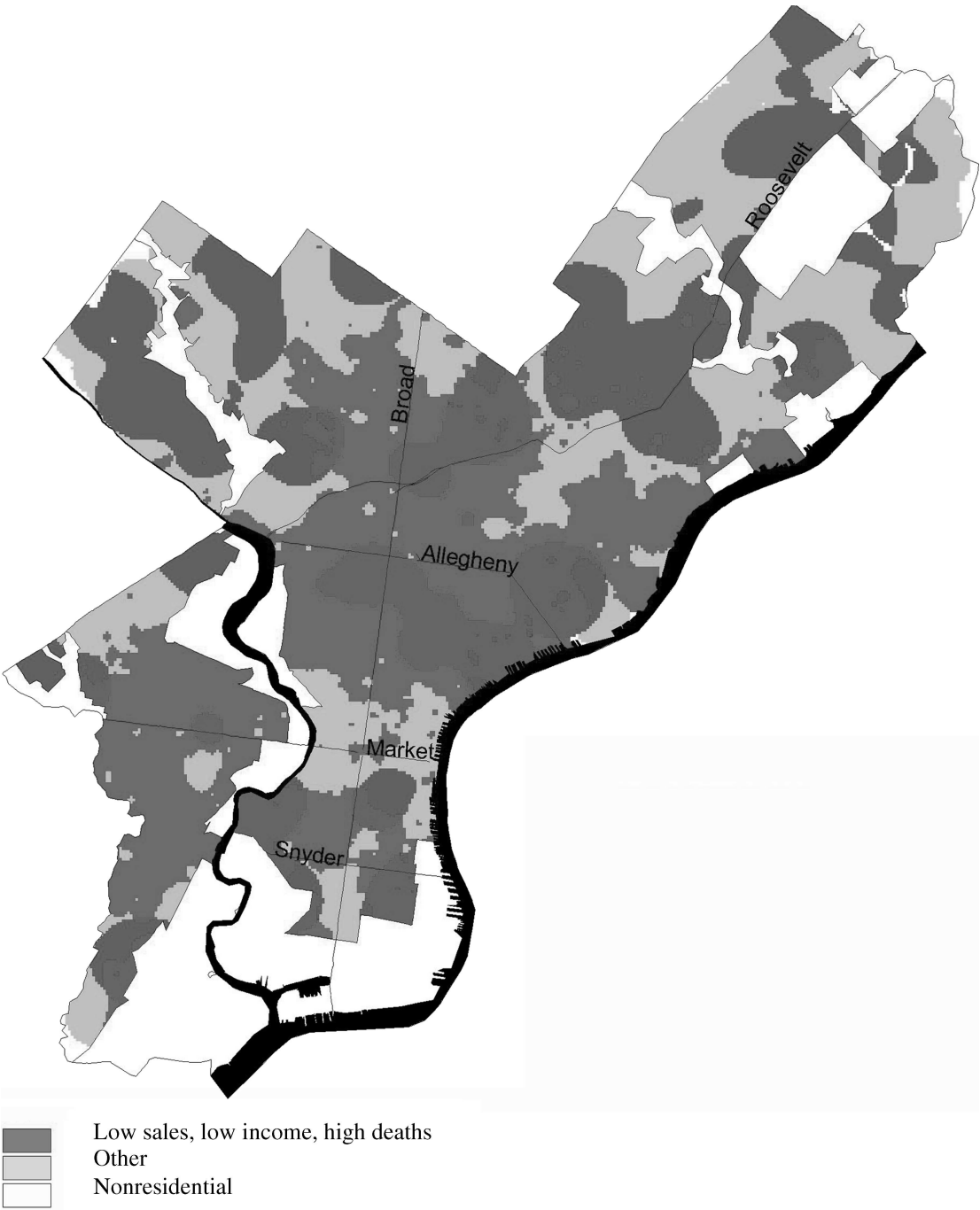
FIGURE 2 ● Income and Diet-Related Deaths



Source: The Food Trust. *The Need for More Supermarkets in Philadelphia*. 2001.

Demonstrates the relative distribution of diet-related death and income across the city. Of note are the areas in red where low-income residents have the highest need for stores based on death rates.
Source: The Food Trust. *The Need for More Supermarkets in Philadelphia*. 2001. For a full-color version of any map, go to www.thefoodtrust.org and click on The Supermarket Campaign to locate a copy of the report.

FIGURE 3 ● Areas with Greatest Need



Source: The Food Trust. *The Need for More Supermarkets in Philadelphia*. 2001.

Similar to the previous figure the report provided simplified maps that highlighted just the areas of greatest need. In doing so the report was able to appeal to a variety of individuals regardless of familiarity with GIS mapping.
Source: The Food Trust. *The Need for More Supermarkets in Philadelphia*. 2001.

throughout the state. Of the 32 stores, 16 are located in Philadelphia and 16 are located elsewhere in Pennsylvania. Projects are at various stages of completion and 22 stores have been opened.

● Discussion

Not only do supermarkets positively affect the physical health of a community, but they also have a significant impact on a community's economic vitality. In 2008, an estimated number of 320 000 or more residents will be served by the 32 food stores funded by the Fresh Food Financing Initiative.

Supermarket development helps revitalize and strengthen communities by creating direct and indirect jobs that improve the health of the local economy. The 32 food stores funded by the program have created or retained approximately 2 645 direct jobs and represent more than 899 000 square feet of food retail space. These stores also serve as catalysts and anchors for a positive cycle of additional economic investment, both residential and commercial. While the program has committed \$26 800 000 in grants and loans to fund the 32 projects to date, these stores represent financial investments of more than \$140 million. On the basis of consumer expenditure data, we estimate that in the 32 communities, residents will be spending more than \$95.3 million annually on fruits and vegetables. Many more projects are in the financing pipeline statewide.

In reviewing the advocacy campaign that ultimately led to the creation of the Fresh Food Financing Initiative, a few points are worthy of discussion. Although the process took years to achieve and many factors were critical to the campaign's success, the creation of the initial evidence-based report provided a strong, credible foundation for the subsequent work of the campaign. The objectives behind the report, which were to educate the public and policymakers about this important "grocery gap" issue and to create a public health urgency around the issue that would spur policy change, were achieved through the strategic presentation of information and the report's delivery to key stakeholders. The analysis in the report was based at the level of neighborhood geography, ensuring that the needs of underserved communities were highlighted appropriately. The use of simple colored maps with key pieces of information on them enhanced the presentation of the data. The language in the report was kept purposefully simple so that an audience of people from diverse backgrounds could understand the information. In disseminating the findings of the report, public policy leaders were targeted as recipients; however, engaging the media's attention was also critical to getting the message out widely. In addition, partnering with the Philadel-

phia Department of Public Health and the University of Pennsylvania lent further authority to the "grocery gap" issue and the report's findings. The complete report is available on-line at www.thefoodtrust.org.

While the report was an effective means of communication about the issue, the research on which the report was based had some limitations. As mentioned earlier, the use of the term "diet-related death" can be problematic because there is not a universal definition for the classification, and underlying causes of death are likely to be a result of a combination of factors. We also did not adjust for age in the study, and because the northeastern section of the city has relatively more older adults, this may have influenced the findings. The study also includes an underlying assumption that city residents shop at nearby stores and are not shopping outside the city. Finally, the use of raster GIS conversions introduced error when working with block-group demographic and death data.

Finally, it is noteworthy that while the issue of lack of access to fresh foods can be approached from many perspectives, the singular focus of the campaign centered around the stimulation of supermarket development in lower-income neighborhoods. In setting the stage for what would later come in the campaign, the report called on city and state governments to take a lead in developing a public-private response to the problem. This sharp focus ensured that subsequent efforts to address the problem were essentially all working toward the same policy goal rather than numerous, divergent goals. While not without limitation, the maps remained useful in communicating to policymakers a problem with which many already had firsthand familiarity. In the end, the report provided a systematic analysis of the grocery gap issue and served as a powerful tool for communication.

The experience of The Trust in this advocacy campaign underscores the critical role that community-based organizations can play in catalyzing public policy change. In particular, our experience highlights the importance of marshalling evidence about an important public health need in the form of a compelling, visually appealing report, which can be used both to educate the public and to advocate for crucial policy changes.

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