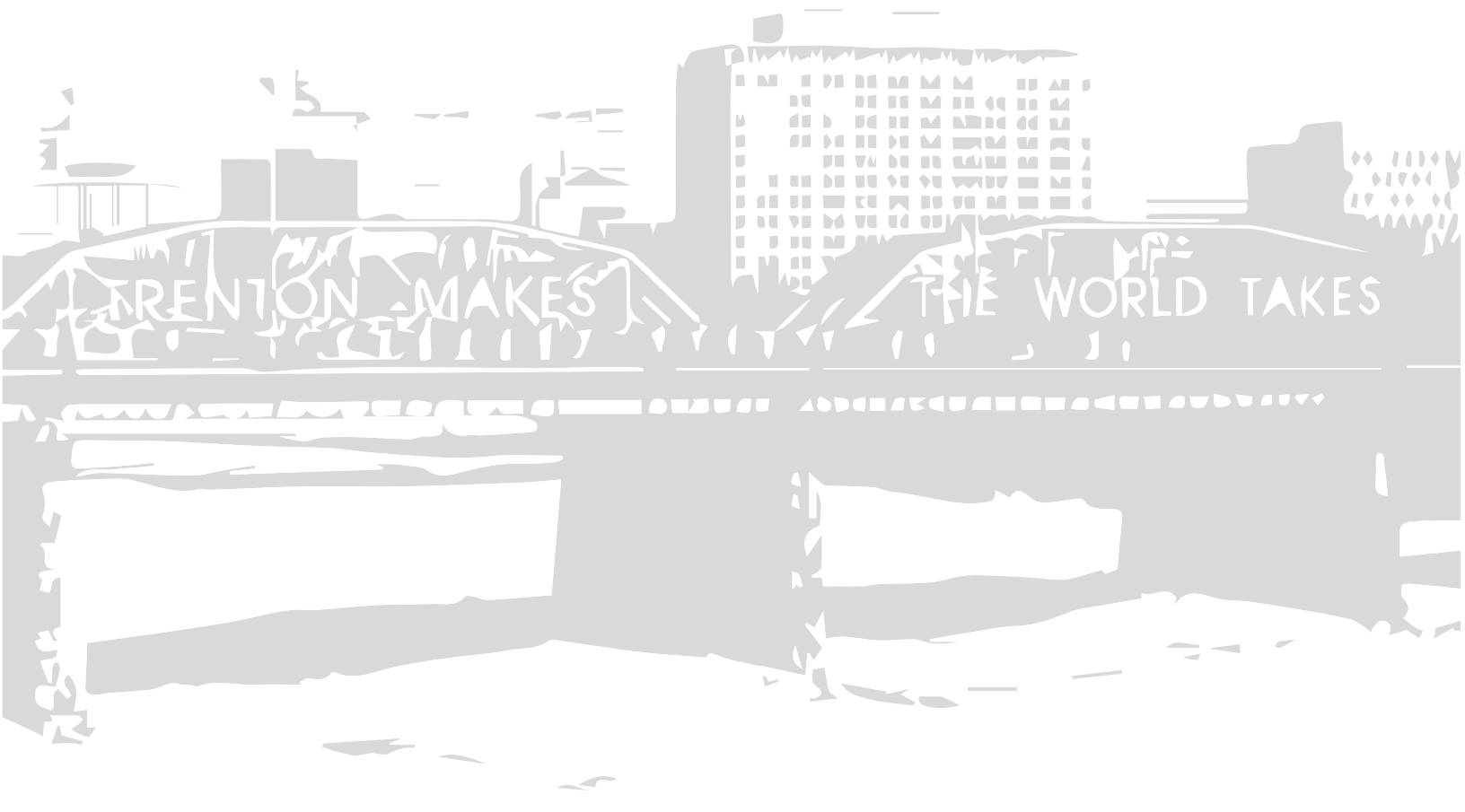


FOOD ASSETS

TRENTON, NJ



NEW YORK UNIVERSITY - WAGNER SCHOOL OF PUBLIC SERVICE

PREPARED BY: Jonathan Keyes | Norman Ornelas, Jr. | Christopher Penalosa

Paula Rubira | Joshua Sellers

FACULTY ADVISOR: Kei Hayashi

PREPARED FOR: Isles Inc. | Rutgers Center for Urban Environmental Sustainability

Table of Contents

Executive Summary	1
Project Overview	3
Why an Asset Map?	4
Framework	5
Existing Conditions	
City Characteristics and Historical Background	6
Transportation	8
Health	9
County and State Initiatives	10
Zoning	12
Food Ordinances	12
Vacant Properties	12
Agricultural Assessment	13
Freight Analysis	16
Methodology	
Literature Review	18
Data Sources	18
Assets	
Defining Food Assets	20
Raw Material	21
Processing	22
Distribution	23
Retail	23
Supply Side Findings	
Regional Perspective	26
Within Trenton	27
Food for Thought	
Physical Barriers to Access	29
Attracting New Food Businesses	34
Alternate Arrangements	38
Conclusion	43
Appendix A: Limitations of Data	44
Appendix B: Recommended Studies	44
References	45

Executive Summary

Over the course of a nine month period, a Capstone team from the NYU Wagner Graduate School of Public Service set out to research and document the existing food supply in and around Trenton, NJ. With support and collaboration from Isles and the Center of Urban and Environmental Studies at Rutgers University, the team produced an asset map to be used as a source for the development of future food asset recommendations.

The capstone team identified the following primary goals with Isles and Rutgers:

- Provide the client and community with a visual representation of the community's food and other nutrition resources
- Quantitatively and qualitatively summarize the relevant features of Trenton's food assets as a whole
- Identify possible considerations for project-based strategies for addressing asset gaps

Within the 100 mile radius around Trenton, 65 counties from 6 different states were captured to define the local food shed around the city. Within the local food shed, 24% of land is used to agriculture. Just under two percent of the country's farms are located within Trenton's food shed; much of what is consumed by residents in the food shed is, in fact imported from other parts of the country and world.

Between the six states that share in Trenton's local food economy, the Federal Highway Administration recorded total freight activity of over 2.8 billion tons of food commodities in 2007. Between the two major metropolitan regions of New York City and Philadelphia, the FHWA recorded just under 3.6 billion tons of food related commodities, valued at \$6 trillion, or 6.2% of the two metropolitan areas' combined total food commodity freight activity of \$96 trillion.

There are six food wholesalers (non-retail establishments that are not accessible to residents) in Trenton, which together they em-

ploy approximately 100 people with an estimated sales volume of \$146 million. These six wholesalers represent 35% of the 17 wholesalers located within Mercer County, and they employ 58% of workers within the County's wholesaler industry. The highest grossing wholesaler in the city is ARM National Foods, which makes approximately \$67 million annually and employs approximately 30 people. The next highest sales volume wholesaler is Case Pork Roll Company, a family-owned meat wholesaler that has operated in Trenton for over 140 years and brings in \$53 million in sales volume annually, with an employee base of approximately 25 people.

For the retail food environment, existing literature underscored a strong need for supermarkets in New Jersey's urban areas, and in Trenton in particular. This study utilized the ReferenceUSA proprietary database, as well as online listings and data from the Trenton Department of Health, to compile a list of food establishments within the city. Supermarkets are assumed to carry fresh produce and other nutritious foods at competitive prices, Convenience Stores designate stores which carry low-nutrition or highly-processed foods, and Grocery Stores refer to stores which carry a smaller variety of foods than supermarkets but generally provide more nutritious and more affordable food than convenience stores.

This study generally support the findings of most existing studies on Trenton performed to date: the city has few traditional supermarkets and grocery stores, and has a high number of convenience stores. In particular, Trenton is served by one supermarket, Food Bazaar, located in the Roebling Market, and four grocery stores, two of which are full-service stores and two of which are specialty stores. Nationally, there is 1 supermarket for every 15,250 people and in Mercer County, there is one supermarket for every 11,450 residents. In Trenton, one supermarket serves 84,500 people. The number of supermarkets in the city would need to increase to five to approach the national average. The city also contains 191 Full-Service Restaurants, 115 Limited-Service Restaurants, and 13 Coffee Shops, Bakeries, or Other restaurant assets.

The Centers for Disease Control and Prevention uses a modified Retail Food Environment Index (mRFEI) to measure the ratio of healthy food outlets to overall food outlets. Trenton's mRFEI is 2.4; that is, 2.4% of Trenton's food assets offer healthy food. In contrast, the mRFEI for New Jersey is 8, and for the United States, it is 10.

Only 22.5% of residents live in a block group that is within a quarter-mile radius, or five-minute walk, of a grocery store or supermarket. The limited number of assets within walking distance of residential areas amplifies the need for a robust transit system. In Hartford, Connecticut, the L-Tower Avenue bus route links low-income residents to job centers, medical services and retail options. In Austin, Texas, a circulator route was created to connect low-income residents in the Eastside of the city to two different supermarkets that offered healthy, whole foods. The physical attributes of a city can also have an impact on food accessibility. As Trenton moves forward to make improvements on its streets, attention should be given to the areas surrounding Trenton's strongest food assets. One potential solution to put in place immediately is to use signage provided by a program called Walk Your City. The signage gives pedestrians the average walking time to reach a particular destination and can be implemented on existing road signs.

The U.S. Department of Treasury and The Reinvestment Fund (TRF) sought to identify areas with limited supermarket access and quantify opportunities for new food stores in underserved areas. TRF defined a Limited Supermarket Access (LSA) area for the Trenton metropolitan area whose total grocery retail leakage was \$51,000,000, suggesting the market may potentially support two additional supermarkets within the LSA. New Market Tax Credits, HUD Section 108 Loans, tax incentives, and various forms of low-interest financing are all mechanisms that have been used to support the development of supermarkets underserved areas. Nevertheless, although such purchasing power may be present, demand is not so easily achieved. Change in food consumption may come with generations of access. Education, public health campaigns, food-related events, and other incentives are important as well.

Although supermarkets have generally been cited as the best source of affordable and nutritious food, there are hypothetical arrangements for alternative models that would adequately serve the city. A few small grocery stores can adequately replace a single large supermarket, and can be more accessible in an urban environment due to scale and urban form. In-store audits of food availability conducted by researchers in New Orleans found that smaller grocery stores could, and in many case did, contain nutritious food.

Cities across the country have implemented healthy convenience store initiatives. The city of San Francisco's Healthy Food Retailer Incentives Program aims to increase the quantity of healthy food in convenience stores by offering financing and assistance to convenience store owners who agree to dedicate a percentage of shelf space to healthy foods. The Healthy Youth Retail Initiative was developed to encourage youth in Brooklyn to design and execute a campaign to spark healthy food merchandising and purchasing activities in community groceries. The City of Baltimore's Department of Health created Baltimarket to maximize their existing assets through the use of a virtual marketplace that brings healthy groceries from a city supermarket to local public schools and libraries.

A key strength of Trenton, from a regional perspective, is that it is situated in the midst of a major regional food production and distribution system, while Trenton's most obvious weakness is its collection retail food assets, which are inadequate for its population size and distribution. The growing interest and awareness in healthy food consumption may represent an opportunity for Trenton, but political instability in Trenton may represent the greatest near-term threat to achieving any sort of comprehensive change. This report does not attempt to offer solutions to improve food access for Trenton's 84,500 residents. Instead, it offers a quantitative perspective on the state of the food industry within the City and the region, while providing glimpses of food-related programs that have been successful elsewhere in the United States. Those who know Trenton best, who understand its resources, needs, and political, social and economic realities, are in the best position to evaluate if and how these programs might best serve the city.



Image Source: Louis Dallara

Project Overview

Trenton, the state capital of New Jersey, is a post-industrial city that is struggling to respond to numerous challenges, including a current unemployment rate of 11.6%, a population that has declined steadily over the last six decades, and high rates of residential and commercial vacancies. In addition, access to fresh and healthy food in Trenton is difficult for the city's 84,500 residents, who are served by just one major supermarket. In collaboration with the Center for Urban and Environmental Studies at Rutgers University and Isles, the Capstone team has undertaken a mapping of food assets for the city and region. To accomplish this, the Capstone team has conducted comprehensive business and sales data research to identify Trenton's food assets and how residents interact with those assets. Using GIS and design software, the team produced visual representations to better understand Trenton's food challenges.

For the Trenton food asset mapping, the Capstone team has identified the following goals:

- Provide the client and community with a visual representation of the community's food and other nutrition resources
- Quantitatively and qualitatively summarize the relevant features of Trenton's food assets as a whole
- Identify possible considerations for project-based strategies for addressing asset gaps

Why an asset map?

Numerous studies have identified gaps within the existing food systems in and around Trenton. These studies have found that obesity is a significant health problem within the city, particularly among children¹, that affordable food outlets with healthy foods are scarce and inaccessible², and that there are “few healthy food options in low-income neighborhoods.”³ These problems are spatial and socioeconomic in nature, functions both of urbanism and density, and of income, affordability and cultural norms.

An asset map is a powerful tool for communicating large amounts of complex information using visual design tools. Asset maps portray both physical and intangible facets of a space simultaneously, thereby helping to reveal existing conditions, trends, patterns, and, ultimately, by highlighting previously undetected connections, solutions⁴. Food asset mapping has been employed when seeking to identify where production, distribution, and consumption of food resources occurs in a particular region. It can be used to identify strengths and weaknesses within food systems and can provide a framework for developing policy and programming recommendations in the health, environment, community, and economic sectors.

¹ Gervasio, McAloon, Community Health Needs Assessment Report: Trenton, NJ

² Akbar et al, 2011, Food Security in Trenton: What Families, Communities and Governments Can Do to Promote Healthy Living

³ A Community Food Assessment of Trenton, NJ

⁴ Asset Mapping. UCLA Center for Health Policy Research.

Framework

1 City
Background



2 Assets
Overview



3 Analysis &
Food for Thought





Existing Conditions

City Characteristics and Historical Background

Strategically located along the Delaware River and between the major metropolitan areas of both New York City and Philadelphia, Trenton became one of the great American centers of industrial commerce at the turn of the 20th century. As the result of a competition held by its influential Chamber of Commerce in 1911, Trenton adopted the slogan “Trenton Makes, the World Takes” that still adorns the Lower Trenton Bridge. At the time, it was a statement that few could deny. Pottery was one of the city’s major exports and at one point this industry employed over 4,000 people. Trenton was also well known for producing rubber products, bricks, oilcloth, and linoleum. Anchoring the greater local economy was the Roebling’s Sons Company, which manufactured the steel cables that suspended bridges all over the world, including the iconic Brooklyn Bridge. Trenton, in effect, was a “company town.” A few major industries comprised the lion’s share of the city’s economy and people flocked to Trenton from all over the country looking for work. As many of Trenton’s local companies began to realize advantages in other cities or countries, the city suffered. In order to manufacture the steel cables that would support the Golden Gate Bridge, set to be the world’s longest suspension bridge at the time, the Roebling family decided not only to build a new factory

downstream along the Delaware River, but decided to plan and build the new “company town” of Roebling, New Jersey.

Trenton’s decline began during the Great Depression, interrupted only by the industrial demand generated by World War II. Since then, the city has suffered from a trend of declining jobs, population and quality of life. According to the U.S. Census Bureau, the city today is home to approximately 84,500 people, down from a peak of 124,000 in 1950. The primary employers are now the State, County and municipal governments seated in Trenton. Although the few jobs that now exist in Trenton are stable, the lack of diversity and opportunities in the local job market has directly led to a decline in the population ⁵.

In recent years, the city’s population has continued to shrink, albeit at a much slower pace than in previous decades. As the total population has decreased, the percentage of residents from minority groups has risen substantially. Black and African American residents make up 52% of the total population in Trenton, compared to approximately 14% in the state of New Jersey, and 13% in the U.S. The percentage of Hispanic and Latinos is also

⁵ <http://www.trentonhistory.com>

TOTAL
POPULATION

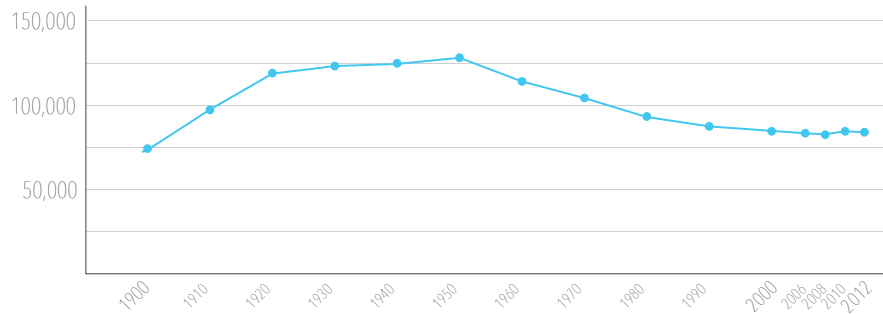
TRENTON

84,477

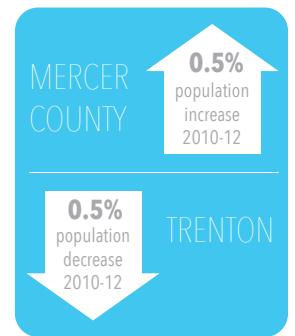
NEW JERSEY

8,864,590

TRENTON POPULATION CHANGE (1900-2012)



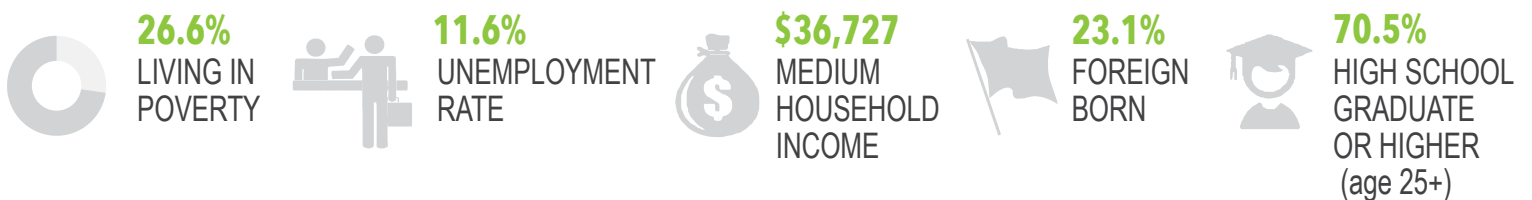
Source: U.S. Census (2012) and Historical U.S. Census



RACE AND ETHNICITY



SOCIAL INDICATORS



Post Industrial City

Trenton has been affected with major loss of industry. The city also lost over 30% of its population since 1950s.



State's Capital

There are over 180 state owned property (20% of city area); the city does not collect property taxes from the state.



Corruption

In February of 2014, Trenton's mayor Tony F. Mack was found guilty of bribery, fraud and extortion.



Master Plan

In 2008 Trenton adopted a Master Plan for the downtown. A city wide plan is currently being drafted.

minority groups has risen substantially. Black and African American residents make up 52% of the total population in Trenton, compared to approximately 14% in the state in New Jersey, and 13% in the U.S. The percentage of Hispanic and Latinos is also higher in Trenton, at 33.7%, compared to 18.5% in New Jersey, and 16.9% in the U.S. In addition, roughly 23% of the city's residents are foreign-born.

As is the case for many communities where the majority of residents belong to minority groups, Trenton has a large percent of its population living below the poverty level. Over 26% of the city's residents live in poverty. The situation has had an especially hard impact on children; 39% of residents under the age of eighteen live in poverty in Trenton. In contrast, Mercer County has 15.4% of children living below the poverty line ⁶.

Transportation

Public transportation options in Trenton are generally limited to commuter rail lines and bus services provided by New Jersey Transit. Anchoring both of these transit options is the Trenton Transit Center, located at the corner of South Clinton Avenue and Barlow Street, three-quarters of a mile from Trenton's historic downtown. Amtrak's regional commuter rail line and the New Jersey Transit Northeast Corridor and River Lines all serve this station.

The Transit Center accommodates local and commuter buses from both the NJ Transit as well as the Philadelphia-based SEPTA Transit System, which also serves passengers in West Trenton. Local buses operated by NJ Transit cover all arterials leading in and out of the city center and provide a relatively high level of service for the residents of Trenton.

Modes of Transportation to Work



⁶ US Census Bureau

Housing Characteristics



35,208

TOTAL
HOUSING
UNITS

80.3%

OCCUPIED
19.7%
VACANT

59.5%

RENTER-
OCCUPIED

31.5%

OF HOUSEHOLDS
HAVE NO VEHICLES
AVAILABLE

51.6%

OF HOUSEHOLDS PAY
35% OR MORE OF
THEIR INCOME IN RENT

\$ 965

MEDIAN
GROSS
RENT

Source: American Community Survey, 2007-2012

higher in Trenton, at 33.7%, compared to 18.5% in New Jersey, and 16.9% in the U.S. In addition, roughly 23% of the city's residents are foreign-born. As of 2014, Trenton is also in the midst of an uncertain political climate and is undergoing a shift in mayoral administrations. Automobiles for basic mobility. The U.S. Census Bureau data on commuters highlights this dependency. Over 30% of households in Trenton have no vehicle access⁷.

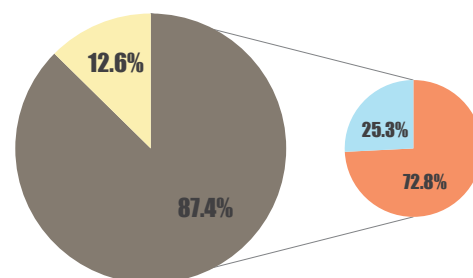
Trenton has very limited pedestrian and bicycle infrastructure to support alternative transportation. Pedestrians do not have a pleasant experience in many of Trenton's neighborhoods; it is especially difficult for wheelchairs, strollers, children and elderly due to cracks and unevenness on sidewalks. According to Walkscore, a website that promotes pedestrian friendly communities, the city of Trenton has a score of 70 (very walkable) where most errands can be accomplished on foot. However the score simply measures proximity to businesses and other infrastructure necessary for daily life activities, not quality of infrastructure. The score is also likely to be high due to the population density in Trenton, which is over 11,000 residents per square mile – nearly eleven times greater than that of New Jersey⁸.

Health

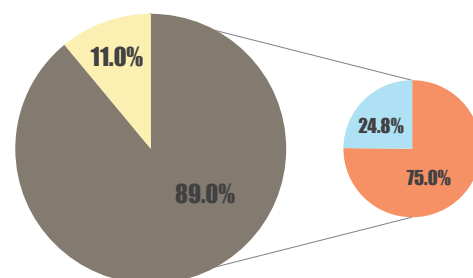
Data gathered by the State and Federal government highlight a number of food-related health issues, including high rates of obesity, diabetes, and high blood pressure, among other issues. The graph below provides an overview of health related data. Trenton's residents are especially vulnerable in comparison to peers due to discrepancies in health care coverage.

Health Care Coverage

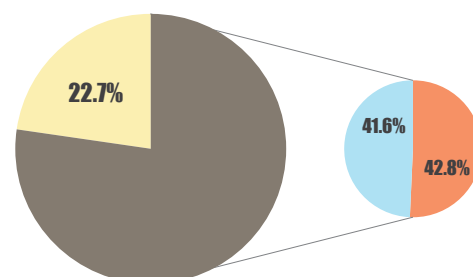
NEW JERSEY



MERCER COUNTY



TRENTON



WITH HEALTH INSURANCE COVERAGE

PRIVATE HEALTH INSURANCE

PUBLIC COVERAGE

NO HEALTH INSURANCE

⁷ US Census Bureau
Ibid

There are a number of Federal and State initiatives aimed at curbing health related issues by increasing food access to low-income households. The Supplemental Nutrition Assistance Program (SNAP) is the most widespread supplemental nutritional program in the United States. Approximately 22% of Trenton’s households are recipients of SNAP; 53.8% of households with children under the age of 18 receive food assistance. In addition to SNAP, the U. S. Department of Agriculture’s (USDA) Food and Nutrition Services maintains a number of programs that aim to end hunger and obesity through nutrition.

The State of New Jersey has also acknowledged that nutrition-related issues such as obesity and diabetes have had severe consequences on its population’s quality of life and health care spending. In response to these issues, the State has created the New Jersey Food Access Initiative (NJFAI) to expand access to

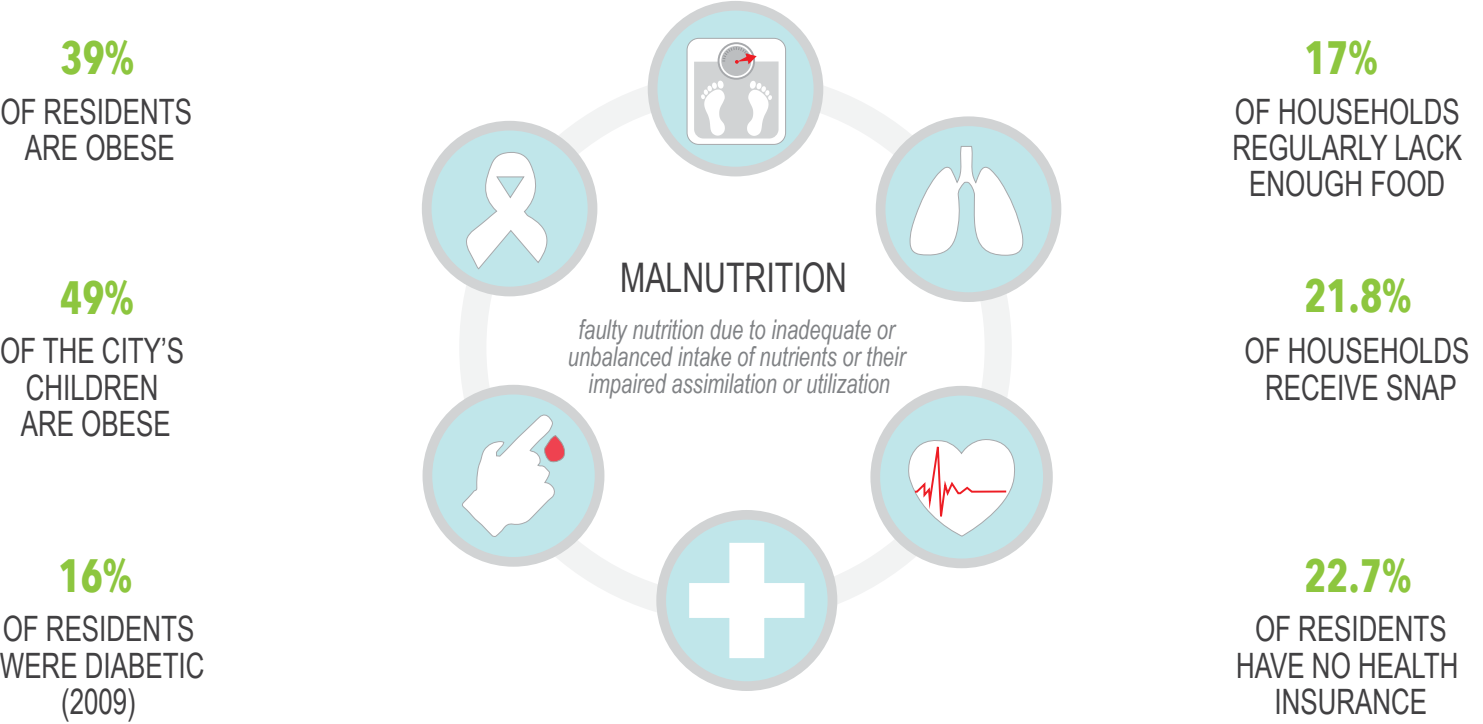
healthier food options in low-to-moderate income (LMI) communities by providing financing opportunities for food retail projects. The State’s Department of Health has also engaged in outreach and nutritional education. City and county governments have yet to develop large-scale programming, laws or any other initiatives that significantly address accessibility to food and improve the overall health of residents. The image bellow shows health related data that has been associated with diet (lack of access to healthy foods).

County and State Initiatives

Both the State of New Jersey and Mercer County have made concerted efforts to help revitalize the capital city. The State’s Department of Community Affairs has created Urban Enterprise Zones (UEZs) to encourage businesses to develop private sector jobs and stimulate the local economy through a combination of public

Health Statistics

OTHER INDICATORS



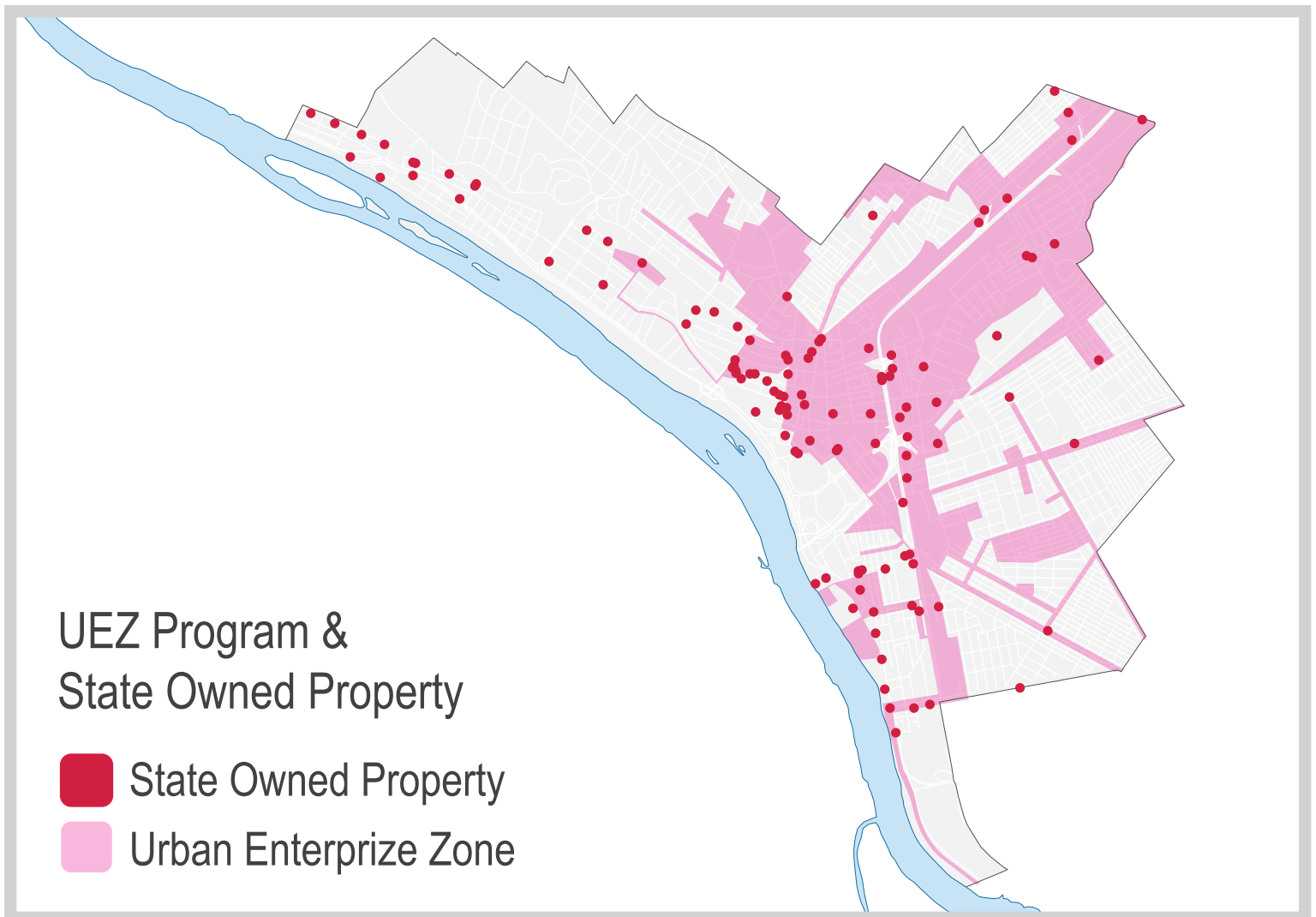
Source: Trenton Health Team, New Jersey Childhood Obesity Survey, New Jersey Partnership for Healthy Kids.

The Center for Disease Control and Prevention estimates that the **direct cost** (medical care) and **indirect cost** (lost productivity and early mortality) of **diabetes** in New Jersey is more than **\$4 billion** annually.

and private partnerships. Designated UEZs have been created within Trenton, and businesses participating in the program enjoy tax benefits such as tax exemption on capital equipment purchases and a one-time \$1,500 tax credit for each new permanently full-time employee hired. The State has also approved Foreign Trade Zone (FTZ) status for Mercer County. The FTZ Program eliminates taxes and tariffs on processed goods intended for export. New Jersey's Department of Health also has a number of programs that promote healthy food options. Shaping NJ is a state partnership that encourages nutrition education, physical activity and obesity prevention. Its marketing is primarily targeted towards lower income communities which suffer most from obesity for both children and adults⁹.

In 2010, Mercer County adopted a master plan for the county that encourages Farmland Preservation to encourage and support a viable agricultural economy in and around the metropolitan areas. By reserving land to support agricultural activities, residents of Trenton and greater Mercer County will have greater exposure to local healthy foods, which are currently difficult to access. The master plan also places an emphasis on increasing mobility for the county's residents. By increasing opportunities to bike, walk or take public transit to access food options, residents are given an opportunity to reverse health trends that are the result of lack of both exercise and healthy food options¹⁰.

Urban Enterprise Zone & State Owned Property



⁹ State of New Jersey, Department of Health

¹⁰ State of New Jersey, Department of Agriculture

Zoning

The City of Trenton comprises 7.65 square miles along the western shores of the Delaware River. Current zoning laws have zoned 16% of that land for business or commercial uses; 19% for industrial uses; 58% for residential uses; and 6% for mixed-uses. There are two types of business districts in Trenton. Business District A (BA), which only exists in the North Ward, encompasses the downtown business district, and does not explicitly allow or prohibit food related used outside of restaurants.

Business District B (BB), on the other hand, is found in all other wards and specifically prohibits “convenience food stores over 2,000 gross feet.” With a majority of residential districts in the

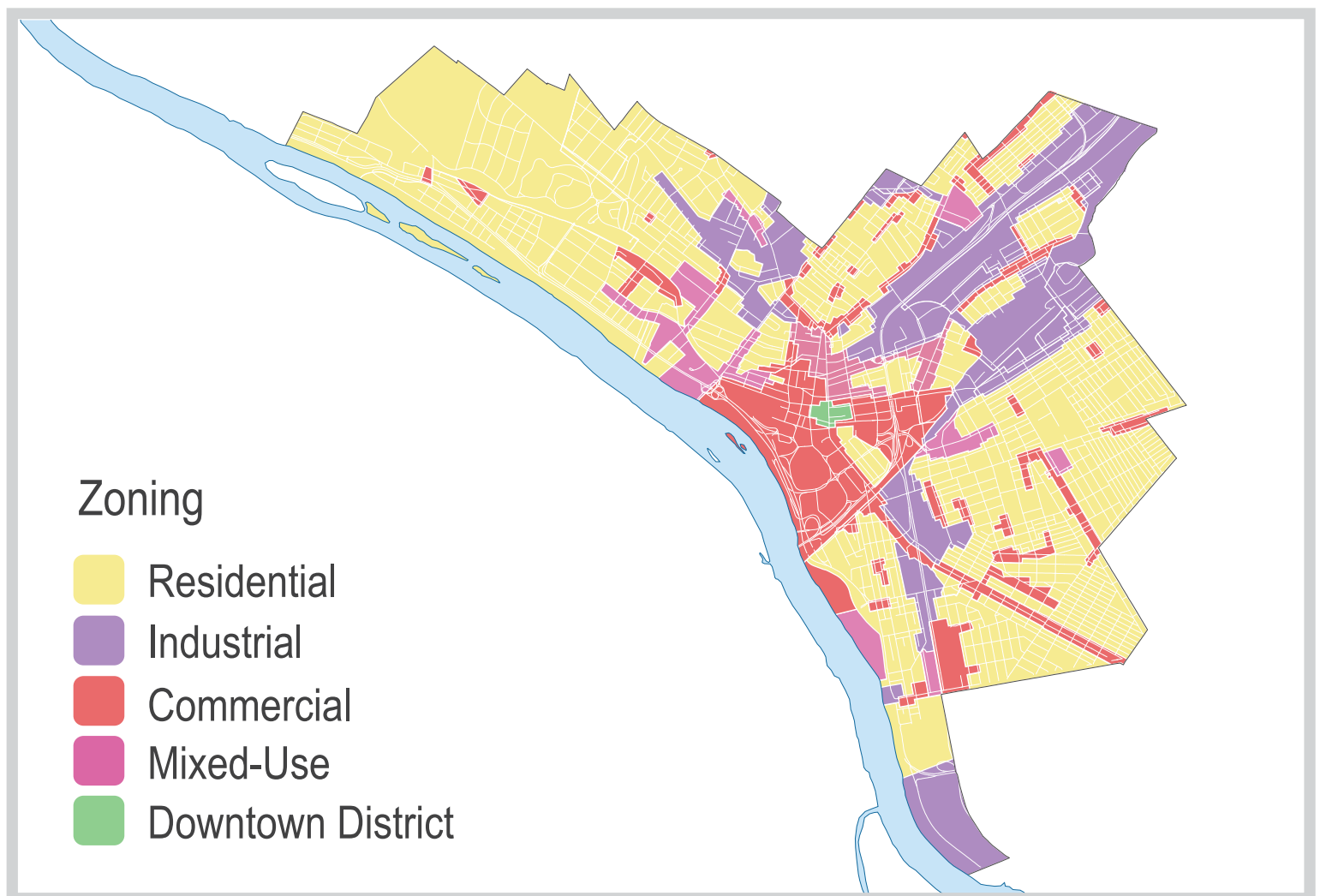
East, West and South Wards, the zoning effectively denies all residential areas in Trenton a supermarket of any significant size and variety. The zoning ordinance does not explicitly discuss uses related to food services outside of restaurants¹¹.

Food Ordinances

Trenton’s city code addresses food production and distribution in several sections.

Chapter 113 governs food handling within the city. This chapter lays out guidelines for permitting of retail food establishments, and adopts New Jersey State standards governing food stores for

Zoning



¹¹ City of Trenton, trentonnj.org

the city. These regulations, laid out in New Jersey Administrative Code, Title 8, Chapter 24, set standards for storage, refrigeration, preparation, and labeling of food and is concerned primarily with sanitation and disease prevention.

Chapter 206, Article 7 allows for the sale of food from vehicles (food trucks) with a handful of basic restrictions, including refrigeration and protection of food from pests.

Chapter 237 allows for the presence of slaughterhouses within the city and establishes the governing standards thereof.

With regards to poultry, Chapter 21, Article III, deals with the keeping of birds and animals within the city. In particular, this section states that birds and animals may be kept so long as odors and sounds do not create a nuisance for nearby residents. Keeping of birds and animals is subject to the issuance of a license by the Health Officer.

The City Code is silent on the keeping of bees¹².

Vacant Properties

Data provided by ISLES lists over 3,300 vacant or abandoned properties, or slightly more than 10% of all properties in the city. Of the over 1,000 city-owned properties that are vacant or abandoned, approximately 200 are tax lien foreclosures. While foreclosed properties are located throughout the city, there tend to be higher concentrations of vacant city-owned properties in the South Trenton, Humboldt Sweets, Ewing Carroll and Wilbur neighborhoods. Nearly 2,500 buildings are known to be vacant in the city, many in the aforementioned neighborhoods, as well as in Central West, Stuyvesant/Prospect, East Trenton and North Trenton.

Data assembled by the U.S. Department of Housing and Urban

Development (HUD) for its Neighborhood Stabilization Program 2 (NSP2) created a vacancy/foreclosure risk score for Census Tracts, ranging from 1 for the lowest risk neighborhood and 20 for the highest risk neighborhoods. The average risk score for Trenton's Census Tracts, excluding the Census Tract containing the New Jersey State Prison, was 18.39, indicated an extremely high risk for vacancy and abandonment. In 2009, HUD estimated the city's residential foreclosure rate to be 9.8%. This figure is roughly on par with that of other New Jersey urban areas; Camden and East Orange each had an estimated foreclosure rate of 11.1%, while Irvington had a 10.6% rate ¹³.

Agricultural Assessment

Within the 100 mile radius around Trenton, 65 counties from 6 different states were captured to define the local food shed around the city. Most importantly, any food activity generated by the two largest metropolitan areas anchoring the region would be captured to provide appropriate context for the assets mapped in Trenton. In 2013, the US Census Bureau recorded 32,336,915 people reside within the food shed. That is just over 10% of the entire US population of 316,112,839¹⁴. Total land area in the 65 counties totaled 29,509 square miles (or 18,885,824 acres) or just 0.84% of the total land area for the United States. That is 10% of the country's population living on just under 1% of the total land area available. That translates into a population density of 1,095.8 people per square mile. Nationally, that figure is 89.5 people per square mile, making this portion of land, one of the most densely populated in the United States¹⁵.

Of those 29,509 square miles that make up the local food shed, the USDA reported in the 2007 Agricultural Census that 6,966 square miles (or 4,458,172 acres) were determined to be agricultural lands. That means that just 24% of the total land area within the 100 mile food shed was used for actually growing any food or food products. Nationally, 40% of the 3.7 million square miles (or 2,379,964,160 acres) are designated for agricultural uses¹⁶.

¹² Ibid.

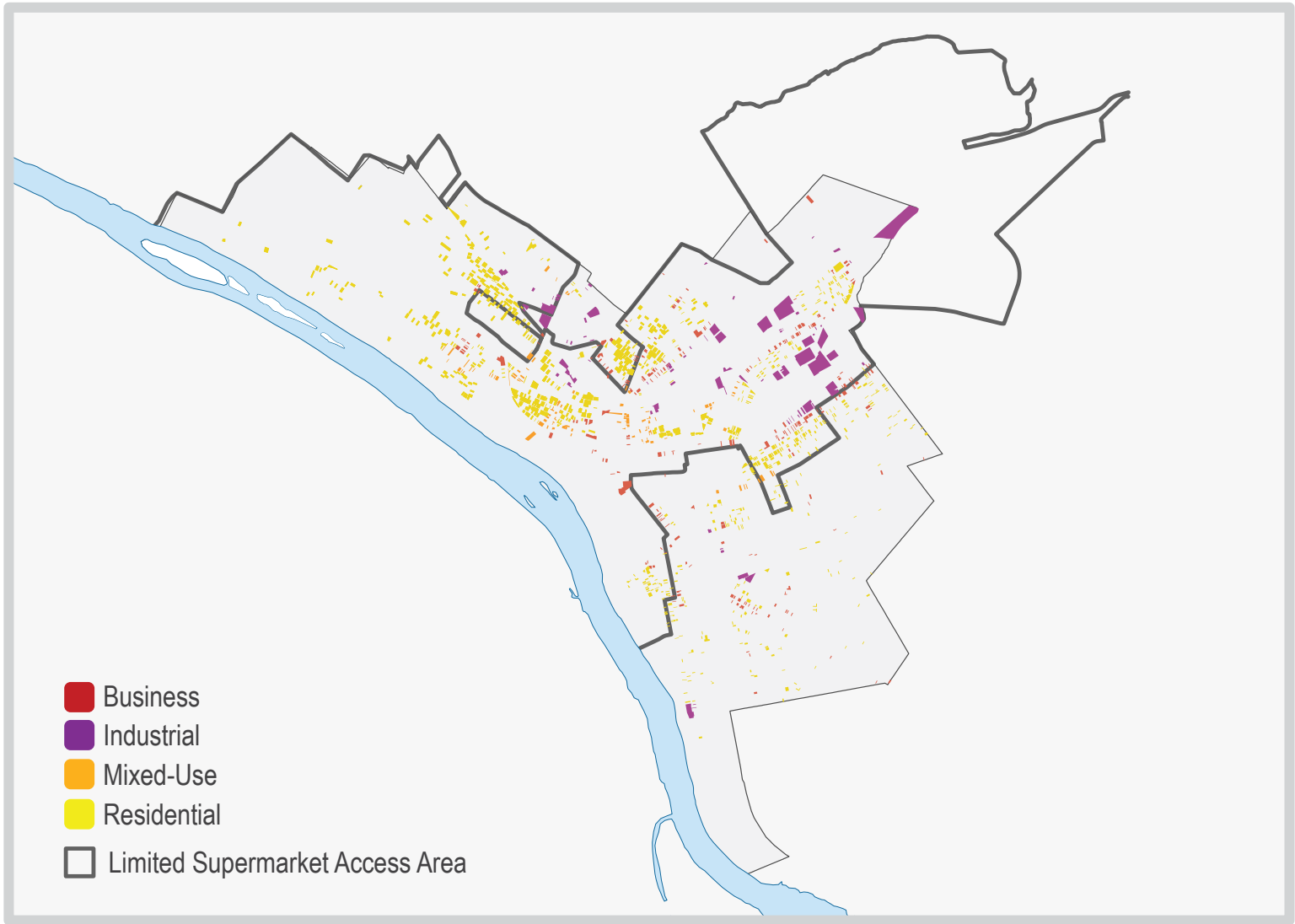
¹³ HUD User

¹⁴ U.S. Census Bureau. U.S. Department of Commerce. State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits

¹⁵ Historical Highlights: 2007 and Earlier Census Years. 2007 CENSUS OF AGRICULTURE - UNITED STATES DATA USDA, National Agricultural Statistics Service

¹⁶ Historical Highlights: 2007 and Earlier Census Years. 2007 CENSUS OF AGRICULTURE - UNITED STATES DATA USDA, National Agricultural Statistics Service

Vacant and/or Abandoned Properties



Within the land area designated for agricultural uses in Trenton’s local food shed, there were 40,356 farms in operation, which produces a total of \$6.26 trillion on commodity sales¹⁷. Nationally, the USDA reported just over 2.2 million farm operations in the entire country, meaning that just under 2% of the country’s farms are located within Trenton’s food shed. The total commodity sales

Farm Operations

State	Farm Operations - Acres Operated	Farm Operations - Number of Operations	Commodity Totals - Sales Measured in \$
PA	2,250,004	21,429	\$ 3,124,949,000
NY	358,846	2,985	\$ 503,907,000
NJ	733,450	10,327	\$ 986,885,000
MD	566,616	2,759	\$ 523,732,000
DE	510,253	2,546	\$ 1,083,035,000
CT	39,543	310	\$ 37,285,000
Total	4,458,712	40,356	\$ 6,259,793,000

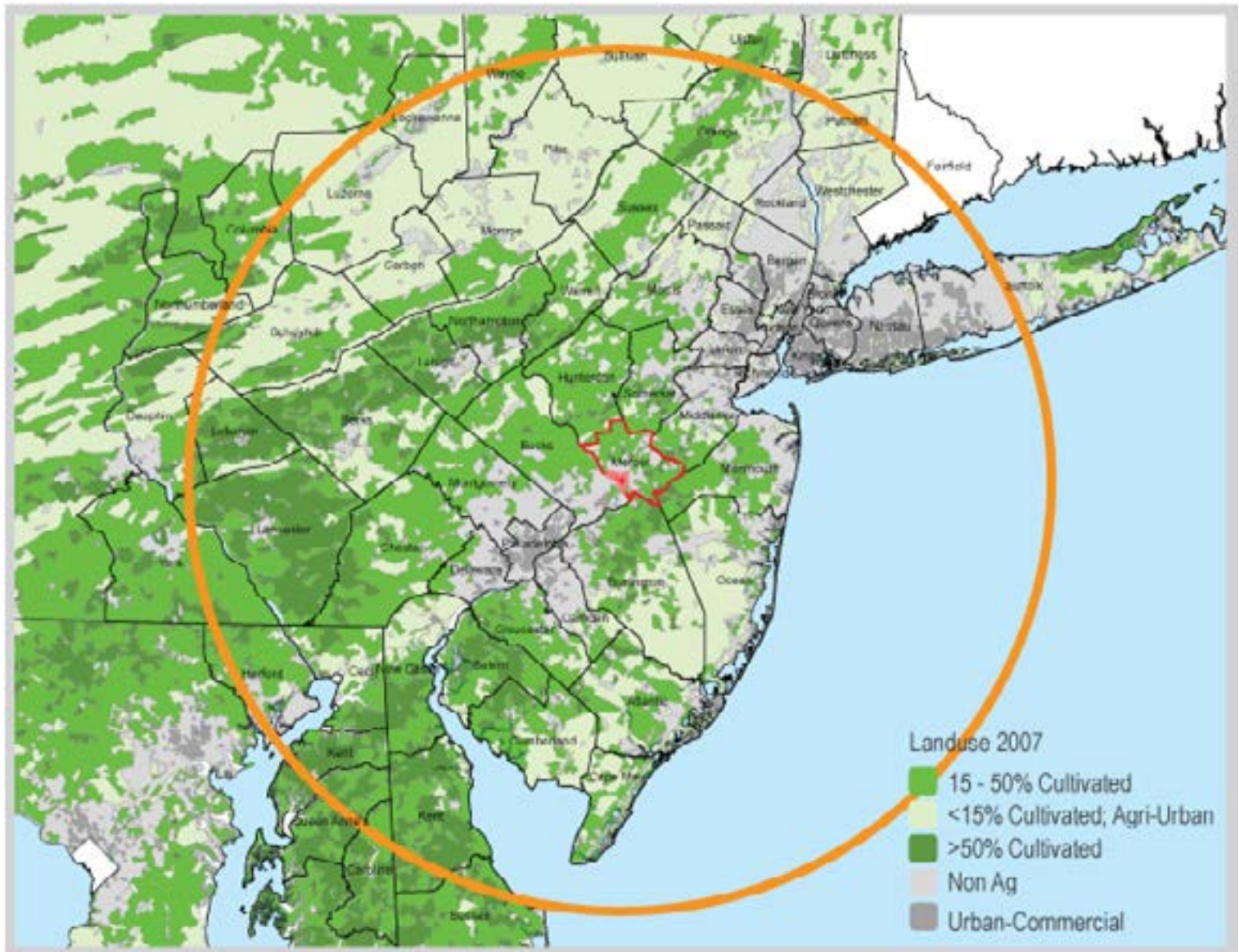
¹⁷ 2007 CENSUS OF AGRICULTURE - UNITED STATES DATA . USDA, National Agricultural Statistics Service

recorded for the entire country totaled, \$297 trillion, meaning the local food shed accounted for just about 2.1% of total commodities sales in 2007 ¹⁸.

This undoubtedly creates a considerable amount of strain on the local food system to which Trenton belongs. According to the Delaware Valley Regional Planning Commission and the USDA, the total agricultural land needs per capita in acres is 1.23 ¹⁹. With

32,336,915 people in the 100 mile food shed, that means there should be 39,774,405 acres of agricultural lands to adequately meet demand for the population. Instead, there are just 4,458,172 acres, leaving a deficit of agricultural lands of 35,316,233 acres within the food shed. Much of what is consumed by residents in the food shed is, in fact imported from other parts of the country and world.

Census of Agriculture



¹⁸ 2007 CENSUS OF AGRICULTURE - UNITED STATES DATA . USDA, National Agricultural Statistics Service

¹⁹ Philadelphia Food System. The Delaware Valley Regional Planning Commission. 2010.

Freight Analysis Framework

The Federal Highway Administration created the Freight Analysis Framework (FAF) from various data sources to better understand and analyze freight movement among states and major metropolitan areas. Based on literature reviews, the local food economy of Trenton has been defined as a 100 mile radius around the city. Connecting the six states and 65 counties that constitute the local food system around Trenton are 12,122 miles of highway in which freight is transported in and around the city. That represents roughly 7.35% of the 165,000 miles of total national highway network ²⁰. The focus of this analysis is placed on truck and highway transportation because most perishable items have been found to be trucked by truck ²¹. The purpose of this analysis is to analyze the greater distribution network within the 100 mile food shed of Trenton. Better understanding the movement of food commodities in and around the city of Trenton allow for a more comprehensive understanding of the food activity in New York or Philadelphia is driving the local food economy around Trenton. Another purpose of this analysis is to provide information and data on the feasibility for Trenton to capture the food-centered economic activity around the city.

The FAF records 43 different types of commodities being shipped around the United States. Seven of those commodities are food related and have been isolated for the analysis conducted in this report.

Those commodities are the following

- 1 – Live Animals and Live Fish

- 2 – Cereal Grains
- 3 – Other Agricultural Product
- 4 – Animal Feed and Products of Animal Origin
- 5 – Meat, Fish, Seafood and their Preparations
- 6 – Milled Grain Products and Preparations, Bakery Products
- 7 – Other Prepared Foodstuffs and Fats and Oils

Most importantly the 100 miles captures the two major food activity centers of New York City and Philadelphia. In 2009, 52.2 and 41.2 million metric tons were recorded by US Customs officials, making their seaports the 1st and 2nd largest ports along the US Atlantic coast, respectively ²². Between the six states that share in Trenton’s local food economy, the Federal Highway Administration recorded total freight activity of over 2.8 billion tons of food commodities in 2007 along the vast network of highways, bridges and tunnels ²³. In addition to State information, the FAF is further broken down into major metropolitan regions.

Between the two major metropolitan regions of New York City and Philadelphia, the FHWA recorded just under 3.6 billion tons of food related commodities being trucked or trained in 2007 domestically. The value of that trade was \$6 trillion, or 6.2% of the two metropolitan areas’ combined total food commodity freight activity of \$96 trillion. This means that 93.8% of New York and Philadelphia’s remaining food commodities are shipped outside of these metropolitan areas, including domestic and foreign destinations. Between the two metropolitan areas, Philadelphia was most active, accounting for 61% of the total activity between the two metropolitan areas.

Freight Analysis Framework

2007 Metro Region to Other Metro Regions Within	Thousand Tons	Millions of \$
New York to Philadelphia	1,401.54	\$2,334.59
Philadelphia to New York	2,214.45	\$3,642.05
Total	3,616.00	\$5,976.64

¹⁸ 2007 CENSUS OF AGRICULTURE - UNITED STATES DATA . USDA, National Agricultural Statistics Service

¹⁹ Philadelphia Food System. The Delaware Valley Regional Planning Commission. 2010.

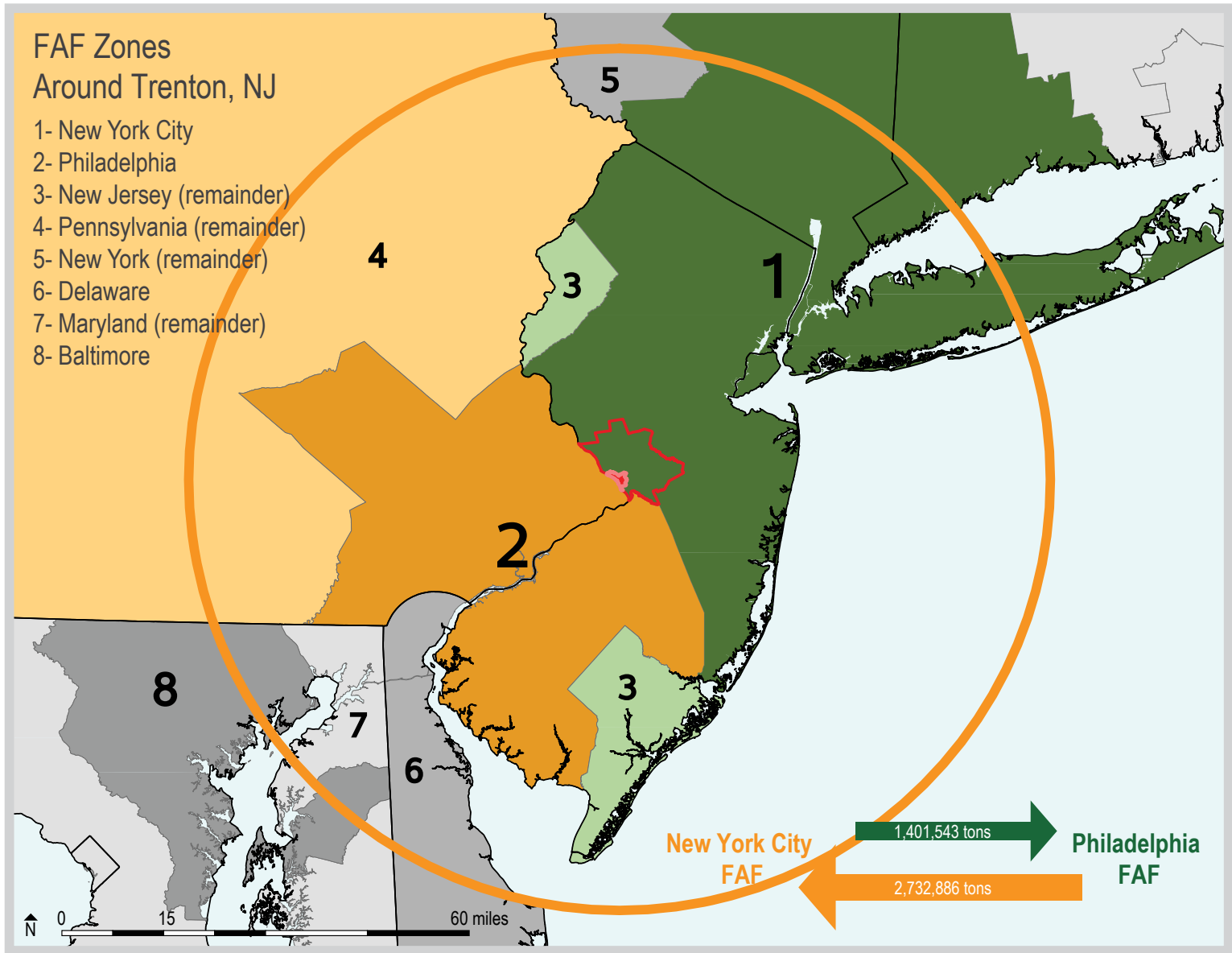
²⁰ Freight Analysis Framework. F3. 2007. US Federal Highway Administration.

²¹ Greater Philadelphia Food System Study. Delaware Valley Regional Planning Commission. January 2010. Part 2 – Food Distribution page 72.

Although the FAF provides the most comprehensive data available to track the movement of food commodities within the US, there are certainly limitations that exist and must be noted. The greatest limitation of the FAF is that the aggregated data only tracks the movement of freight, not consumption of the commodities. It is also important to note that double counting of the commodities does occur. For example, apples grown within New Jersey that are shipped to a processing plant in New Jersey would

be counted once. Once they are processed and shipped out as apple sauce or apple juice, those apples would be counted again. Thru-movements between metropolitan areas are not recorded unless commodities are unloaded and then reloaded post-production. The geographic regions outlined by this survey are also not consistent with other US data collecting surveys and initiatives, making it difficult to compare the FAF to other data sets.

Freight Analysis Framework



²² RITA Bureau of Transportation Statistics. US DOT Research and Innovation Technology Administration. Atlantic Coast U.S. Seaports Fact Sheet. October 2010.

²³ FWHA. Freight Analysis Framework. FAF3 State Database with forecast through 2040. 2007

Methodology

Literature Review

The Trenton Food Environment

In preparing this memo, the NYU team reviewed existing studies on food issues for Trenton and New Jersey. The literature underscored a strong need for supermarkets in New Jersey's urban areas, and in Trenton in particular. Studies demonstrated that access to affordable, quality food, as may be offered in a mid-range supermarket, is consistently lower in low-income and minority neighborhoods, where corner or convenience stores and fast food restaurants offering low-nutrition foods often fulfill a significant portion of residents' food needs ²⁴.

Furthermore, staple foods, such as milk, are typically more expensive in corner stores. Convenience stores are typically much more accessible to residents due to their sheer abundance and their location in residential neighborhoods. Conversely, access to supermarkets is frustrated by inconvenient location and lack of automobile access for residents. Supermarkets may be far from low-income neighborhoods, or may be located where physical barriers, such as large roads and parking lots, prevent them from being accessed easily on foot ²⁵.

Studies also stressed a correlation between low incomes, lack of food access, and obesity and overweight rates. "The lack of access to supermarkets," concluded The Food Trust, "is a problem in many neighborhoods throughout New Jersey, especially in lower-income areas where the incidence of obesity is alarmingly high." ²⁶

A full list of references is provided at the conclusion of this report.

Data Sources

Many food system assessments and food studies use some proprietary data source to compile a database of food assets of interest. The United States Department of Agriculture's 2009 Report to Congress, for example, used supermarket data from Trade Dimensions TDLinx, a product of the Nielsen Company, as well as a directory of stores accepting SNAP benefits ²⁷. A study funded by the U.S. Treasury Department's Community Development Financial Institutions Fund also used Trade Dimensions, while noting that past researchers have also used paid proprietary sources such as Dun & Bradstreet, InfoUSA, or ReferenceUSA, as well as free sources such as Yellow Pages ²⁸. A study by the Center for Disease Control and Prevention gathered a listing of grocery stores from InfoUSA, fast food stores from NavTeq database, and convenience store information from the Homeland Security Information Program database ²⁹.

This study utilized the ReferenceUSA database to compile a list of food establishments. ReferenceUSA, a subsidiary of InfoUSA, is a continuously updated proprietary research database that provides a wide range of business information, including company name, location, annual sales volume, employee size, and industry codes for over 20 million U.S. Businesses. Entries are verified against over 5,000 public sources, and the company places over 26 million phone calls annually to confirm its listings ³⁰. Data was collected by the Capstone team between January and February of 2014 ³¹.

Additional data sources include (but are not limited to) the U.S. Census Bureau, Isles Inc., Rutgers, Trenton Department of City Planning, and Department of Health, New Jersey Department of Transportation, and PolicyMap/The Reinvestment Fund.

Production, distribution, wholesale and retail food establishments were identified by their primary North American Industry Classification System (NAICS) code for varying geographical ranges.

²⁴ The Food Trust, Need for More Supermarkets in New Jersey

²⁵ Akbar et. al, 2011, Food Security in Trenton

²⁶ The Food Trust, Need for More Supermarkets in New Jersey

²⁷ USDA: Access to Affordable and Nutritious Food

²⁸ TRF (US Treasury), 2010 Searching for Markets

The list of retail establishments from ReferenceUSA was supplemented with a list of Retail Food Establishments provided by the City of Trenton Health Department, and cross-checked against an online YellowPages and New Jersey Business Finder (business-finder.nj.com) search for “Supermarkets” and “Grocery Stores” in Trenton.

Existing literature on food asset studies indicates that “studies comparing store-location data from Dun and Bradstreet, InfoUSA and state government registries have found discrepancies among the datasets.”³² Since the geographical area under consideration was relatively constrained, direct observation, mostly through Google StreetView, with some in-person verification, was used to reconcile discrepancies in the data.³³

²⁹ DHHS, 2011, Children’s Food Environment State Indicator Report, 2011

³⁰ <http://www.referenceusa.com>

³¹ All data collected by the Capstone Team was gathered in a systematic manner to insure that the data is valid, accurate, current, and relevant. All reasonable efforts have been made to ensure the quality and integrity of the data. Any omissions of food assets and/or data were unintentional.

³² The Reinvestment Fund (US Treasury), 2010, Searching for Market

³³ See Appendix A: *Limitations of Data*



Food Assets

Assets

DEFINING FOOD ASSETS

The food system of a given place can be broken down along the production and consumption spectrum:

- At the level of raw materials and production, the food system includes agriculture and crop and animal production, as well as food manufacturing and processing.
- Food wholesalers and distributors, ranging from general grocery and frozen food wholesalers to meat, poultry, fish and produce wholesalers, then provide a link to local retail establishments.
- Local retail establishments fall into many different categories, including supermarkets, grocery stores, convenience and corner stores, take-out or limited-service restaurants, and other formal or full-service restaurants. Nontraditional “point-of-purchase” food assets at the local level also include food pantries, churches and schools.

Geographical boundaries were defined based on a combination

of factors. Guidelines on how to conduct geo-spatial analysis and to determine appropriate boundaries were taken from a series of literature reviews and best practices research, including a USDA asset map toolkit. A more specific breakdown of geographic boundaries considered for each category of food asset follows.

Although food in Trenton is undoubtedly sourced from throughout the United States and even internationally, national-level data on food production and distribution is outside the scope of this mapping exercise. Rather, understanding how Trenton’s food system relates specifically to the food systems of the New York and Philadelphia metropolitan areas is critical in understanding the food system in its entirety. Based on information gathered from the literature review, this report examines assets at no greater than a “community scale,” defined as “an area small enough to drive across within two hours,” or roughly 100 miles³⁴. This approach conforms to that taken by The Greater Philadelphia Food System Study, a landmark report on food security, which also used a 100-mile radius for its examination of the Philadelphia foodshed³⁵. Businesses engaged in crop production, processing and distribution were considered for this geographical scale.

For retail businesses, such as supermarkets, grocery stores, convenience stores, and restaurants, as well as food wholesalers

³⁴ Wilkingon and Van Seters, 1997

³⁵ The Greater Philadelphia Food System Study.

and food manufacturers, the Capstone Team collected data for Mercer County and for the City of Trenton itself. This boundary was used to capture all possible food and nutritional resources available to the residents of Trenton.

RAW MATERIAL

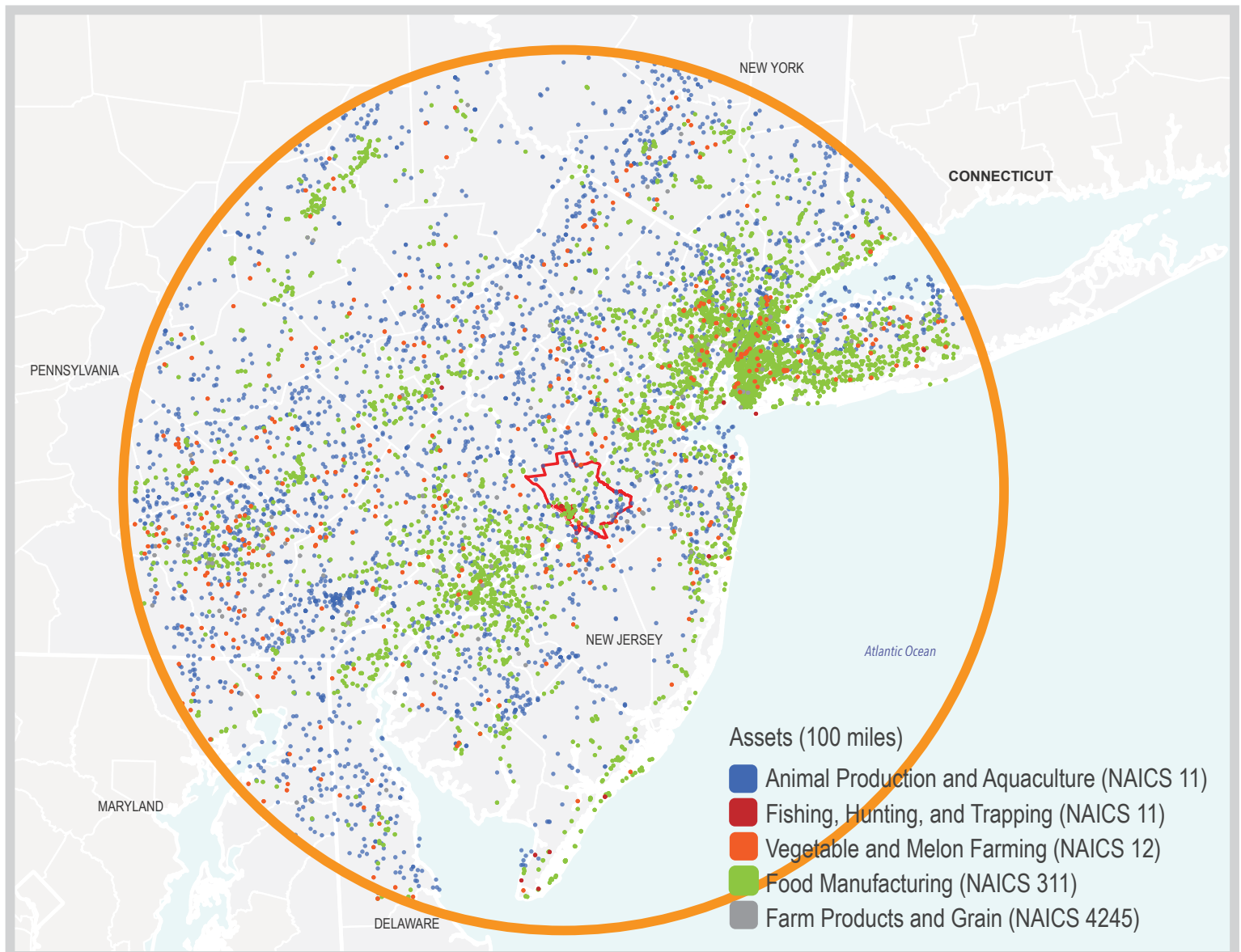
Agriculture and Crop/Animal Production

These assets include a wide variety of “farms, orchards, groves,

greenhouses, and nurseries, primarily engaged in growing crops, plants, vines, or trees and their seeds”³⁶ for food, as well as ranches and farms that raise animals and sell them or their products for food.

Agriculture and Crop/Animal Production NAICS codes: 1111, 1112, 1113, 111411, 111419, 111930, 111991, 111992, 111998, 1121, 1122, 1123, 1124, 1125, 112910, 1141.

Assets (100 miles)



³⁶ Ibid.

PROCESSING

Food Manufacturing

Establishments in this group are primarily engaged in the transformation of livestock or crops “into products for intermediate or final consumption,”³⁷ typically for sale to retailers and wholesalers. They include mills, preserving and processing plants.

Food Manufacturing NAICS codes: 3112, 3113, 3114, 3115, 3116, 3117, 3119

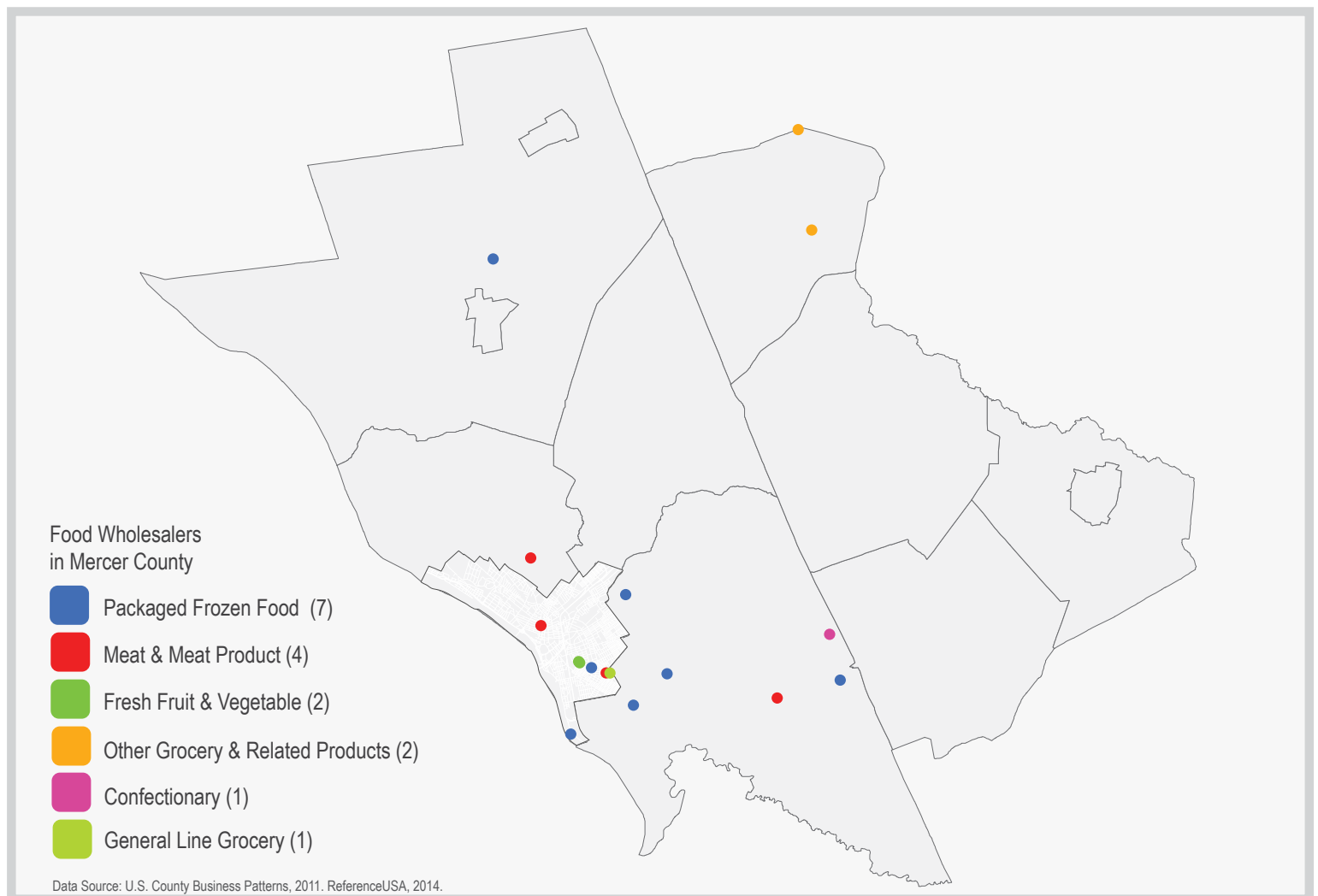
DISTRIBUTION

Wholesaler

Wholesalers include both large, warehouse-like centers that sell bulk items directly to consumers and distribution centers that sell to more traditional retail stores. Those stores that sell directly to consumers require an annual membership fee and thus require a large upfront investment made up for in savings realized over the rest of the year by shopping in bulk.

Wholesalers NAICS codes: 4244

Distribution Centers



³⁶ Ibid.

RETAIL

Grocers

Terms such as ‘supermarket,’ ‘grocery store,’ and ‘food store’ are frequently used interchangeably in everyday language. Prior studies offer guidance on important characteristics for consideration, but there is no uniform approach to categorization. Many definitions rely on a combination of what and how much food is sold at a given location. Where sales volume information is not available, the point-of-purchase system or other qualitative indicators can serve as an indicator of sales intake.

A study by the U.S. Department of Health and Human Services Centers for Disease Control and Prevention differentiated between “Healthy Food Retailers” and “Less Healthy Food Retailers.” The former included assets with a NAICS code of 445110 (“Supermarkets/Other Grocery”) with 10 or more employees, 445230 (“Fruit and Vegetable Markets”) and 452910 (“Warehouse Clubs”). The latter comprised businesses with a NAICS code of 722211³⁸ (“Fast Food Restaurants”), 445120 (“Convenience Stores”) or 445110 and 3 or fewer employees.³⁹

In contrast, the United States Department of Agriculture study Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences defined “supermarkets” as assets from the Trade Dimensions database with a sales volume over \$2 million and all departments traditionally found in a supermarket (fresh meat and poultry, produce, dairy, dry goods, and frozen foods). This report notes that the \$2 million figure is an industry standard dating from at least 1980, and has not been adjusted for inflation since that time. This definition, then, is a conservative estimate, and likely captures smaller-scale retailers.

Yet another method, that used by The Reinvestment Fund, considered grocery store and supermarket entries in the Trade Dimensions database with sales exceeding \$2 million, along with warehouse and wholesale clubs, natural food stores, and military

commissaries. This report eliminated grocery stores with sales under \$2 million from its analysis. This report also notes that the average small grocery store sales volume is \$6 million annually, and the average full-scale traditional supermarket sales volume is \$12 million annually.

After a review of the use of these terms throughout food analysis literature, as well as the categorizations used by the North American Industry Classification System (NAICS), the following formal conventions have been adopted:

Supermarket

Supermarkets are large grocery retail establishments that gross more than \$12 million in sales volume annually⁴⁰. These establishments almost universally carry a full range of products, including fresh produce, frozen foods, refrigerated meat and dairy products, and dry goods. They use a checkout lane style point-of-purchase system.

Supermarkets NAICS codes: 445110

Illustrative Examples:

Food Bazaar, 635 S Clinton Avenue, Trenton

Aldi of Ewing, 1650 N Olden Avenue, Ewing

Grocery Store

Grocery Stores are similar to supermarkets in selection and layout, but smaller, grossing between \$6 million and \$12 million in annual sales volume⁴¹. Produce selection may be more limited or specialized in Grocery Stores, and the number of checkout lanes is typically fewer than in a Supermarket. Grocery Stores may also be specialized along ethnic or cultural lines. In this report, the Grocery Store category also includes specialty food stores, such as meat, fish or vegetable markets, regardless of sales volume. This approach is consistent with that found in other food studies, including studies by the UCLA Center for Health Policy Research,

³⁸ The NAICS code 722211 has since been changed to 722513 (“Limited-Service Restaurants”)

³⁹ The report does not state how Supermarkets with 4-9 employees were treated.

the Centers for Disease Control and Prevention, and the USDA, as well as with the internal logic of this report. “Other Specialty Food Stores,” which consisted mostly of Tea, Herbs & Spices stores, were not included, except for a Dairy Store (Halo Farm) and a Cheese Store (Russert’s Deli & Food Market.”

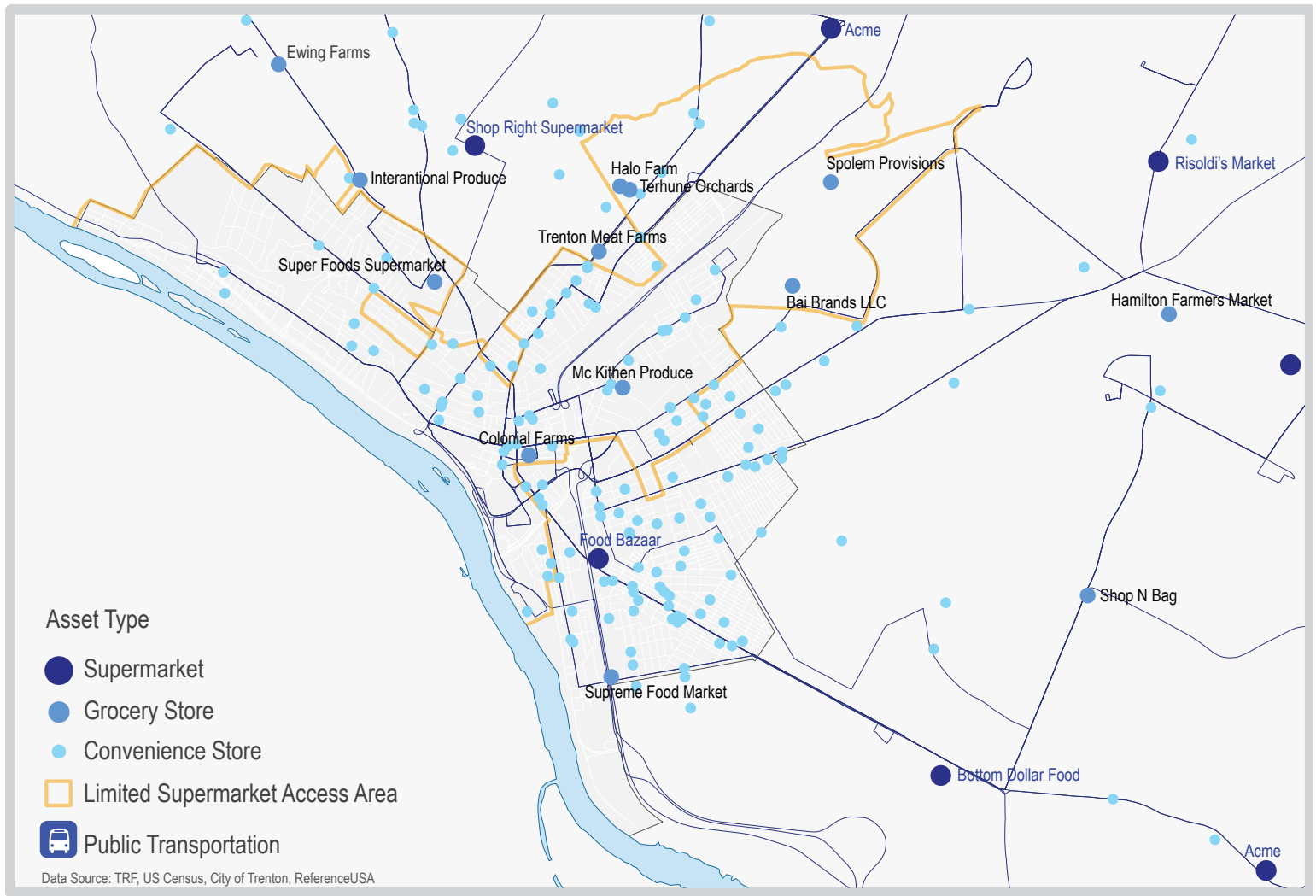
Grocery Stores NAICS codes: 445110, 4452

Illustrative Examples:
Supreme Food Market, 410 Lalor Street, Trenton
Colonial Farms, 137 E State Street, Trenton

Convenience Store

Convenience Stores are small stores (generally under 2500 square feet) carrying a limited selection of dry and processed foods. They typically do not carry produce, and typically feature an over-the-counter style point-of-purchase system. Convenience stores range from locations that may serve hot food along a limited line of groceries to locations that stock food among a wide variety of everyday items, as may be seen at gas station convenience stores, for example. Convenience Stores that offer hot food may be culturally or ethnically specialized.

Food Retailers - Supermarkets, Grocery Stores, and Convenience Stores



⁴⁰ According to The Reinvestment Fund, \$12 million is the average annual sales volume for traditional supermarkets carrying a full line of groceries, while \$6 million is the average annual sales volume for small grocery stores.

⁴¹ TRF (US Treasury), 2010

Convenience Stores NAICS codes: 445120

Illustrative Examples:

Santana Minimarket, 222 Brunswick Avenue, Trenton
Mena Rose Deli & Grocery, 801 Beatty Street, Trenton

Ultimately, the definition of assets is merely a means to indicate the salient features of a particular asset. The intention of this report is to use the terms “Supermarket,” “Grocery Store,” and “Convenience Store” to serve as indicators of affordability and nutritional quality. This approach has ample precedent; throughout existing food asset literature, supermarkets are widely used as a proxy for affordable, healthy food. In theory, the economies of scale in a supermarket lead to inherent cost-saving measures which are passed on to the consumer. Thus, for purposes of this study, Supermarkets are assumed to carry fresh produce and other nutritious foods at competitive prices, while Convenience Stores designate stores which carry low-nutrition or highly-processed foods, along with more nutritious foods at higher prices than a supermarket. Grocery Stores carry a smaller variety of foods than supermarkets, or may carry specialty foods, but generally provide more nutritious and more affordable food than convenience stores.

These assumptions are in large part borne out in empirical studies. The USDA not only finds that “analysis of price variation for similar goods across different store types shows that prices are higher, on average, at convenience stores than they are at grocery stores, and this finding is confirmed in the literature,” but also notes that the wider variety of products at grocery stores gives consumers more opportunity and choice to shop within their price range. The Treasury Department’s CDFI Fund study reports that “there are widespread assumptions that larger stores such as supermarkets sell affordable, health food, and the research...supports these assumptions.” Locally, a Trenton food security study performed by Rutgers and Isles likewise found supermarkets to be “the healthiest and most affordable food outlet.”⁴⁵

RESTAURANTS

Full-Service Restaurant

Full-service restaurants comprise establishments which “provid[e] food services to patrons who order and are served while seated (i.e., waiter/waitress service) and pay after eating. These establishments may provide this type of food service to patrons in combination with selling alcoholic beverages, providing carryout services, or presenting live nontheatrical entertainment.”⁴⁶

Full-Service Restaurant NAICS codes: 722511

Limited-Service Restaurant

Limited-service restaurants include take-out and fast-food establishments, “where patrons generally order or select items and pay before eating. Food and drink may be consumed on premises, taken out, or delivered to the customer’s location.”⁴⁷ Pizza shops, delicatessens, sandwich shops, and chain fast-food restaurants are included in this category. Retail bakeries are also included here.

Limited-Service Restaurant NAICS codes: 722512, 722513, 722514, 722515, 311811

Coffee Shop/Bakery/Other

Coffee shops and bakeries include establishments with a limited range of baked goods, either prepared on premises or delivered. Most entries in this category were Dunkin’ Donuts franchise locations. Many of these assets were listed in the data provided by the City of Trenton Health Department, and therefore no associated NAICS code was provided.

Other NAICS codes: 722XXX

⁴² See, for instance, USDA p. 6, US Dept. of Treasury p. 8

⁴³ USDA, 2009 p. 77

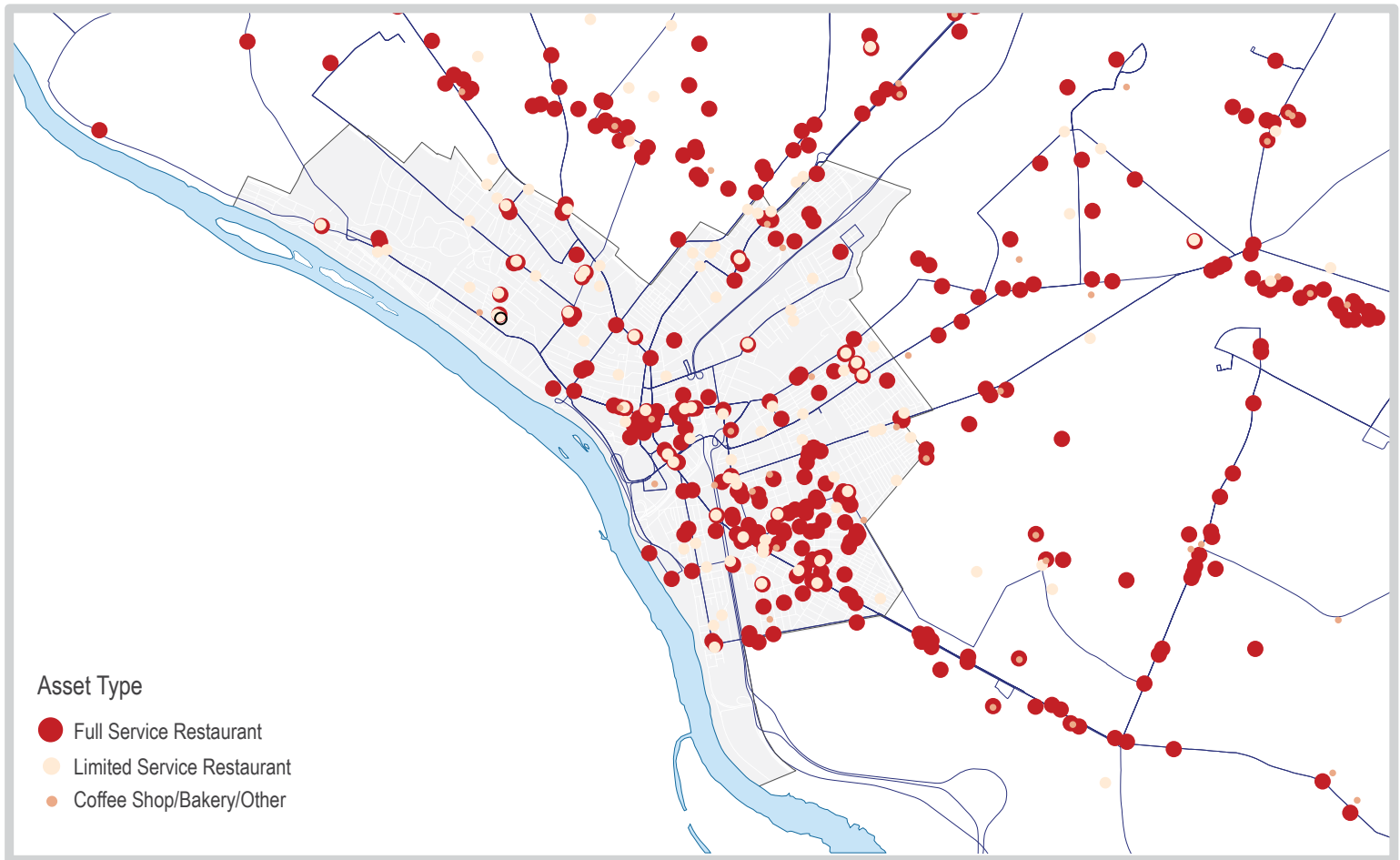
⁴⁴ US Treasury Dept. p. 8

⁴⁵ Akbar et al, 2011, Food Security in Trenton. p.6.

⁴⁶ US Census Bureau <http://census.gov/eos/www/naics/>.

⁴⁷ Ibid.

Food Retailers - Full Service and Limited Restaurant, and Coffee Shops



SUPPLY SIDE FINDINGS

Regional Perspective

Seven food asset categories were mapped within a 100-mile radius of Trenton. These include Animal Production and Aquaculture, Vegetable and Melon Farming, Fishing, Hunting, and Trapping, Food Manufacturing, Beverages, Wholesalers, and Farm Products and Grain. Food assets were mapped at the 100-mile radius to highlight nearby food distribution centers and their proximity to Trenton. Of the food asset categories mapped, Food Manufacturers (NAICS Code: 311) were found to have the highest number of sites at 5,542. The top four groups of food manufacturers are displayed in Figure 1. Of those, 71% were found to be either retail or commercial bakeries. All other Miscellaneous Food Manufacturing (6.2%) sites were found to be the next most common followed by Animal (except poultry) slaughtering (4.3%). The next

most common food asset found within the 100-mile radius were Wholesalers (NAICS code: 4244) with 4,752 establishments. Other Grocery & Related Products Merchant Wholesalers were found to have the highest frequency of sites at 31.2%, followed by Packaged Frozen Food Merchant Wholesalers at 24.6%. Poultry & Poultry Product Merchant Wholesalers had the lowest percent of sites at 1.7%.

Food wholesalers in Trenton comprise non-retail establishments that are not accessible to residents (as, for instance, Costco, Sam's Club, or other membership-based outlets would be). There are six such wholesalers within the city of Trenton, and together they employ approximately 100 people with an estimated sales volume of \$146 million. These six wholesalers represent 35% of the 17 wholesalers located within Mercer County, and they employ 58% of workers within the County's wholesaler industry.

According to ReferenceUSA, the highest grossing wholesaler in the city is ARM National Foods, which makes approximately \$67 million annually and employs approximately 30 people. ARM is listed a general-line wholesaler in the NAICS codes. The next highest sales volume wholesaler is Case Pork Roll Company, a family-owned meat wholesaler that has operated in Trenton for over 140 years.⁴⁸ According to ReferenceUSA data, Case Pork Roll company brings in \$53 million in sales volume annually, and employs approximately 25 people.

Within Trenton

The asset maps generally support the findings of most existing studies on Trenton performed to date: the city has few traditional supermarkets and grocery stores, and has a high number of convenience stores. In particular, Trenton is served by one supermarket, Food Bazaar, located in the Roebling Market, and four grocery stores, two of which are full-service stores – Super Food on Pennington Avenue and Supreme Food Market on Lalor Avenue – and two of which are specialty stores – Colonial Farms on E State St, categorized as a Meat Market, and McKithen Produce, a Vegetable Market.

To put these numbers in context, nationally, there are 20,691 supermarkets with a sales volume exceeding \$12 million, or 1 for every 15,250 people; including grocery stores as defined here, that ratio drops to 1 for every 12,150 people. In Mercer County, there is one supermarket for every 11,450 residents and a grocery store or supermarket for every 14,500 residents. In Trenton, by contrast, one supermarket serves 84,500 people, while the supermarket and two grocery stores together serve 28,150 people apiece. The number of supermarkets in the city would need to increase to five to approach the national average, and would need to increase to seven to match Mercer County's rate. At least three more grocery stores or supermarkets would need to open to match the rate at which these assets are found County wide.

The city contains 191 Full-Service Restaurants, 115 Limited-Service Restaurants, and 13 Coffee Shops, Bakeries, or Other restaurant assets.

Trenton and other locations with an abundance of low-quality foods have been described as 'food swamps.' The Centers for Disease Control and Prevention use a modified Retail Food Environment Index (mRFEI) to measure the relative 'swampiness' of a place. This Index measures the ratio of healthy food outlets to overall food outlets, and is defined as follows:

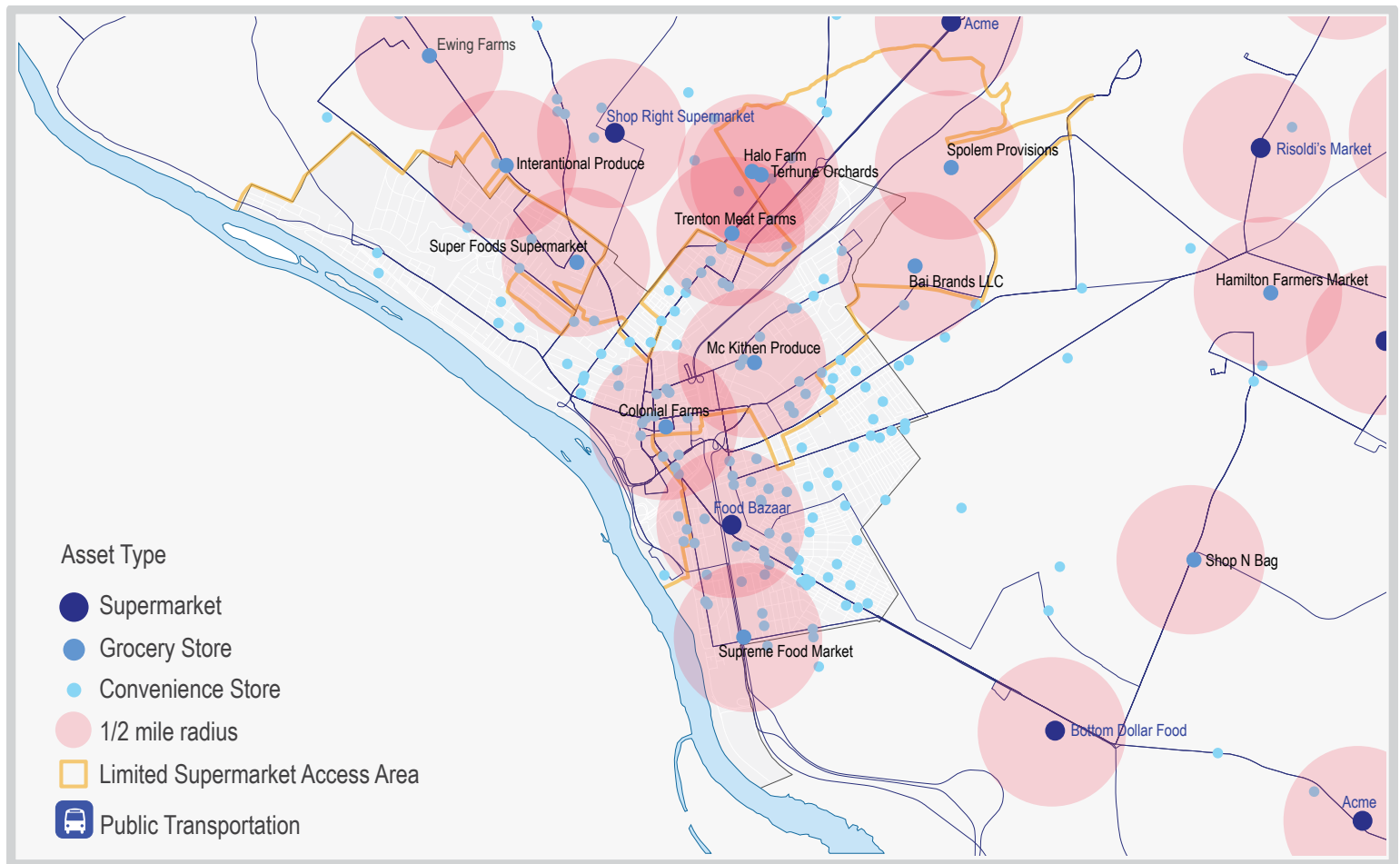
$$mREI = 100 * \frac{(\#Healthy\ Food\ Retailers)}{(\#Healthy\ Food\ Retailers + \#Less\ Healthy\ Food\ Retailers)}$$

Amongst Healthy Food Retailers, CDC counts supermarkets, grocery stores and produce stands, while Less Healthy Food Retailers include both convenience stores and fast-food restaurants. Trenton, with 5 Supermarkets and Grocery Stores, and 87 Convenience Stores, has an mRFEI of 2.4⁴⁹. That is, 2.4% of Trenton's food assets offer healthy food. In contrast, the mRFEI for New Jersey is 8, and for the United States, it is 10.

⁴⁸ <http://www.caseporkrollstore.com>

⁴⁹ The precise CDC definition uses NAICS Codes and number of employees to categorize assets as Healthy or Less Healthy. However, as noted here, while inaccuracies in NAICS and employee size reporting may even out on a larger scale, they may skew a measure for a city the size of Trenton. Since we have attempted to categorize all assets within the city accurately according to a similar logic as CDC's for this Index, we use our own asset counts for mRFEITrenton. Using CDC's definitions and counts from ReferenceUSA, mRFEITrenton = 2.6.

Food Retailers - Supermarkets, Grocery Stores, Convenience Stores and 1/2 miles Buffer





Food for Thought

Food for Thought

“The food environments of low-income populations require special consideration due to the vulnerability of the individuals as well as that of the unique social and physical setting in which they live.”⁵⁰

Physical Barriers to Access

Existing food assets cover nearly all the city. However only 19,000, or 22.5% of residents live in a block group that is within a quarter-mile radius, or five-minute walk, of a grocery store or supermarket. When considering a ½-mile radius, existing Supermarkets and Grocery Stores are accessible to 50,800 residents, or just under 60% of Trenton’s residents. Alternatively, the median distance from a residential lot to a supermarket or grocery store is .50 miles – half of all residential units are more than a half-mile from a supermarket or grocery store.

Nationally, the USDA reports that 36.8% of residents in urban areas live within ½ mile of a supermarket/grocery store nationally, while the median distance for residents to a supermarket or grocery store is .68 miles.⁵¹ However, this definition of ‘urban’ follows

the US Census definition of rural and urbanized areas, and thus includes numbers from suburban areas. Therefore, it does not provide a comparable metric for a dense urban area such as the City of Trenton.

The limited number of assets within walking distance of residential areas amplifies the need for a robust transit system, and limited access may have a particularly hard impact on the one-third of Trenton households who do not have access to a vehicle. Neighborhoods such as West End, Fisher/Rickey Perdicaris, Central West, North 25, Humboldt Sweets, and parts of Downtown all have low-income population with significant low access to vehicles⁵². The average trip for these neighborhoods to the Trenton Food Bazaar vary from 20-40 minutes by bus, plus an average walk of 0.6 miles (though walks ranged up to 1 miles), compared to not more than 10 minutes by car. A summary of travel time and distance to Food Bazaar is shown in Table 1.

⁵⁰ Gittelsohn and Sharmat, 2009, qtd. in USDA, p. 40

⁵¹ USDA

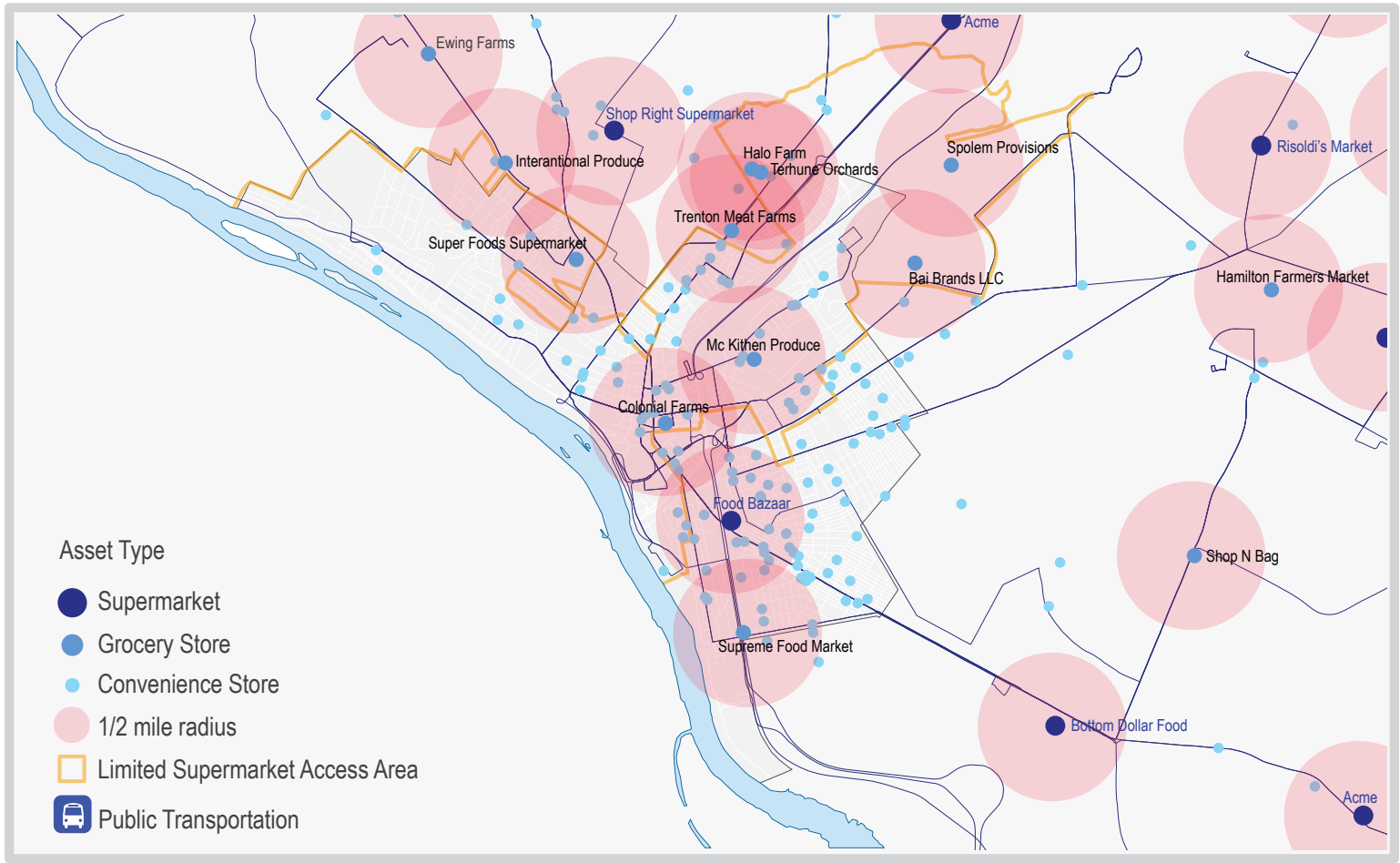
⁵² USDA Food Access Research Atlas

Table 1.

Average Travel Time and Distance to Food Bazaar				
Neighborhood	Distance (Miles)	Car Travel Time (Minutes)	Bus Travel Time (Minutes)	Additional Walk from Bus (Miles)
Glen Afton	4.8	10	48	1.5
East Trenton	2.5	8	28	0.7
Franklin Park	1.2	4	20	0.5
North Trenton	2.6	7	30	0.6
Battle Monument	2.2	7	25	0.5
Average	2.7	7.2	30	0.75

Source: Google Maps ⁵³

Food Retailers - Supermarkets, Grocery Stores, Convenience Stores and 1/2 miles Buffer



⁵³ Randomly picked trips were calculated using Google maps (average using times for one weekend day (Saturday), and one week day (Monday), at 12 and 5 pm. Trips that did not require transfer were preferred over lengthier trips that required transfers.

Trenton Circulator Bus System



URBAN
DESIGN



DEVELOPMENT



ACCESS



PARTNERSHIP

In a 2009 USDA survey, 93% of respondents used a vehicle to shop at supermarkets that were at least a mile away. Thus, while supermarkets provide the most options for fresh food, non-vehicular accessibility is a barrier. One in every three households in Trenton reports no reliable access to a personal vehicle. Public transit operated by New Jersey Transit provides an immense public utility for the residents of this city. However, as noted in the Existing Conditions section of the report, the bus lines that service Trenton do not provide efficient cross-town connectivity. The route design in Trenton resembles a hub and spoke model that offers sufficient routes in and out of the city but not necessarily between neighborhoods in the city. The Food Bazaar, the only supermarket in the city, is serviced by just 4 of the 17 lines that operate within the city.

This is a situation that is certainly not unique to Trenton. Hartford, Connecticut; Austin, Texas; Springfield, Massachusetts; Madison, Wisconsin; and Denver, Colorado are just a few examples of cities that have all reported similar food deserts or swamps in isolated communities⁵⁴. All have addressed this issue by creating some variation of a circulating bus route that connects their isolated – and, more often than not, low-income – communities to the existing healthy food assets available in other parts of the city. Policy makers in each city have identified gaps in existing transit service in relation to their limited healthy food assets. They then determined routes that would enhance service by directly connecting the neediest communities directly to those assets.

A particularly successful example is Hartford, Connecticut's L-Tower Avenue bus route that was designed as a part of the city's Jobs Access program, which directly linked low-income res-

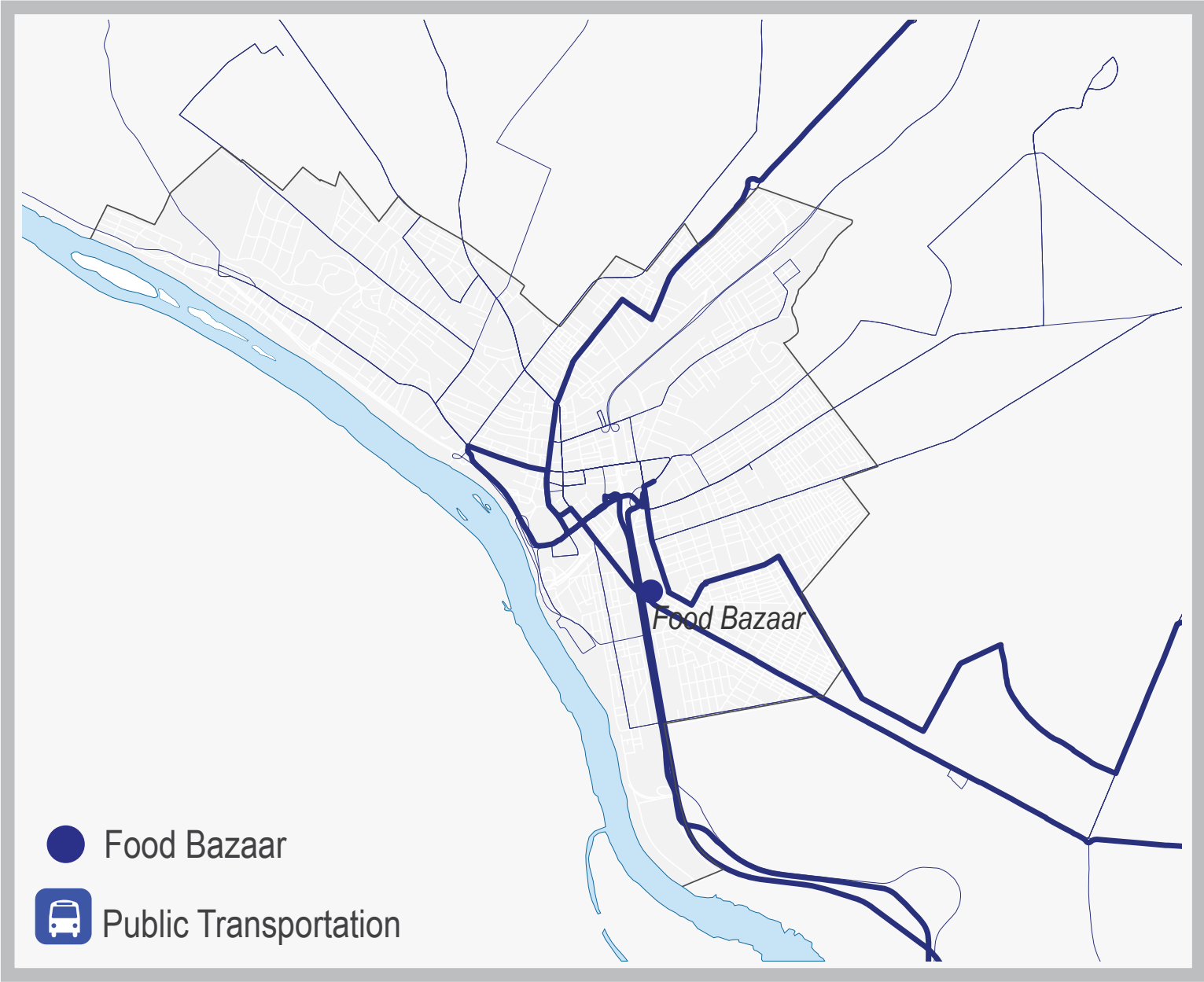
idents to job centers, medical services and retail options previously inaccessible by public transit. After a year of service, the bus-line saw ridership double, with 1/3 of riders surveyed citing grocery shopping as one of the primary reasons for using the new route. This idea is certainly not new, and has been working in Austin since 1996, when a circulator route was created to connect low-income residents in the Eastside of the city to two different supermarkets that offered healthy, whole foods.

With only 23% of the buses in Trenton currently servicing the one supermarket, there is a great opportunity for Trenton to maximize its existing assets to better service all Trentonians. This route may also extend into the Ewing Township to provide residents to an alternative route to the Shop-Rite many of them currently shop at anyway.



⁵⁴ Healthy Food for All: Encouraging Grocery Investment in Colorado. Denver Food Access Task Force. December 2011

Supermarket and Bus Routes



Urban Design

Most individuals are willing to walk five to ten minutes ($\frac{1}{4}$ to $\frac{1}{2}$ mile) to reach community assets such as shopping and transit. However, the physical attributes of a city can have a positive or negative impact on food accessibility; the way in which a city is laid out can prevent people from accessing goods⁵⁵. Accessibility is often measured by a number of metrics, including distance, infrastructure quality, topography, sense of safety and security, and the presence of interesting activities⁵⁶. Short, walkable blocks also increase the attractiveness of pedestrian transit.

Zoning and land use can segregate uses, and exacerbate accessibility issues. Large areas of Trenton are reserved for single uses, with only a few exceptions; in total, as noted above, six percent of the city's land area is devoted to mixed land use. Moreover, other districts have restrictions on the size of retail uses. As a result, existing zoning ordinances have the unintended consequence of limiting accessibility.

It is also important to account for characteristics of the environment that may pose as a real or perceived risk. Safety is an important factor, as well as quality of infrastructure, service reliability and convenience.

Walk Your City



ACCESS



PARTNERSHIP



EDUCATION

Physical characteristics of a city are crucial in terms of food access, and overall health of the population. In March 2012 Trenton adopted a comprehensive complete streets agenda that may improve accessibility for Trenton's residents in the future. Active design guidelines could also further inform necessary physical changes in the existing infrastructure.

As the city moves forward to make improvements on its streets, attention should be given to the areas surrounding Trenton's strongest food assets. The Food Bazaar in the Roebling District or the Shop Rite in Ewing have complicated barriers to accessibility. The Food Bazaar is bounded by Route 129 to the east, which is a physical and psychological barrier to the supermarket. The only viable entrance to the supermarket is by navigating through its parking lots on either Elmer or South Clinton Street.



Because access is challenging, one potential solution to put in place immediately is to use signage provided by a program called Walk Your City. The signage gives pedestrians the average walking time to reach a particular destination and QR code that gives directions for smart phone users. One of the advantages of this signage is that they can be implemented on existing road signs to

⁵⁵ UN-Habitat Global Report on Human Settlements

⁵⁶ NJ Transit Planning for Transit-Friendly Land Use A Handbook for New Jersey Communities



promote destinations. Another corollary benefit of this program is that it encourages active use of the streets, which helps improve perception and health within the city.

Attracting New Food Businesses

A critical question that merits further research is whether Trenton's lack of supermarkets is a product of high costs and barriers to entry for potential market participants, or of real or perceived lack of demand to support additional markets. If it is the former, there are policy precedents for addressing these types of barriers. Relaxation of zoning policies, government programs, financing subsidies, and proper, strategic locating of stores through enhanced market analysis have all been identified and utilized in the successful development of new supermarkets⁵⁷.

Alternative Financing



ACCESS



PARTNERSHIP



DEVELOPMENT

New Market Tax Credits, HUD Section 108 Loans, tax incentives, and various forms of low-interest financing are all mechanisms that have been used to support the development of supermarkets underserved areas⁵⁸. In Philadelphia, owners of The Fresh Grocer received \$13.7 million in New Market Tax Credits, coupled with \$4.4 million in grants, loans, and gap financing from the city to bring a supermarket to the nation's oldest African-American-owned shopping center⁵⁹.

Washington, DC took a unique approach in its 2010 Grocery Store Financing and Healthy Corner Store Programs. Besides offering grants, loans and tax credits, the city offered density bonuses to developers who included grocery stores in their Enterprise Zone development projects⁶⁰.

⁵⁷ TRF p. 6, USDA p. 112

⁵⁸ National Center for Chronic Disease Prevention and Health Promotion, State Initiatives Supporting Healthier Food Retail

⁵⁹ The Reinvestment Fund. New Market Tax Credits and Urban Supermarkets. <http://www.cdfifund.gov/what_we_do/resources/NMTC%20for%20FUND%20approval%20101911.pdf> ⁵⁹ Washington, DC B18-09667, Law # L18-0353

⁶⁰ <http://www.policymap.com.maps>

If, however, the problem is lack of demand, solutions are not as easily forthcoming. A study undertaken by The Reinvestment Fund sought both to identify areas with limited supermarket access and quantify opportunities for new food stores in underserved areas by calculating the amount of grocery retail sales leakage at the census block group level. As explained by TRF:

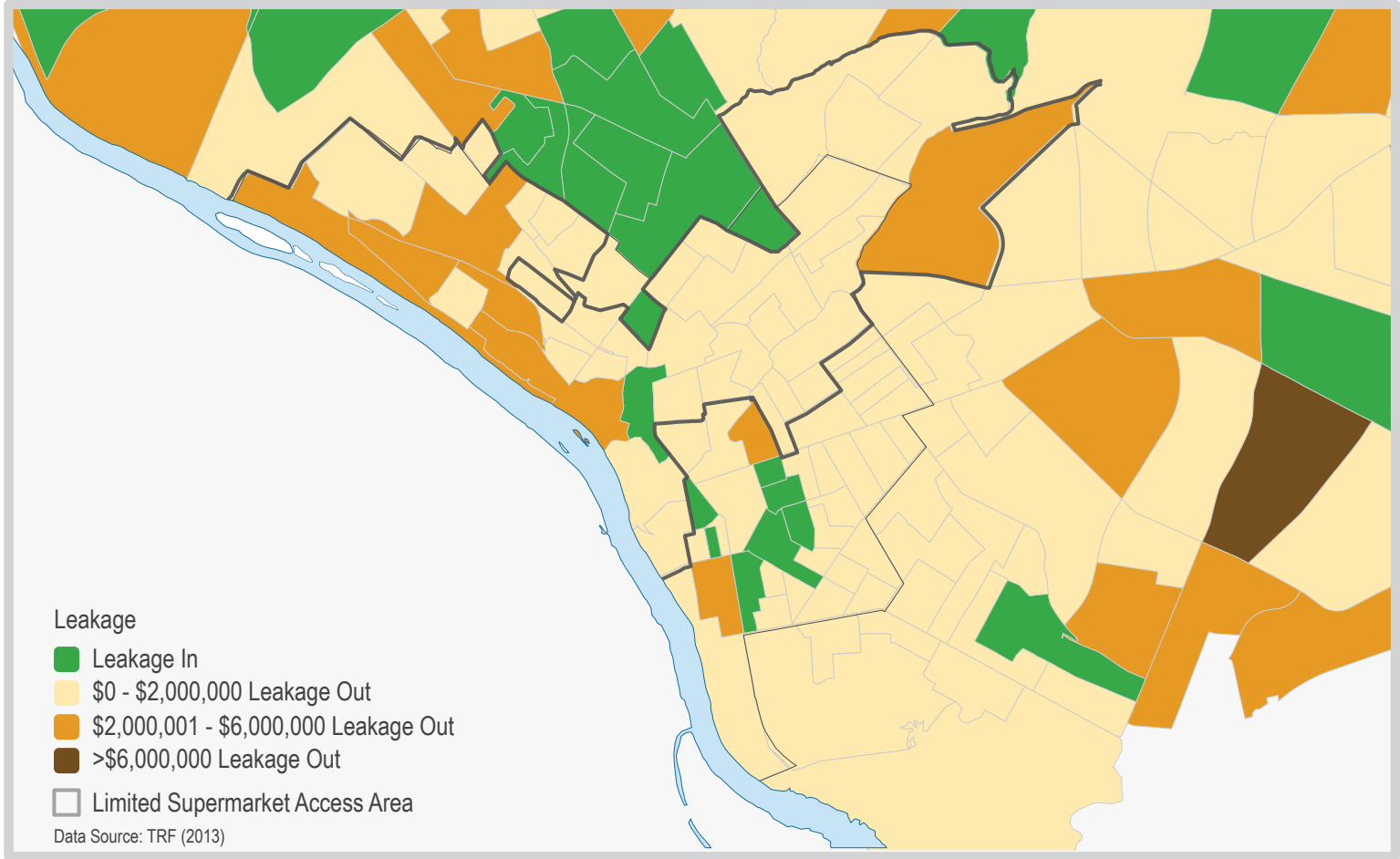
TRF estimates food retail demand in dollars for an area and then deducts the retail sales captured by existing stores. The difference in dollars represents the amount “leaked” or lost (or, in some cases, not “leaked” or lost). The leakage estimate is an indicator of store viability for an area⁶¹.

According to this study, underserved areas with greater than \$6

million in leakage could potentially support a grocery store, areas with greater than \$12 million in leakage could potentially support a supermarket, and areas with greater than \$24 million in leakage and an existent supermarket could potentially support an additional supermarket.

TRF also defined Limited Supermarket Access areas throughout the country as areas where residents of a Census Block Group of a given median income, density and car ownership rate had a more difficult time accessing (that is, were located farther from) supermarkets than higher-income residents living in block groups of a similar density and car ownership rate. TRF defined a Limited Supermarket Access (LSA) area for the Trenton metropolitan area whose total grocery retail leakage was \$51,000,000, suggesting

Leakage



⁶¹ <http://www.policymap.com.maps>

the market may potentially support two additional supermarkets within the LSA⁶².

Nevertheless, although purchasing power may be present, demand, or the actual desire and will to purchase healthy food, is not so easily demonstrated. The USDA posed the question, “[If] better access to affordable and nutritious food is provided, will people buy these foods?” They concluded in 2009 that “studies show small increases or no changes in consumption of healthy

foods in areas where access was improved,” findings that more recent research has supported⁶³. One explanation for this may be that demand for nutritious food is hindered by the time associated with preparation of fresh food. It is also plausible that individuals who have not historically had access to fresh foods and thus are not accustomed to them will not suddenly make a major dietary switch. In this case, change in food consumption may come with generations of access. Education, public health campaigns, food-related events, and other incentives are important as well.

More than a Produce Aisle



A recent study by the London School of Hygiene and Tropical Medicine found that residents of a neighborhood in Philadelphia where a supermarket recently opened reported no change in produce consumption. A UCLA public health researcher, Alex Ortega, has worked with corner stores to provide healthier foods in low-income communities in order to help combat this phenomenon⁶⁴.

This is not merely an academic notion; corporate entities have recognized it as well. Peter Becker, the Senior Research Coordinator and Team Leader for the Whole Foods Market Research Team for store site selections, spoke with our team to explain Whole Foods’ approach in identifying new markets. Stated goals in locating in low-income areas include the fulfillment of corpo-

rate mission, namely, bringing food to underserved areas. Whole Foods performs extensive on-the-ground research, and claim that they won’t go where neighborhood doesn’t want them. Most tellingly, Mr. Becker indicated Whole Foods looks for the presence of a food culture to gauge the market. The growth in demand and interest in healthy and organic foods nationwide over the last several years may represent an opportunity for Trenton to capture a retailer such as Whole Foods in coming years⁶⁵.

⁶² TRF p. 33. . TRF also calculated that Trenton was second-highest in the nation in terms of the burden of limited-supermarket access imposed on low-income residents. That is, the percentage of Trenton’s LSA population who were living in low-income areas was second highest in the nation, at 91%, behind only its neighbor, Camden. Forty-five percent of Trenton’s residents live in an LSA, and nearly all are in a low-income area. USDA p. 112

⁶³ USDA 2009, p.112

⁶⁴ National Public Radio, 2014. <http://www.npr.org/blogs/thesalt/2014/02/10/273046077/takes-more-than-a-produce-aisle-to-refresh-a-food-desert>

⁶⁵ Interview, Peter Becker

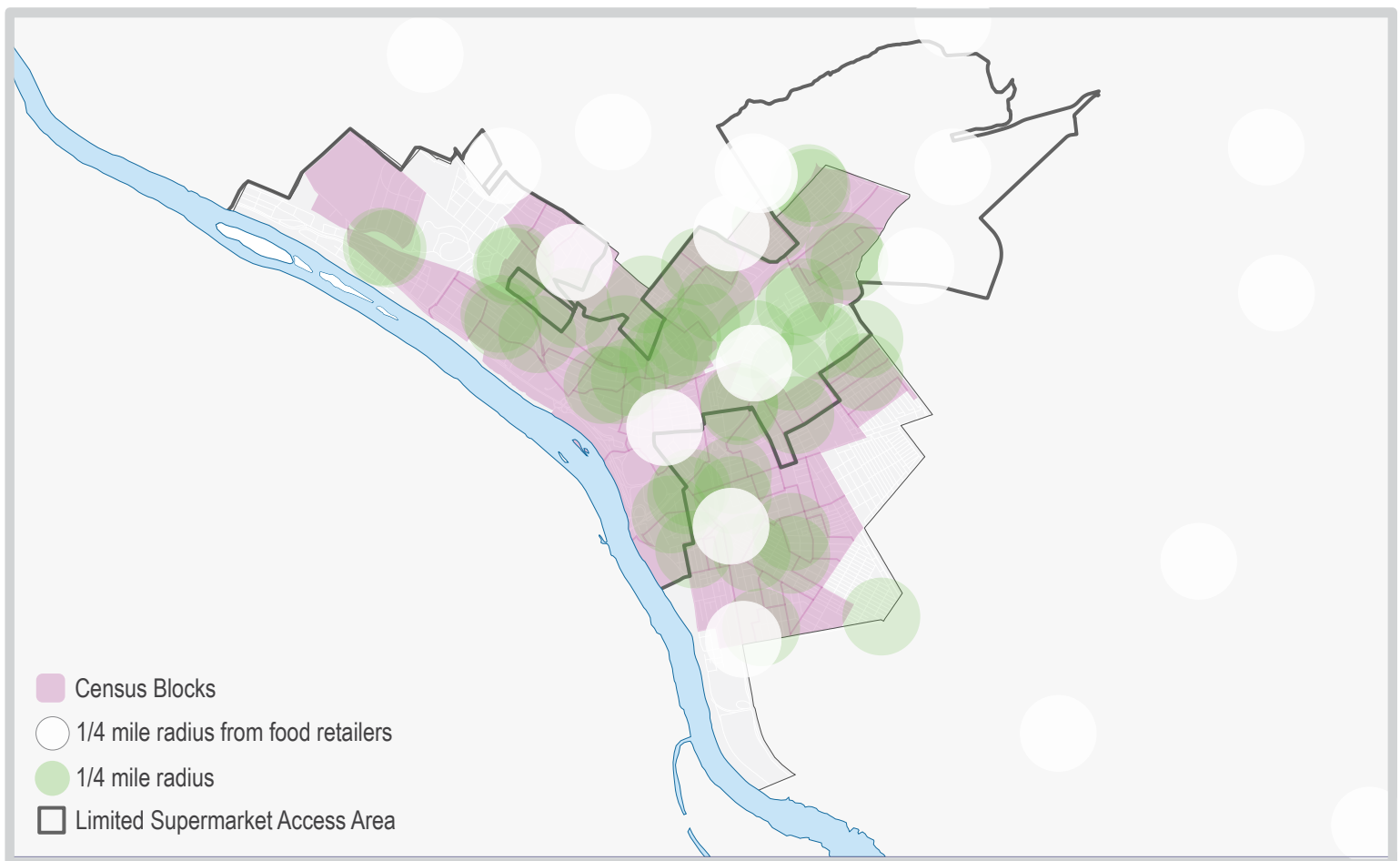
Allow Grocery Stores in B Business Zoning Districts

Vacant and underutilized parcels in the city represent over 3.2 million square feet of as-of right commercial redevelopment potential⁶⁶. There are several large, industrially-zoned pieces of land between Route 1 and the train tracks that run through the North Ward, as well as a few in the East Ward near its border with the North Ward. Scattered vacant commercial sites exist up and down commercial corridors, particularly State Street in the East Ward and Route 206/Martin Luther King Jr. Boulevard.

The City's zoning code currently prohibits grocery stores larger than 2000 SF within the B Business square feet Zoning District.

However, most of the neighborhood commercial corridors are zoned B Business. Vacant or underutilized parcels zoned BB represent nearly 450,000 square feet of grocery store redevelopment potential, if a zoning code change to permit retail food stores greater than 2000 square feet were enacted. Over 49,000 residents who currently live outside of walking distance of a supermarket or grocery store live within walking a vacant or underutilized parcel zoned BB with greater than 2000 square feet of redevelopment potential. Thus there is an opportunity to improve food access for many residents if a change to the zoning code to allow modestly-sized grocery stores in Business B districts is adopted.

Possible Development Areas



⁶⁶ Isles

Alternate Arrangements

Focus on Small Grocery Stores

Although supermarkets have generally been cited as the best source of affordable and nutritious food, there are hypothetical arrangements for alternative models that would adequately serve the city. A few small grocery stores can adequately replace a single large supermarket, and can be more accessible in an urban environment due to scale and urban form.

In-store audits of food availability conducted by researchers in New Orleans found that smaller grocery stores could, and in many case did, contain nutritious food. These researchers found that that “access to urban small food stores and their in-store availability of foods may also play a role in affecting diet, in particular vegetable intake. The potential benefits of greater local fruit and vegetable availability may be especially pronounced for poor households without private transportation, who may have a greater reliance on nearby small food stores.”

Make Existing Stores Better

Convenience stores are more common in less affluent communities than grocery stores, and are also more likely to stock processed foods, while healthier options are sold at a premium. It may difficult for convenience stores to provide whole food options at a competitive price because they do not benefit from economies of scale. These products have a short shelf life, and require space and proper refrigeration that convenience stores may not have.

Nevertheless, convenience stores are important assets for low-income neighborhoods. Cities across the country have implemented healthy convenience store initiatives to address food gaps. Reliable data from in-store audits of Trenton’s convenience stores would help establish which of these stores, if any, can be considered sources of affordable and nutritious food, and would

help tailor programs to promote produce in small stores. A Nutrition Environment Measures Survey, which characterizes type and location of food outlets, availability of healthful choices and information, pricing, promotion, and placement of healthier food products, is one way of gathering such data.⁶⁶

⁶⁶ Bodor et al. (2007)

Healthy Food Retailer



DEVELOPMENT



ACCESS



PARTNERSHIP

The city of San Francisco's Healthy Food Retailer Incentives Program aims to increase the quantity of healthy food in convenience stores, while reducing the prevalence of processed foods, alcohol and tobacco. The city hopes to curb food insecurity in low-income neighborhood by building upon existing resources rather than attracting supermarkets. Such initiatives may not only reduce the food gap in certain neighborhoods, but also boost economic development in those areas.

The program, offered through the City's Office of Economic and Workforce Development (OEWD), "offers technical assistance, retail assessment, help with permitting, and small loans and grants." In order to participate in the program, convenience store owners agree to provide "at least 35 percent of its floor and shelf area to "fresh produce, whole grains, lean proteins and low-fat dairy products" and also have no more than 20 percent of its space dedicated to tobacco and alcohol products" (1)

Programs such as the Healthy Food Retailer Incentive Programs have limitations, and any comprehensive long-term initiative should approach the issue holistically. Stores owners will require short- and long-term assistance. Assistance programs for convenience

store owners must be made simple, as the bureaucratic process can alienate potential participants. Storeowners are also likely to require financial assistance in order to acquire necessary equipment such as freezers and any permits. Lastly, information dissemination is crucial among convenience store owners. One option for disseminating information is to create a Healthy Convenience Store Association/Task Force. In New York, for instance, a community member and former bodega owner created such an association in order to help others by gathering information and disseminating them among the group. These task forces may offer information on what to stock and where to buy products, as well as general information on store management (source).



⁶⁷ <http://www.med.upenn.edu/nems/>

Healthy Youth Retail Initiative



The Healthy Youth Retail Initiative was developed as a partnership between The American Dairy Association and Dairy Council and youth-focused community organizations in response to a growing concern for access to healthy food options in New York City where diet-related illnesses are prevalent.⁶⁹ With the support of two project partners, the initiative was created to encourage youth in two Brooklyn neighborhoods to design and execute a campaign to spark healthy food merchandising and purchasing activities in community groceries. Family Cook Productions/Health Corps led students in Canarsie and EcoStaton:NY facilitated students in Bushwick to create educational and promotional materials for healthy food education and outreach in local bodegas and corner stores. In addition to gaining considerable knowledge for healthier food consumption, the program also aimed to encourage youth engagement and empowerment within their communities.

Students in Canarsie participated in a Teen Battle Chef program led by Family Cook Productions/Health Corps staff, in which they developed greater knowledge about cooking and nutrition through a competition with other students to collaborate on a culturally specific recipe.⁷⁰ The semester-long program also inspired participants to share their acquired cooking and nutritional knowledge with their peers, school, community, and families to encourage healthier food consumption.

The Bushwick program was facilitated by EcoStation:NY and allowed students to interact with local food providers to develop healthy eating campaigns. Students were able to meet and discuss food layout with store managers and also assist in planning

healthy food demos. The youth held yogurt parfait samplings at supermarkets and also encouraged managers to sell more sugar-free dairy products.



⁶⁹ Karen Karp Resources. "The American Dairy Association and Dairy Council Healthy Retail Youth Empowerment Initiative Summer Extension Program Summary." November 1, 2013.

⁷⁰ Family Cook Production. http://www.familycookproductions.com/index.php?option=com_content&view=article&id=83&Itemid=45. 2002-2013

Baltimarket: The Virtual Supermarket Project



ACCESS



PARTNERSHIP



EDUCATION

In partnership with Santoni's Supermarket, the City of Baltimore's Department of Health created Baltimarket, a virtual supermarket, to help connect its residents to the limited healthy food assets in its city. Like Trenton, market forces have yet to introduce the appropriate amount of supermarkets required to service its 621,000 residents. In response, policy makers have ingeniously decided to maximize their existing assets through the use of a virtual market place that brings healthy groceries from Santoni's to local public schools and libraries. Policy makers are also looking to expand the program through a partnership with the local public housing authority as well. With limited access to personal vehicles and inadequate public transit, this has been a wildly successful program that brings healthy groceries to participating residents. Residents order their groceries online, are able to utilize their SNAP benefits and are not charged any additional delivery fee for the service. The program essentially expands Santoni's footprint to each of the participating schools or libraries. In addition, each of the participation locations programs the space to help educate participants on the benefits of whole foods and offers cooking classes for all ages.

It is reported that 35% of all residents in Trenton qualify for the SNAP program, yet only 26% are enrolled. As mentioned in earlier recommendations, one out of every three households also reports to not have access to a personal vehicle. There is also just one supermarket to service the 84,500 residents of this city. Given the limits of the existing assets in Trenton, there is a great opportunity for the city to create a partnership that would support a similar virtual marketplace. Schools and libraries would provide coverage for healthy food access that is currently difficult to re-

**ORDER YOUR
GROCERIES
AT YOUR
LIBRARY.**

SEVERAL
WAYS
TO PAY

**EASY ORDERING.
FREE DELIVERY.
CONVENIENT PICK UP.**

For more information, call the
Baltimore Health Department at
410-545-7544.

SANTONI'S
Supermarket

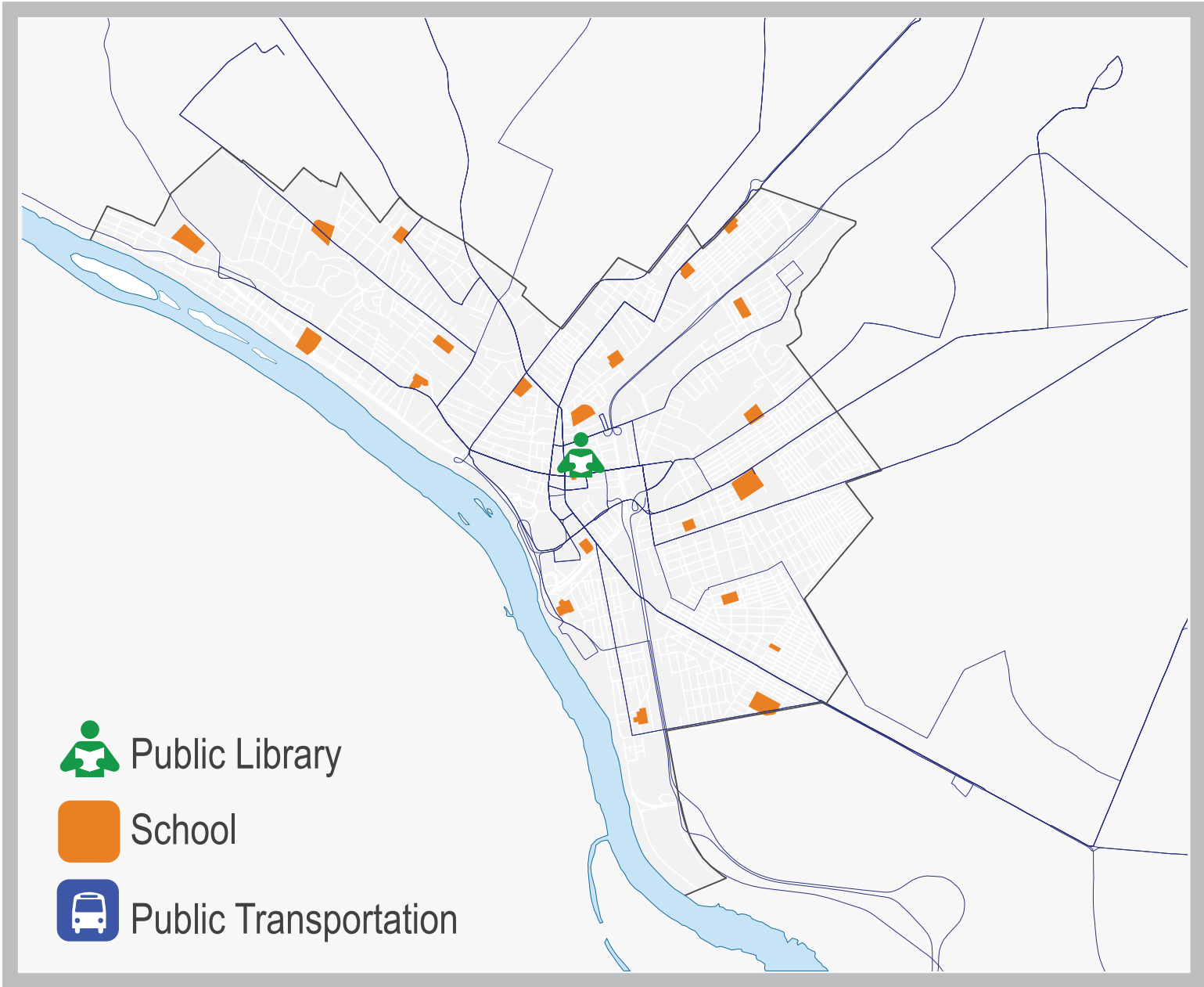
CITY OF BALTIMORE
HEALTH DEPARTMENT

BALTIMORE PUBLIC LIBRARY

alize with current market conditions. A partnership that includes Food Bazaar, the city’s Department of Health and Isles could create a virtual marketplace that allows residents to order groceries online, with their SNAP benefits, and then pick up those groceries on a weekly or biweekly basis at an existing public facility within

their neighborhood. This would allow the city to maximize its limited existing assets and increase access to healthier food options throughout the city with minimal investment.

Partnership Opportunity Sites



Conclusion

As noted at the outset of this report, the issues surrounding food availability and accessibility in Trenton are complex and multifaceted. This report does not attempt to offer solutions to improve food access for Trenton's 84,500 residents. Instead, it offers a quantitative perspective on the state of the food industry within the City and the region, while providing glimpses of food-related programs that have been successful elsewhere in the United States. Those who know Trenton best, who understand its resources, needs, and political, social and economic realities, are in the best position to evaluate if and how these programs might best serve the city, and we leave it to readers to make those decisions. This report closes, then, with a consideration of a strength, a weakness, an opportunity and a threat to Trenton's food assets.

A key **strength** of Trenton, from a regional perspective, is that it is situated in the midst of a major regional food production and distribution system. The urban centers of New York and Philadelphia generate a massive amount of food economic activity, with Trenton literally perched in the middle. The city may be poised to take advantage of this in any number of ways, including through regional partnerships such as local sourcing and collective and food health policy goals.

Trenton's most obvious **weakness** is its collection retail food assets, which are inadequate for its population size and distribution. Data provided here demonstrate that four new supermarkets would have to open in Trenton to match the national frequency of supermarkets based on population. At the same time, Trenton's retail food assets are too 'swampy', consisting overwhelmingly of corner stores offering low-quality food.

The extent to which exogenous factors can infiltrate and impact a city is, practically by definition, difficult to foresee and characterize. Nevertheless, the rapid expansion and commodification of the organic movement in recent years has led to a growing interest and awareness in healthy food consumption. This may represent an **opportunity** for Trenton to develop or enlarge a 'food culture,' attracting new food business and making some of the programs suggested here easier to implement.

Finally, while the role of community leaders in affecting positive change cannot be overstated, the ability of any city to achieve growth is dependent upon the support and drive of its leadership in City Hall. The current political instability in Trenton may represent the greatest near-term **threat** to achieving any sort of comprehensive change in Trenton's food system.

Appendix A: Limitations of Data

Since NAICS codes do not specifically distinguish between Supermarkets and Grocery Stores, these codes could not be used exclusively to map assets as defined for this study. The Capstone team used reported sales volume from ReferenceUSA to distinguish between the two.

Moreover, the data was not without its own challenges, including bias or misinterpretation from self-reporting by businesses or other limitations reflected in ReferenceUSA estimates. Thus, in some instances, qualitative physical assessments of the characteristics of the establishments were utilized. Where possible, locations in question were visited in person or viewed on StreetView to enable more accurate categorization.

For example, an entry for Josmary Deli & Grocery listed this business as a General Line Grocery Wholesaler, over 10,000 square feet in size, with annual sales of \$13.5 million – more than the national average for a full-service supermarket. However, Google StreetView shows this business to be a corner store of no more than 5,000 square feet. This business was recategorized manually as a “Convenience Store.”

In contrast, both Food Bazaar and Super Foods were originally listed as 2,500 square foot facilities with \$833,000 in annual sales volume. These assets were recategorized as “Supermarkets.”

Finally, data from ReferenceUSA was supplemented with business database listings from the City of Trenton Department of Health, and from online searches for “supermarkets” and “grocery stores” in Trenton in Google. None of the assets identified in this manner had the full range of data attributes available that ReferenceUSA provided. The Capstone team used its best judgment from online research to categorize these assets.

Appendix B: Recommended Studies

Throughout the course of the study, many significant studies were referred to by the Capstone Team. Several of these were particularly relevant to the problems under investigation by CUES and Isles. A list of especially recommended studies follows:

The Reinvestment Fund. Searching for Markets: The Geography of Inequitable Access to Healthy & Affordable Food in the United States

USDA. Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences.

Bodor, J. Nicholas, Donald Rose, Thomas A Farley, Christopher Swalm and Susanne K Scott. Neighbourhood fruit and vegetable availability and consumption: the role of small food stores in an urban environment.

National Center for Chronic Disease Prevention and Health Promotion. State Initiatives Supporting Healthier Food Retail: An Overview of the National Landscape.

References

- Akbar, Nadia, Jessica Chao, Paul Crupi, Ena Kumar, Catherine Murray, Matthew Spayth. Edward J. Bloustein School of Planning and Public Policy, Rutgers University. Food Security in Trenton: What Families, Communities, and Governments Can Do to Promote Healthy Living. 2011. New Brunswick, NJ: Rutgers University. Retrieved from <http://policy.rutgers.edu/academics/projects/practicums/trenton2011.pdf>.
- Bennet, James, Erica Blake, Lori Cilino, Katie Holden, Miriam Latzer, Tanya Marione, Marika Milewska, Daniel Mott, Jeffrey Perlman, Paul Philips, Sarah Singer, Peter Van Den Kooy. Community Development Studio, Urban Planning and Policy Development: Edward J. Bloustein School of Planning and Public Policy, Rutgers University. A Community Food Assessment of Trenton, New Jersey. 2005. New Brunswick, NJ: Rutgers University. Retrieved from http://policy.rutgers.edu/academics/projects/studios/food/Studio_05Final.pdf.
- Bodor, J. Nicholas, Donald Rose, Thomas A Farley, Christopher Swalm and Susanne K Scott. "Neighbourhood fruit and vegetable availability and consumption: the role of small food stores in an urban environment." Public Health Nutrition Volume 11, Issue 4 2007: pp. 413-420.
- Bustillos, Brenda, Joseph R. Sharkey, Jenna Anding and Alex McIntosh. "Availability of More Healthful Food Alternatives in Traditional, Convenience, and Nontraditional Types of Food Stores in Two Rural Texas Counties." Journal of the American Dietetic Association Volume 109, Issue 5 2009: pp. 883-889.
- California Center for Public Health Advocacy, PolicyLink, UCLA Center for Health Policy Research. Designed for Disease: The Link Between Local Food Environments and Obesity and Diabetes. 2008. Retrieved from <http://www.publichealthadvocacy.org/designedfordisease.html>.
- City of Trenton Department of Housing and Economic Development, Division of Planning. Periodic Reexamination of the City of Trenton's Land Use Plan and Regulations. 2005. City of Trenton Planning Board: Trenton, NJ. Retrieved from <http://www.trentonnj.org>.
- Department of Health and Human Services, Centers for Disease Control and Prevention. Children's Food Environment State Indicator Report, 2011. 2011. Washington, DC: U.S. Government Printing Office. Retrieved from <http://www.cdc.gov>.
- Denver Food Access Task Force. Healthy Food for All: Encouraging Grocery Investment in Colorado. December 2011. Denver, CO. Retrieved from www.denvergov.org.
- Council of the District of Columbia. Food, Environmental, and Economic Development in the District of Columbia Act of 2010. Washington, DC. B18-09667, Law # L18-0353.
- The Food Trust and Center for Remote Sensing and Spatial Analysis at Rutgers, The State University of New Jersey. The Need for More Supermarkets in New Jersey. (2009). Philadelphia, PA: The Food Trust. Retrieved from www.thefoodtrust.org.
- Gervasio, Kalla and Carol McAloon. Community Health Needs Assessment Report: Trenton, NJ. (2013). Trenton, NJ: Trenton Health Team. Retrieved from <http://capital-health.org>.
- National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity and Obesity. State Initiatives Supporting Healthier Food Retail: An Overview of the National Landscape (CDC Publication CS226271). Washington, DC: U.S. Government Printing Office. Retrieved from http://www.cdc.gov/obesity/downloads/healthier_food_retail.pdf.

National Public Radio. "It Takes More Than a Produce Aisle to Refresh a Food Desert." 2014. Retrieved from <http://www.npr.org/blogs/thesalt/2014/02/10/273046077/takes-more-than-a-produce-aisle-to-refresh-a-food-desert>.

New Jersey Partnership for Healthy Kids. <http://www.njhealthy-kids.org/when-healthy-sells/>

San Francisco Food Alliance. 2005 San Francisco Collaborative Food System Assessment. 2005. San Francisco, CA: San Francisco Food Systems. Retrieved from <http://sffoodsystems.org>.

Seattle Women's Commission and Councilmember Mike O'Brien. Food Access for Women in Seattle: Delridge Priorities. 2014. Retrieved from <http://cleark.seattle.gov>.

U.S. Department of Agriculture Economic Research Service. Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences, Report to Congress. 2009. Washington, DC: U.S. Government Printing Office. Retrieved from <http://ers.usda.gov>.

U.S. Department of Agriculture Economic Research Service. Access to Affordable and Nutritious Food; Updated Estimates of Distance to Supermarkets Using 2010 Data. 2010. Washington, DC: U.S. Government Printing Office. Retrieved from <http://ers.usda.gov>.

U.S. Department of Housing and Urban Development. HUDUser. Retrieved from www.huduser.org.

U.S. Department of the Treasury CDFI Fund, The Reinvestment Fund (TRF), OpportunityFinance Network. Searching for Markets: The Geography of inequitable Access to Healthy and Affordable Food in the United States. 2012. Washington, DC: U.S. Government Printing Office. Retrieved from <http://www.trfund.com>.

U.S. Department of the Treasury CDFI Fund. 2011. New Market Tax Credits and Urban Supermarkets. Financing Healthy Food Options: Implementation Handbook. Washington, DC. Retrieved from <http://www.cdfifund.gov>.

Vitiello, Domenic, Michael Nairn, Jeane Ann Grisso, Noah Swistak, University of Pennsylvania Center for Public Health Initiatives. Community Gardening in Trenton, NJ Harvest Report. 2010. Philadelphia, PA: University of Pennsylvania. Retrieved from <http://camdenchildrensgarden.org>.

Walkscore. Retrieved from www.walkscore.com.

Whole Foods Market. 2013 Annual Report. 2014. Retrieved from www.wholefoodsmarket.com.

Ver Ploeg, Michele, Vince Breneman, Travey Farrigan, Karen Hamrick, David Hopkins, Phillip Kaufman, Biing-Hwan Lin, Mark Nord, Travis A. Smith, Ryan Williams, Kelly Kinnison, Carol Olander, Anita Singh and Elizabeth Tuckermanty. Access to Affordable and Nutritious Food – Measuring and Understanding Food Deserts and Their Consequences: Report to Congress (U.S. Department of Agriculture Administrative Publication No. AP-036). 2009.

Data Sources

New Jersey Geographic Information Network. https://njgin.state.nj.us/NJ_NJGINExplorer/index.jsp.

New York GIS Clearinghouse. <https://gis.ny.gov/>.

Pennsylvania State Department of Transportation. <http://www.dot.state.pa.us>.

U.S. Census. <http://www.census.gov>.

American Factfinder. <http://factfinder2.census.gov>.