

# TARRANT COUNTY'S RETAIL FOOD ENVIRONMENT

SEPTEMBER 2020

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HEALTHY TARRANT COUNTY COLLABORATION

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# INTRODUCTION

This project began in 2014 when Healthy Tarrant County Collaboration (HTCC) became aware of the rising public health concerns involving residents of Fort Worth's east and southeast sectors due to chronic health diseases and high morbidity rates. Community leaders pointed out that while many organizations would come over to provide education on what a healthy diet should include and how to prepare foods to be healthier, these well-meaning health educators failed to notice that many of the foods they were recommending were readily available nearby. The 72-square mile area had just 3 supermarkets, along with an abundance of convenience stores, gas stations, and dollar stores. Among these other stores HTCC had identified a number of bright spots where healthy foods were available. This led to a decision to conduct a comprehensive retail food environment survey that included every store in the region. The project eventually was expanded to include county-wide data collection.

Concurrently, HTCC also began testing additional strategies aimed at expanding healthy food access with the aim of identifying which strategies work well in Tarrant County and that could be replicated in other underserved area. First, two "Healthy Corner Stores" were chosen by finding owners in high-need areas who were willing to change the layout and offerings of their stores to reflect healthier eating options. Second, HTCC began working with several individuals and organizations seeking to develop urban farms. Currently, five farms are in varying stages of development. Third, HTCC's steering committee and work groups are looking into policy measures that can help support these efforts.

With tremendous efforts from the HTCC team, we are excited to provide the complete data set for the entirety of Tarrant County. We hope that access to this information will positively influence the overall food environment, which in turn will ultimately provide for a healthier future for the residents of Tarrant County.

Quynh Anh H. Tran  
Intern, Healthy Tarrant County Collaboration 2020

# CONTRIBUTORS

Our data collection began in May 2018 and was concluded in June 2020 through the efforts of student interns and classes from several universities, including Johns Hopkins University, Purdue University, Sam Houston State University, Tarleton State University, Texas Woman's University, University of Texas at Arlington, UNT Health Science Center, and Western Governor's University.

The data collection process was developed by Samantha Harrison, MPH, and Katie Pierce, BPH, based on the process used by Johns Hopkins to conduct the *Baltimore City's Food Environment Report: 2018*. Our surveyors have included:

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## **Acknowledgement:**

Caitlin Misiaszek, Program Officer, Johns Hopkins Center for a Livable Future.

## **About HTCC:**

Healthy Tarrant County Collaboration is a partnership of hospitals, public health organizations, and universities working together to build healthier communities.

# TARRANT COUNTY HEALTH STATUS

Based on the most recently published data from the Behavioral Risk Factor Surveillance System survey for Tarrant county in 2015:

- 82.5% of Tarrant County residents consumed fruits and vegetables less than five times per day
- 24.3% ate at fast food restaurantstwoormoretimesperweek
- 66% of residents are overweight or obese
- 33.3% have high blood cholesterol
- 10.6% are diabetic, and
- 7.7% are diagnosed as pre-diabetic (Division of Epidemiology and Health Information, 2015).

Through the use of this report, community health workers, health providers, and other interested parties can use the hyperlinked maps below to assist patients and residents with finding access to healthy foods near their homes.

# HEALTHY FOOD AVAILABILITY INDEX (HFAI)

HTCC utilized measurement tool developed from the Baltimore Healthy Food Availability Index, NEMS resources, and communication with Johns Hopkins staff to conduct surveys and data collections. Potential scores range from a low of 0 to a high of 32 points.

Item	Availability Scoring	Total Possible Score
Nonfat/low-fat milk	1 pt. if available 1 pt. if >33% shelf space 1 pts. if >50% shelf space	3 pts.
Fresh Fruits	1 pt. if available 1 pts. if >5 varieties	2 pts.
Frozen and canned fruit	1 pt. for frozen 1 pt. for canned	2 pts.
Vegetables	1 pt. if available 1 pts. if >5 varieties	2 pts.
Frozen and canned vegetables	1 pt. for frozen 1 pt. for canned	2 pts.
Ground Beef	1 pt. if Lean 1 pts. if ≥ 90% Lean	2 pts.
Chicken (boneless, skinless breasts)	1 pt. if avail. 1 pt. if >2 varieties	2 pts.
Fish (fresh or frozen)	1 pt. if available	1 pt.
Eggs	1 pt. if available	1 pt.
Pre-packaged Meats (Lunch meats, hot dogs, etc.)	1 pt. if low-fat options avail. 1 pt. if >2 varieties	2 pts.
Frozen Meals	1 pt. if low fat meals avail. 1 pt. if > 33% shelf space	2 pts.
Low-Sodium	1 pt. if low-sodium tuna 1 pt. if low-sodium canned soups	2 pts.
Baked goods (tortillas, bagels, English muffins, etc.)	1 pt. if low-fat options avail. 1 pt. if >2 varieties	2 pts.
Bread	1 pt. If whole grain bread avail. 1 pt. if >2 varieties	2 pts.
Rice	1 pt. if available	1 pt.
Dried Beans	1 pt. if available	1 pt.
Cereal	1 pt. if healthier options avail. 1 pt. if >2 varieties	2 pts.
Juice	1 pt. 100% juice	1 pts.
<b>Total Possible Points:</b>		<b>32 pts.</b>

# SURVEYING PROCESS

Our survey was based on the process developed by Johns Hopkins researchers to conduct the data collection for the [\*Baltimore City's Food Environment Report: 2018.\*](#)

We obtained a list of SNAP certified retail stores from Tarrant County Public Health and sorted the stores by zip code. Working one zip code at a time, trained student team members conducted surveys in gas stations, convenience stores, pharmacies, dollar stores, small and large grocery stores, and specialty food markets by using the HFAI. In total 1280 stores were visited.

Surveys were primarily completed on cell phones and mobile devices with the use of Google Maps and Google Sheets. Survey results were then compiled and higher-scoring and specialty stores (yellow for 11-20 pts., green for 21-32 pts., and blue for specialty stores) have been included in this report.

# HEALTHY FOOD AVAILABILITY INDEX

## DATA ANALYSIS

Across Tarrant County there are a number of low-income neighborhoods that also lack nearby access to stores selling healthy and affordable foods. The lack of easy access to healthy foods is believed to contribute to poor diet, obesity, and other diet-related conditions. These areas are sometimes called food deserts or healthy food priority areas. The USDA's Economic Research Service identifies census tracts as food deserts if they meet the following low-income and low-access criteria:

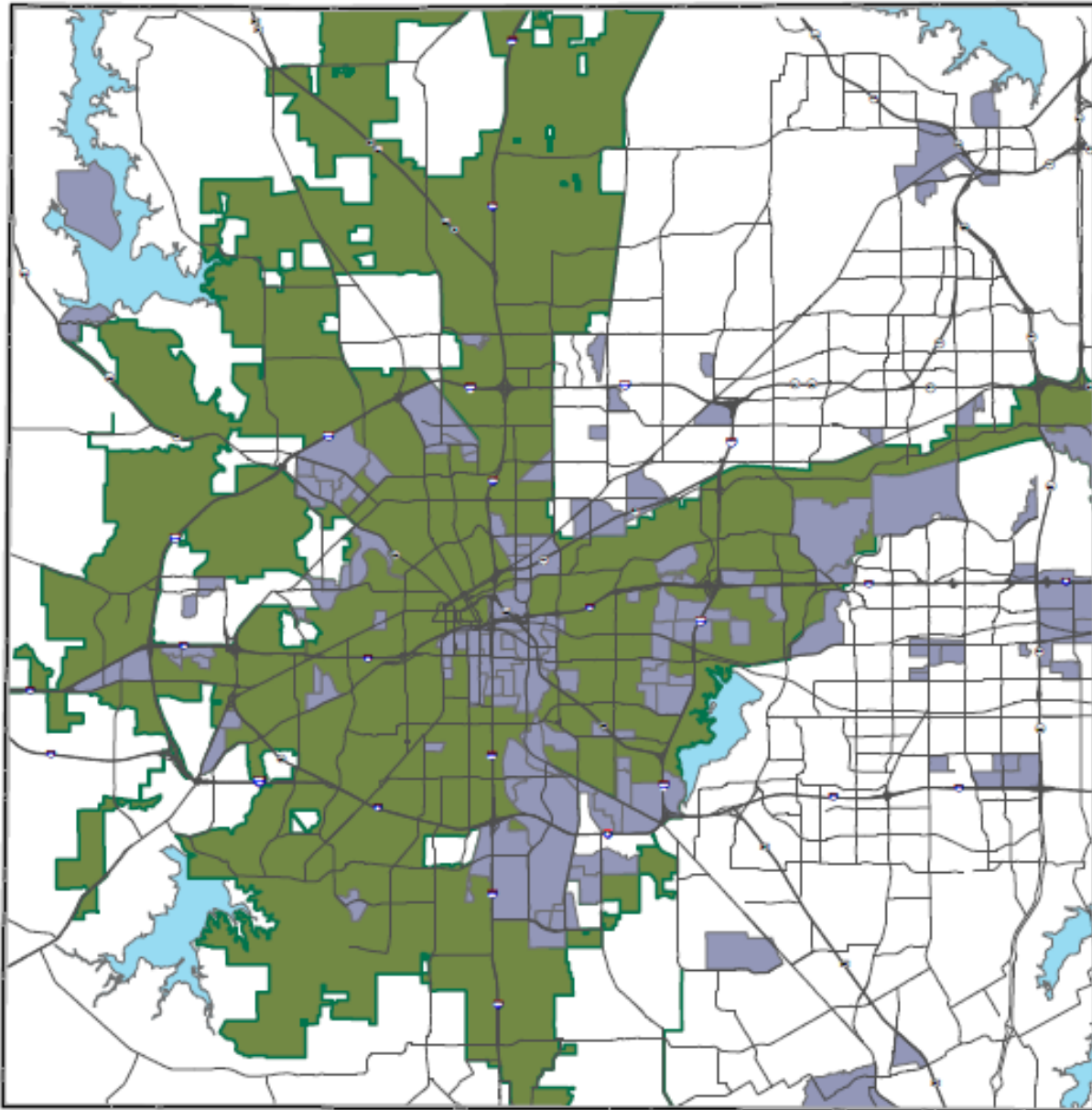
- Low-income: A poverty rate of 20 percent or greater, or a median family income at 80 percent of the statewide or metropolitan area median family income.
- Low-access: At least 500 persons and/or at least 33 percent of the population lives more than 1 mile from a supermarket or large grocery store (10 miles, in the case of rural census tracts).<sup>i</sup>

Supermarkets or large grocery stores are defined as food stores with at least \$2 million in annual sales and containing a full range of foods. Across Tarrant County in the past 40 years the number of supermarkets has declined. For example, the Winn-Dixie located at the corner of Oakland and East Lancaster is now a Planet Fitness gym. The Skaggs Alpha Beta located at the corner of Tierney Road and East Lancaster is now a Vietnamese Catholic church. The Tom Thumb located at the corner of Bridge Street and Bridgewood is now the Fort Worth ISD's Teaching and Learning Center. Others, such as the Walmart at the corner of Meadowbrook and Handley, are standing empty.

At the same time, there are retail stores selling some types of food in many of the underserved neighborhoods, including convenience stores, gas stations, dollar stores, or other specialty shops such as butcher or seafood shops.

Our aim with this study was to determine how these other stores contribute to the retail food environment in Tarrant County as a whole, with the hopes of identifying more viable retail options for residents living in identified low-income/low-access census tracts.

## Food Deserts\* by Census Block Group, Tarrant County, 2018



### Legend

- Food Desert
- City of Fort Worth
- Water

\* Food deserts are defined as areas that are greater than 1 mile from a grocery store and have a poverty level greater than or equal to 20%.

**FOR REFERENCE ONLY**

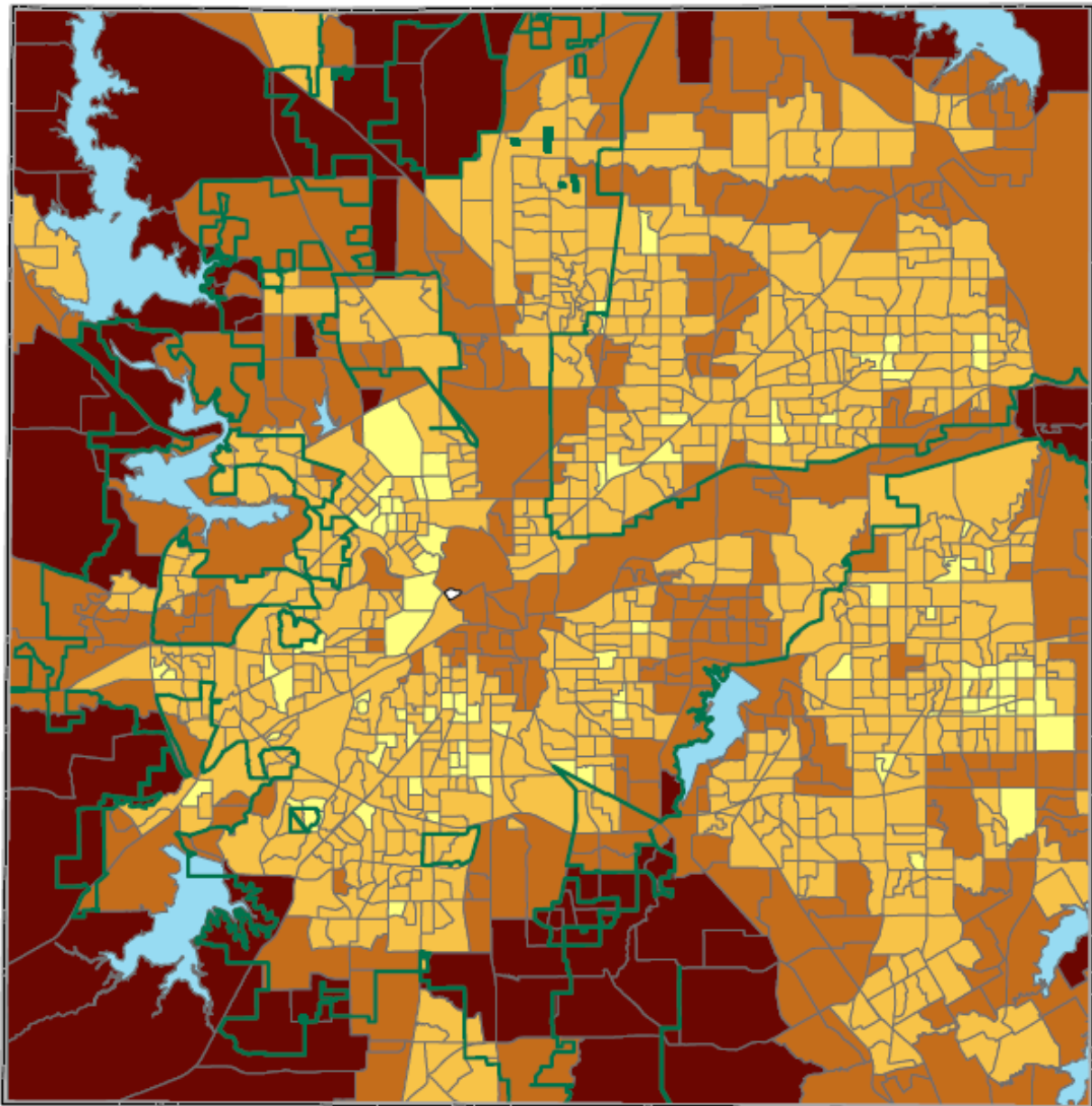


These data were prepared by Tarrant County Public Health for its use, and may be revised any time, without notification. Tarrant County Public Health does not guarantee the correctness or accuracy of any features on this map. Tarrant County assumes no responsibility in connection therewith. Said data should not be edited by anyone other than designated personnel, or through written approval by GIS Manager. These data are for informational purposes only and should not create liability on the part of Tarrant County Government, any officer and/or employees thereof.

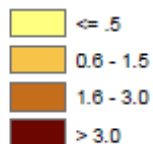
Sources: TCPH, City of Fort Worth, US Census Bureau



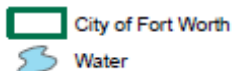
## Distance to Nearest Grocery Store by Census Block Group Fort Worth, 2018



### Distance in Miles



White box: Not included in analysis

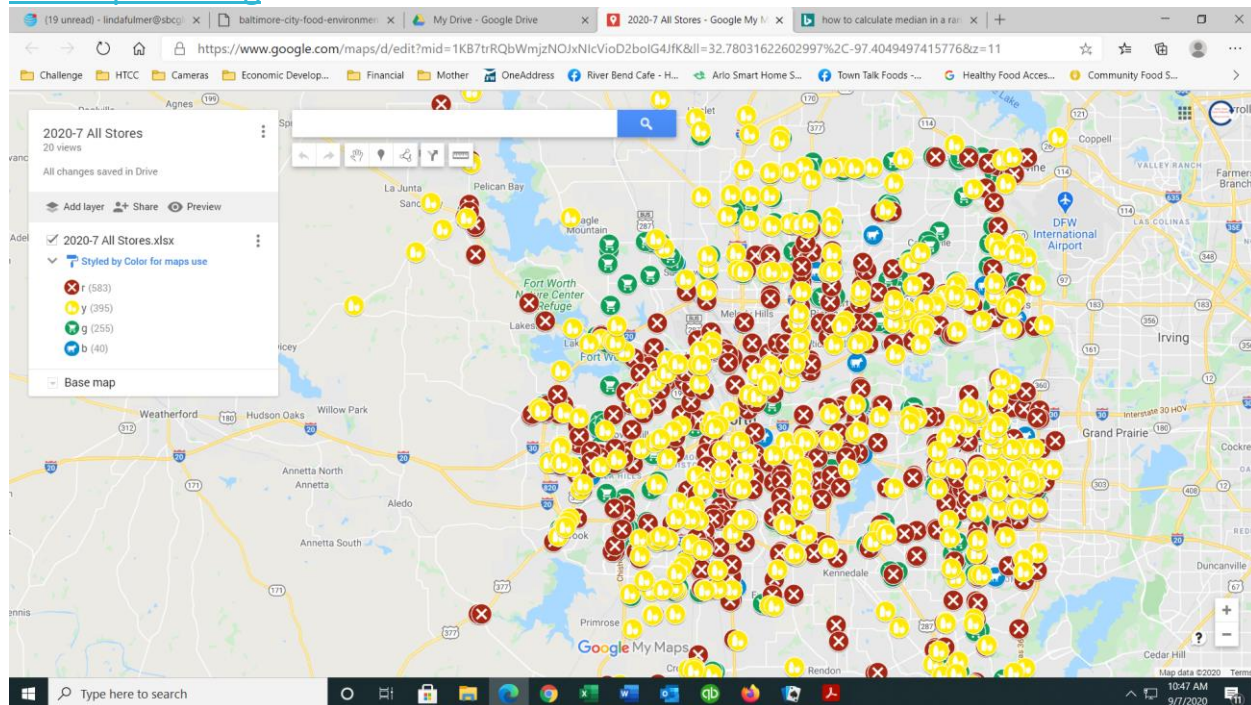


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Sources; TCPH, City of Fort Worth, US Census Bureau

In total, 1280 stores were surveyed. There were several stores, primarily gas stations or convenience stores, that were skipped due to safety concerns. A few stores were closed for remodeling when our surveyors visited, and 51 stores had closed permanently. The full map of stores surveyed is found at:

<https://www.google.com/maps/d/edit?mid=1KB7trRQbWmjzNOJxNlcVioD2boIG4JfK&usp=sharing>



For our purposes, the store categories were primarily defined as follows:

- Supermarkets: Large full-service stores owned by major supermarket corporations, such as Kroger, Albertsons, Whole Foods, etc.
- Small Grocery Stores: Smaller footprint stores offering a wide array of foods. Some of these are corporately owned, such as Aldi, or family owned, such as Save A Lot, Foodland, etc.
- Dollar Stores: Small box discount retail stores, including Dollar General, Dollar Tree, Family Dollar, and 99-Cents.
- Convenience Stores: Small stores selling primarily convenience items and snacks.
- Gas Stations: Convenience stores attached to a gas station
- Pharmacies: Drug stores, such as Walgreens, CVS, etc.

- Specialty Stores: Stores specializing in a particular food item, such as butcher shops, seafood shops, produce markets, and ethnic markets.

## Supermarkets

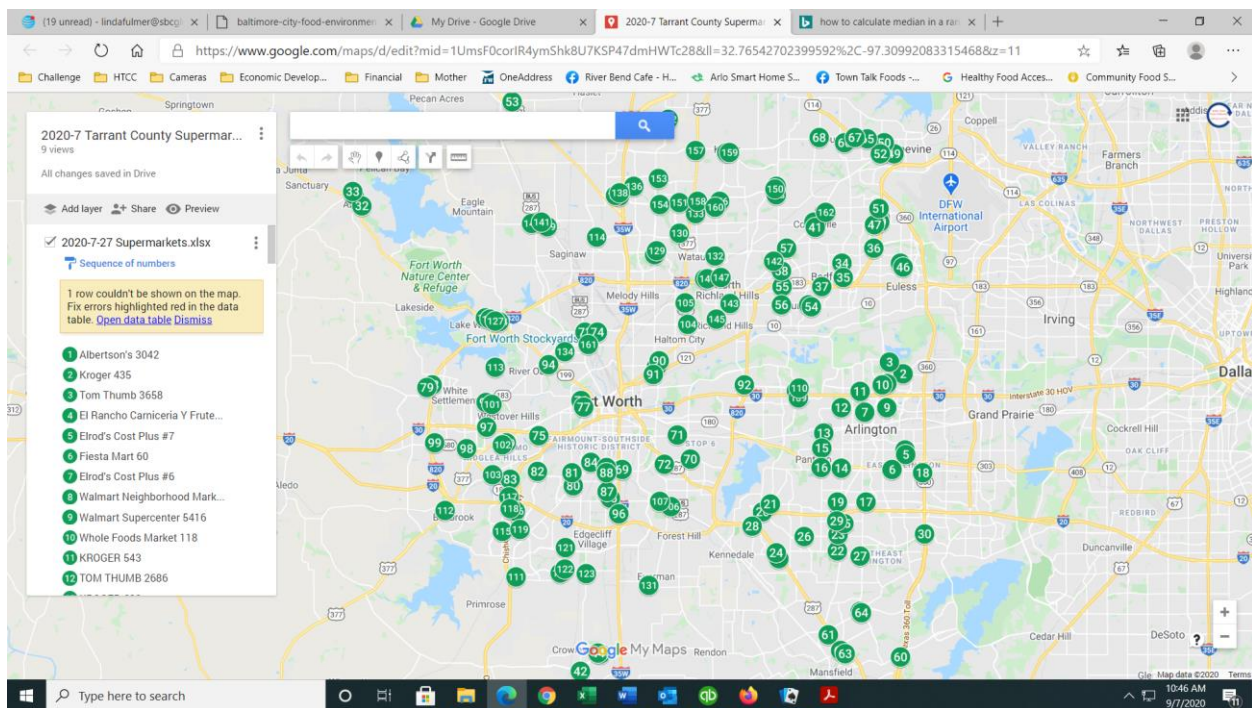
As noted, supermarkets and large grocery stores have annual sales volumes of at least \$2 million and offer a full array of fresh, frozen, and shelf stable foods.

These stores also often offer other services, such as pharmacies.

	All supermarkets	SNAP only	SNAP and WIC	No SNAP and/or WIC
Number surveyed	163			
Average HFAI score	31.03			
Median HFAI score	32			
Range HFAI score	11 (22-32)			

Table 1: Healthy Food Availability Index for Supermarkets

<https://www.google.com/maps/d/edit?mid=1UmsF0corIR4ymShk8U7KSP47dmHWTc28&usp=sharing>



## Small Grocery

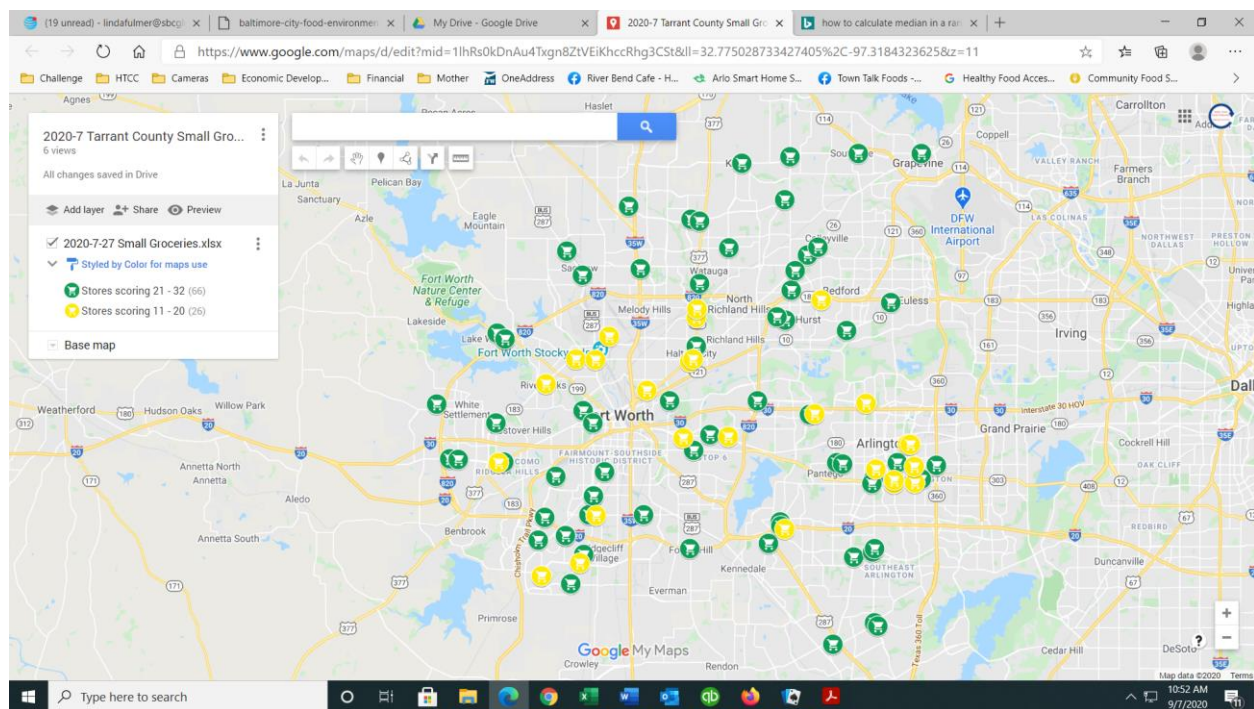


Small grocery stores offer a smaller foot print than supermarkets, but still offer most categories of food. In Tarrant County, small grocery stores include discount stores such as Aldi, Foodland, Save A Lot, and Elrod's Cost Plus, along with some independently owned stores.

	All small grocery stores	SNAP only	SNAP and WIC	No SNAP and/or WIC
<b>Number surveyed</b>	92			
<b>Average HFAI score</b>	23.6			
<b>Median HFAI score</b>	24			
<b>Range HFAI score</b>	22 (11-32)			

Table 2: Healthy Food Availability Index for Small Grocery Stores

<https://www.google.com/maps/d/edit?mid=1hRs0kDnAu4Txgn8ZtVEiKhccRhg3CSt&usp=sharing>



## Dollar Stores

Dollar stores are small box discount retail stores that are either corporately owned or franchised to local owners. In Tarrant County the primary dollar store brands are Dollar General, Family Dollar, Dollar Tree, and 99-Cents Only. Many

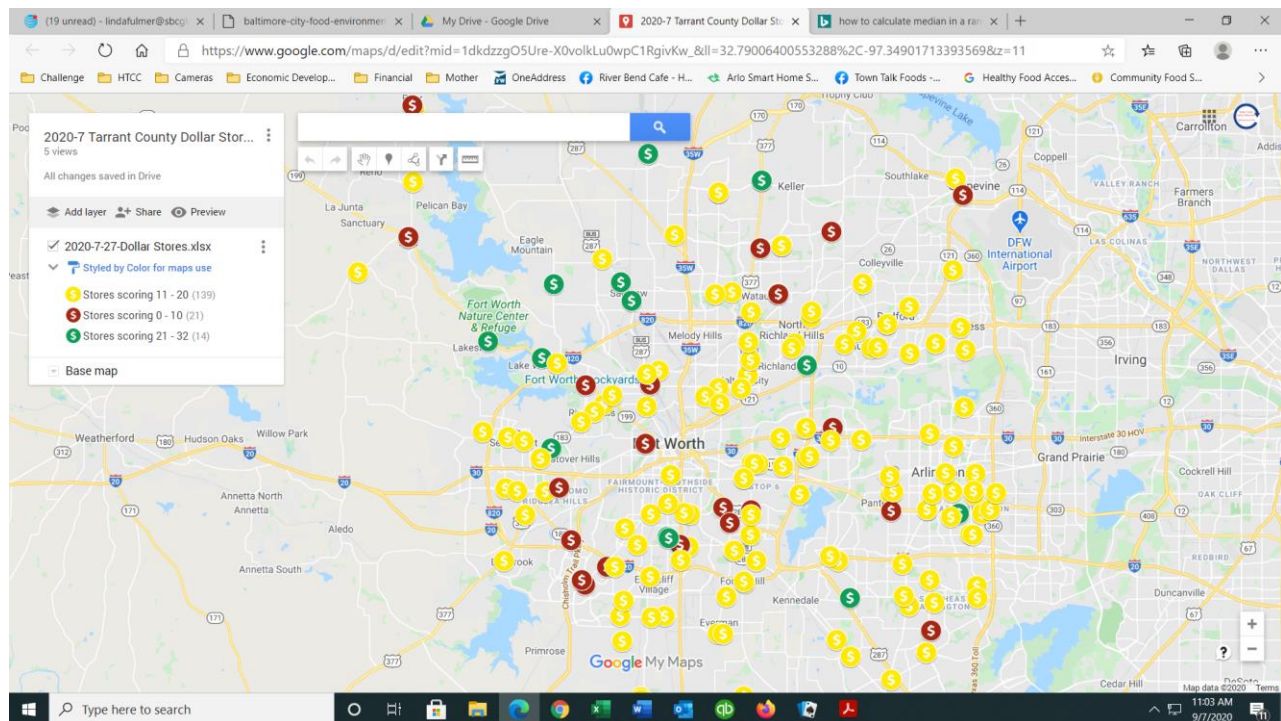
dollar stores carry a wide array of frozen, canned, and shelf stable grocery staples. Interestingly, the 99-Cents Only stores carry fresh produce. Nationally, Dollar General has been remodeling many of its corporately owned stores to include fresh produce and meats; however, few have been so remodeled in Tarrant County to date.

In December 2019 the City of Fort Worth adopted an ordinance requiring all future new dollar stores built within its city limits to allocate 10% of the floor space to sales of fresh produce, meats, and dairy. This will make it feasible for more residents to buy most of their groceries at a dollar store.

	All dollar stores	SNAP only	SNAP and WIC	No SNAP and/or WIC
<b>Number surveyed</b>	174			
<b>Average HFAI score</b>	14.5			
<b>Median HFAI score</b>	14			
<b>Range HFAI score</b>	22 (3-26)			

Table 3: Healthy Food Availability Index for Dollar Stores

[https://www.google.com/maps/d/edit?mid=1dkdzzgO5Ure-X0volkLu0wpC1RgivKw\\_&ll=32.79006400553288%2C-97.34901713393569&z=11](https://www.google.com/maps/d/edit?mid=1dkdzzgO5Ure-X0volkLu0wpC1RgivKw_&ll=32.79006400553288%2C-97.34901713393569&z=11) [&usp=sharing](#)



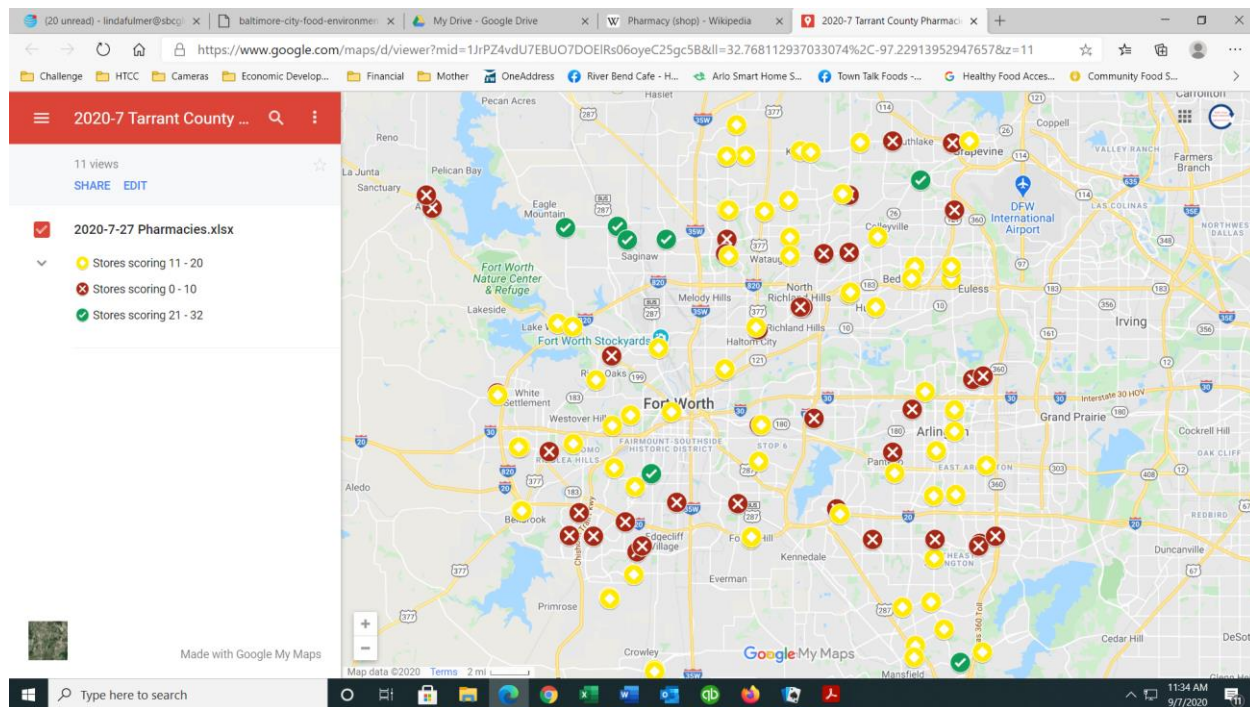
## Pharmacies

Pharmacies are retail stores that sell prescription and over the counter medications along with an array of other household and personal items. In Tarrant County, many pharmacies also sell some food items. All of the pharmacies surveyed were either CVS or Walgreens stores.

	All pharmacies	SNAP only	SNAP and WIC	No SNAP and/or WIC
<b>Number surveyed</b>	111			
<b>Average HFAI score</b>	12.8			
<b>Median HFAI score</b>	12			
<b>Range HFAI score</b>	21 (5 – 26)			

Table 4: Healthy Food Availability Index for Pharmacies

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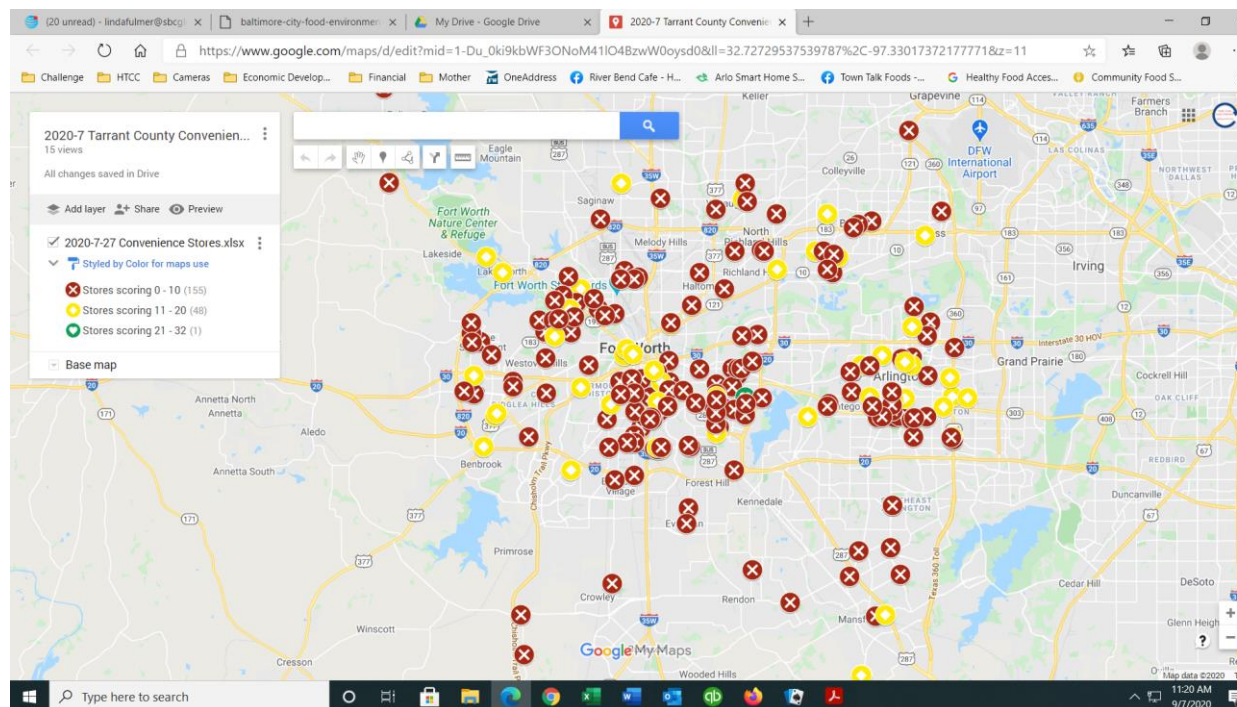
## Convenience Stores

Convenience stores are small retail businesses that stock a range of every day items, including some food items and non-food items. The available food items are often snack foods such as chips, crackers, candy bars, etc.; however in Tarrant County a few offer more grocery items including fresh, frozen, or canned fruits and vegetables. Most of the stores also sell tobacco and alcohol, lotto tickets, and offer money order, ATM, or wire transfer services. Many of Tarrant County's convenience stores are locally owned; however, a few are corporately owned (7-Eleven, Quick Save, Quick Sak).

	All convenience stores	SNAP only	SNAP and WIC	No SNAP and/or WIC
<b>Number surveyed</b>	204			
<b>Average HFAI score</b>	7.7			
<b>Median HFAI score</b>	7			
<b>Range HFAI score</b>	23 (0-23)			

Table 5: Healthy Food Availability Index for Convenience Stores

[https://www.google.com/maps/d/edit?mid=1-Du\\_0ki9kbWF3ONoM41IO4BzwW0oysd0&usp=sharing](https://www.google.com/maps/d/edit?mid=1-Du_0ki9kbWF3ONoM41IO4BzwW0oysd0&usp=sharing)



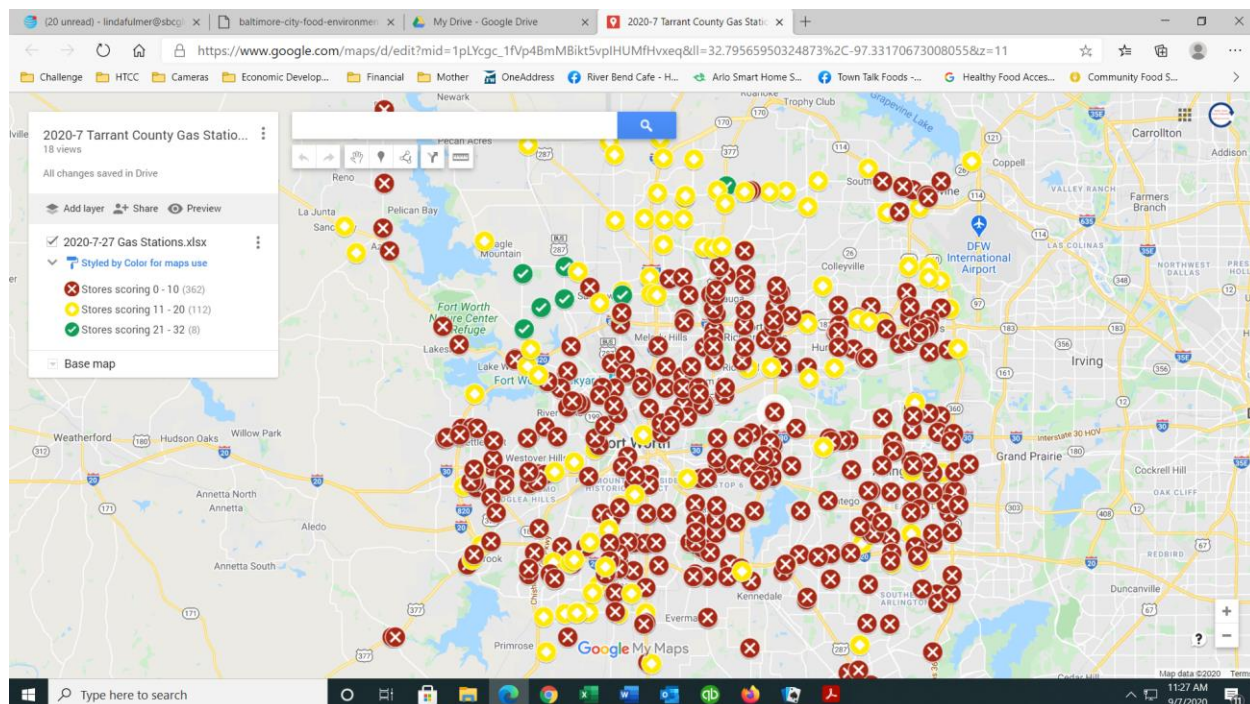
## Gas stations

Gas stations are similar to convenience stores, but with added gas service pumps. The stores offer selections of packaged or processed foods and general non-food items. Gas stations often have limited to no availability of healthy food options due to its convenient style of in-and-out type of stores. While some national companies own and operate the attached store, others appear to license the store to local owners.

	All gas stations	SNAP only	SNAP and WIC	No SNAP and/or WIC
<b>Number surveyed</b>	483			
<b>Average HFAI score</b>	7.9			
<b>Median HFAI score</b>	7			
<b>Range HFAI score</b>	24 (0-24)			

Table 6: Healthy Food Availability Index for Gas Stations

[https://www.google.com/maps/d/edit?mid=1pLYcgc\\_1fVp4BmMBikt5vpIHUMfHvxexq&usp=sharing](https://www.google.com/maps/d/edit?mid=1pLYcgc_1fVp4BmMBikt5vpIHUMfHvxexq&usp=sharing)





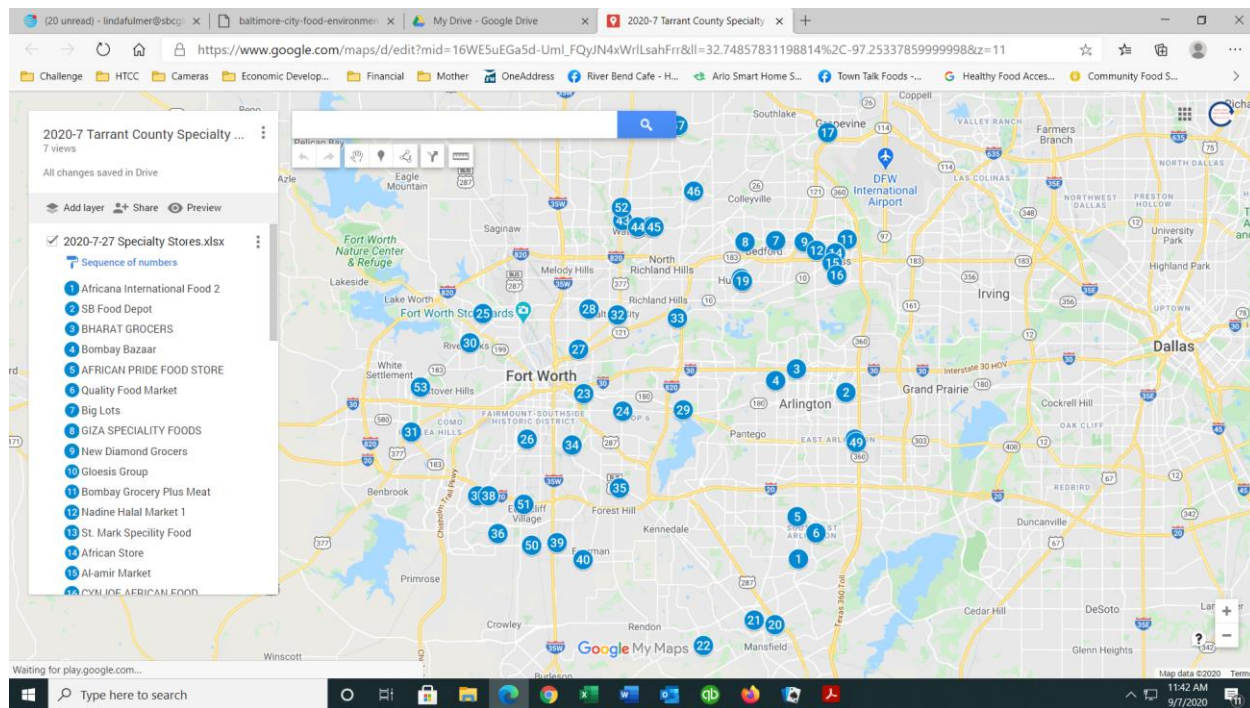
## Specialty Markets

Across Tarrant County we found a number of stores selling a limited array of items; however, the items sold are part of a healthy diet. These included butcher shops selling fresh meats, seafood shops selling fresh fish and seafood, produce markets selling fresh produce, and ethnic stores selling unique items. Due to the limited array of items sold, these stores received low HFAI scores; however, the items they offer can be important to residents looking for those items.

	All specialty markets	SNAP only	WIC only	SNAP and WIC
<b>Number surveyed</b>	53			
<b>Average HFAI score</b>	9.0			
<b>Median HFAI score</b>	9			
<b>Range HFAI score</b>	19 (0-19)			

Table 6: Healthy Food Availability Index for Specialty Markets

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## Gaming Machines and Illegal Gambling

Many of the convenience stores and gas stations we surveyed had slot machines on the premises. These machines are classified as “coin operated amusement machines” and are legal providing they have received an amusement permit from the city and state and the players receive a prize valued \$5 or less. The issue with the machines is that pretty often the stores allow customers to use these for gambling, and payouts can be in the thousands of dollars.

Stores that have six or more machines meet the state’s definition for a game room, and are subject to some regulation through an ordinance adopted by Tarrant County in December 2019. These stores have restrictions on distance from residential areas, and other requirements. The problem we find is that many of the stores with the machines have five or fewer machines, which causes them to not be regulated as game rooms.

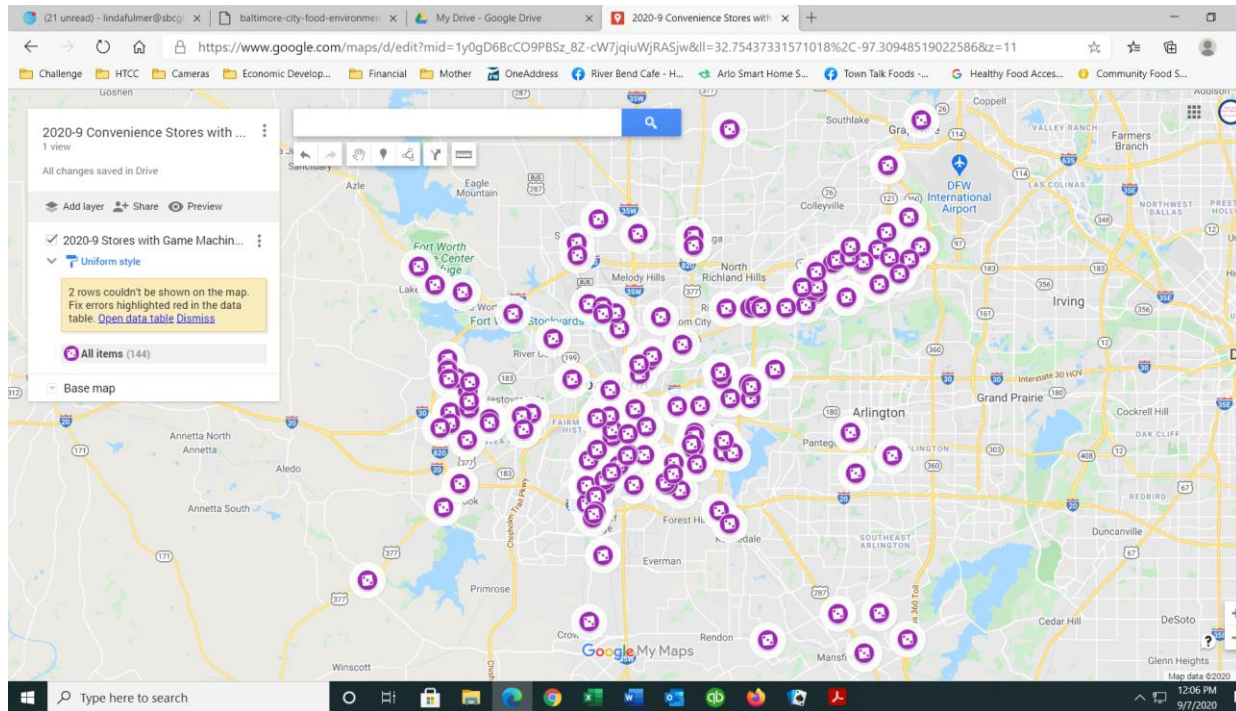
At many of the stores with gaming machines, there are other environmental conditions that are not conducive to a healthy shopping environment. For example, at many of these stores, customers are allowed to smoke indoors, even though there are smoke-free ordinances in force. Customers may drink beer while playing the games. Most importantly, many of the stores pay gambling winnings which are illegal.

This report just contains the convenience and gas station stores included in our survey, and does not include other establishments that have gaming machines such as bars, vape shops, etc. This category of stores has the lowest average and median HFAI scores.

	<b>All stores with game machines</b>	<b>SNAP only</b>	<b>WIC only</b>	<b>SNAP and WIC</b>
<b>Number surveyed</b>	<i>144</i>			
<b>Average HFAI score</b>	<i>6.5</i>			
<b>Median HFAI score</b>	<i>6</i>			
<b>Range HFAI score</b>	<i>17 (0-17)</i>			

Table 7: Healthy Food Availability Index for Stores with Game Machines

[https://www.google.com/maps/d/edit?mid=1y0gD6BcCO9PBSz\\_8Z-cW7jqiuWjRASjw&usp=sharing](https://www.google.com/maps/d/edit?mid=1y0gD6BcCO9PBSz_8Z-cW7jqiuWjRASjw&usp=sharing)



# FINDINGS

While every effort was made to physically visit and survey inside of every store, there were some stores that were skipped for reasons including the store being closed for remodeling or safety concerns. In addition, 51 of the stores on our original list of SNAP vendors for Tarrant County had closed permanently before our surveyors reached them.

Store Type	Number	HFAI Score			% SNAP	% WIC
	Surveyed	Range	Average	Median		
Supermarkets	163	11 (22-32)	31.0	32	100	
Small grocery stores	92	22 (11-32)	23.6	24	100	
Dollar stores	174	22 (3-26)	14.5	14	100	
Pharmacies	111	21 (5-26)	12.8	12	100	
Convenience stores	204	23 (0-23)	7.7	7		
Gas stations	483	24 (0-24)	7.9	7		
Specialty	53	19 (0-19)	9.0	9		

Table 8: Summary of Healthy Food Availability Index for All Stores

((Need to add more. Questions to address include:

1. Given the ranges of scores among convenience stores and gas stations, where were the stores scoring higher located? Were they, for instance, in higher income zip codes or more randomly scattered?
2. Among the convenience stores and gas stations with the above median scores, what were the items most commonly found?
3. Were there differences in scores between corporately owned and independently owned convenience stores and gas stations?
4. How does the mixture of stores and scores vary based on the economic status of a zip code?

## Limitations and Considerations



# APPLYING FOOD ENVIRONMENT STUDY IN PRACTICE

Adopting Healthy Food Environment Strategy

# CONCLUSION

Based on the most recently published data from the Behavioral Risk Factor Surveillance System survey for Tarrant county in 2015.

# REFERENCES

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<sup>i</sup> <https://www.ers.usda.gov/amber-waves/2011/december/data-feature-mapping-food-deserts-in-the-us/#:~:text=What%20Is%20a%20Food%20Desert%3F&text=ERS%27s%20Food%20Desert%20Locator%20is,are%20defined%20as%20food%20deserts>. Accessed 9-7-2020.