

# - CHAPTER 7 - MARKET ANALYSIS



## Introduction

Food deserts are areas in which there is a lack of fresh and healthy food options within a reasonable, convenient distance. Normally, these food deserts are full of fast food restaurants and convenience-type stores but are lacking grocery stores or supermarkets.

Some typical methods traditionally used to try and eliminate these deserts are: improvements to the business climate, more participation in WIC or SNAP programs, increased public transit in order to take people to the food, increased education about healthy food choices in public schools, and partnering with nonprofits to affect policy change at a state or federal level. Although these solutions are being implemented in various cities all over the world, there seems to be a gap in implementation policy surrounding density models—attracting new supply by increasing the density of demand. Adding housing units in a neighborhood would effectively increase demand within the area, and, in theory, could make these fresh-food deserts more attractive to grocers. The opportunity to address food deserts within a city is particularly relevant when updating the comprehensive plan, as this is the prime opportunity to rethink neighborhoods.

This analysis investigates six neighborhoods within the City of Richmond that are labeled as food deserts. In each neighborhood, quantitative analyses provide estimates of how many additional households (and, in turn, additional income) are required to economically support a neighborhood grocery store of 44,094 square feet<sup>1</sup> or 25,000 square feet<sup>2</sup>.

The analyses showed that four of six neighborhoods may support a single grocery store of 25,000 square feet with current populations. An increase of 1,000 households earning the regional median household income would allow almost all trade areas to support a smaller footprint supermarket. However, few operators of supermarkets of that size exist, and most operators would want to see a larger market than what may barely support one store. Although none of the neighborhoods in question could support a 44,094 square foot grocery store with current populations, three neighborhoods currently have around 80 percent of the minimum potential demand.

If each neighborhood is to be able to fully economically support a store of 44,094 square feet, they would need to increase the amount of demand in their trade areas by increasing the number of households (and by extension, housing density). Around 1,000 additional households earning the regional median household income would create the demand needed to support a single grocery store in the Midlothian Turnpike trade area, and 2,000 additional households would push the Brookland Park and Church Hill trade areas over the demand threshold.

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<sup>1</sup> The median gross leasable area of U.S. neighborhood supermarkets according to *Dollars and Cents of Shopping Centers/The SCORE 2008* (Urban Land Institute).

<sup>2</sup> The estimated size of a smaller footprint, urban neighborhood supermarket.

Fulton Hill, with the lowest level of demand in its trade area, would require an additional 4,000 households to support an average-sized supermarket.

One implication of these findings is the possibility of density, or additional housing units within a trade area, as a potential solution for food deserts. However, this assumes a store in a single neighborhood is supported solely by residents and commuters driving through the neighborhood. If one assumes instead that some customers will drive from adjacent neighborhoods—effectively extending the boundaries of a trade area—the number of additional households in a single neighborhood that are required to support a grocery store of 44,094 square feet would fall (potentially below the demand threshold required to support a single store).

## Market Analyses

A market analysis is a mathematical tool used to calculate market potential. It is critical to determine the current market for food in each trade area to ascertain whether locating a grocery store within the neighborhood is possible without densification. The purpose of these market analyses is to determine the balance of food supply and food demand within each trade area.

Each of the six neighborhoods evaluated in this report is unique and required detailed analysis of geography, demographics, income, and area retail supply and demand. To do so, convenience trade areas were mapped out for each neighborhood using GIS. These convenience trade areas approximate the distance an individual is willing to travel for convenience grocery items, such as milk or eggs. Distance, block groups, and travel time were used as factors to determine the convenience trade areas within each neighborhood. Block groups heavily influenced trade area boundaries in order to reflect income data accordingly. More details on the methodology utilized to draw trade areas can be found in the technical appendix.

The market analyses determine the number of potential grocery stores that are able to locate in each trade area with households at their present levels and are detailed in the discussion of each neighborhood. These calculations were also conducted to see how the addition of 1,000 households or 5,000 households would impact total demand in each trade area. The purpose of this was to measure the impact of increasing population, or densification, on market potential—to see if the addition of households would increase unmet demand to a level that may attract a supermarket operator.

## Brookland Park Boulevard

Brookland Park Boulevard runs east-to-west through the northern section of Richmond. Although there are many convenience store options, the area lacks a nearby healthy, affordable grocery option. Residents without cars must travel a considerable distance by public transit to the closest grocery store. Otherwise, they are left to one of more than 15 convenience stores within the trade area. The average annual daily traffic count (ADT)<sup>3</sup> for Brookland Park Boulevard was broken into two segments: from Chamberlayne Avenue to the Richmond-Henrico Turnpike (8,900 vehicles) and from the Richmond-Henrico Turnpike to Dill Avenue (7,300 vehicles).

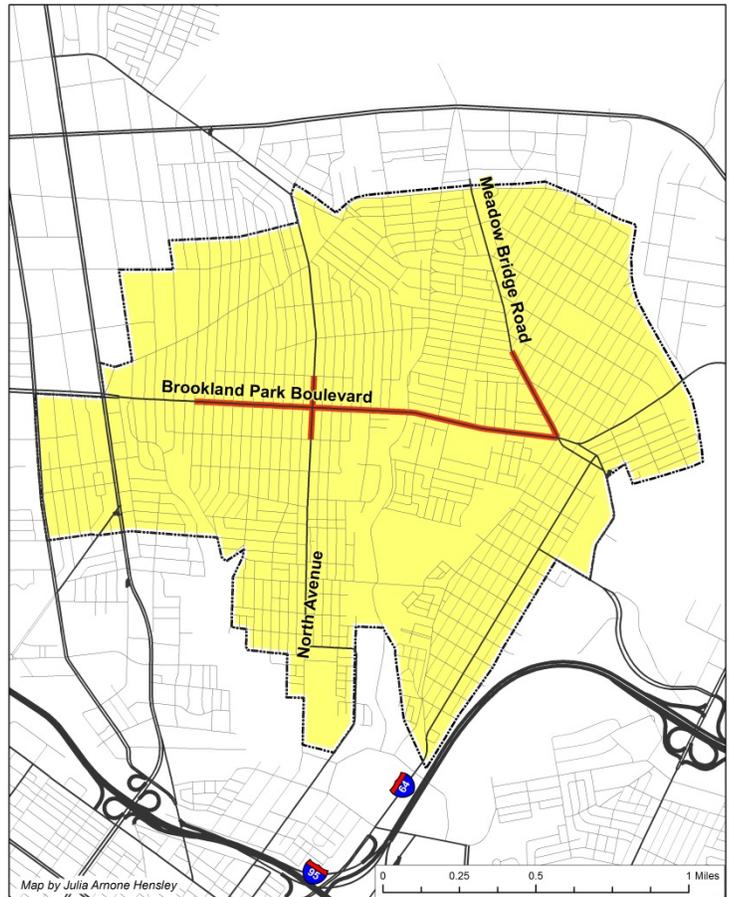
### Trade Area

The Brookland Park Boulevard convenience trade area extends north of the Boulevard to Ladies Mile Road, and encompasses the Ginter Park Terrace, Brookland Park, and Providence Park neighborhoods. The trade area also includes the neighborhoods of Green Park and Northern Barton Heights to the south, and is surrounded by block groups to the east, west, and south. The convenience trade area totals 2.48 square miles as shown in Map 47.

### Income Analysis

Approximately 52% of households within the Brookland Park trade area earn below the City of Richmond median household income of \$44,331<sup>4</sup>. The median household income within the trade area falls within the \$30,000 to \$39,999 income range. Fig. 53 details the income distribution in the Brookland Park convenience trade area.

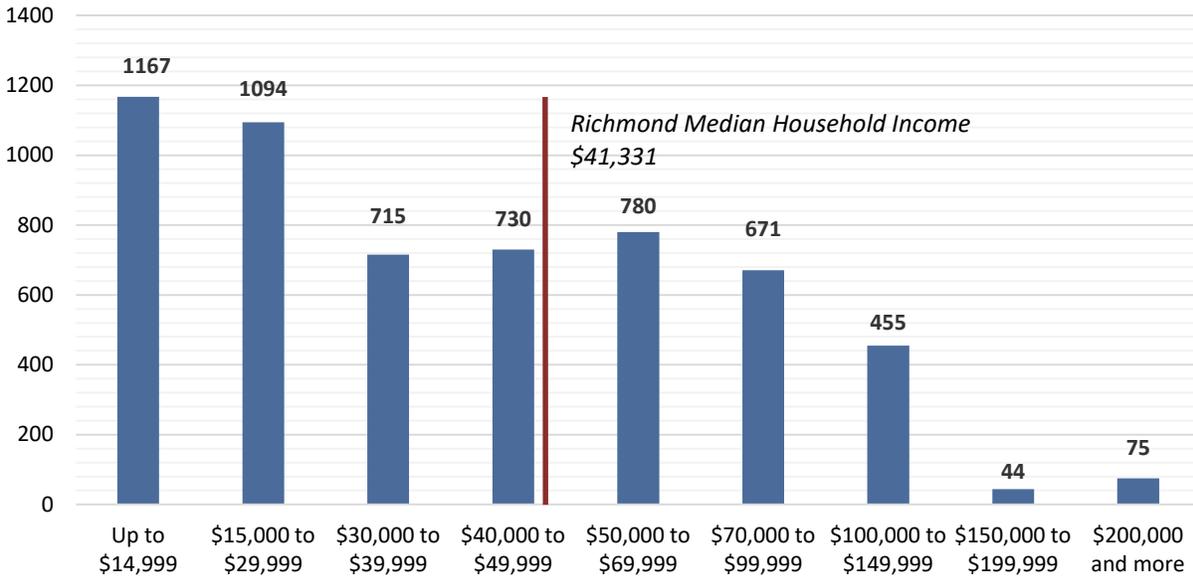
**Map 47 - Brookland Park Boulevard Convenience Trade Area**



<sup>3</sup> Virginia Department of Transportation, 2015. Accessible at <http://www.virginiadot.org/info/ct-trafficcounts.asp>.

<sup>4</sup> 2010-2014 American Community Survey 5-year Estimates

Fig. 53 - Brookland Park Boulevard Households by Income



**Market Analysis**

With the current number of households, the Brookland Park convenience trade area could support 0.8 grocery stores of 44,094 square feet and 1.3 grocery stores of 25,000 square feet. Put simply, the area currently meets about 80 percent of the demand required to support a single, average-sized supermarket, and exceeds the demand threshold to support a smaller supermarket. An additional 1,000 households<sup>5</sup> would allow the area to support 0.9 stores of 44,094 square feet. The additional demand from adjacent neighborhoods could make such a store viable. Adding 5,000 households to the trade area would push potential demand well above that needed to support a single supermarket. See Table 27 for a comparison of how the addition of households to the trade area impacts potential demand and the number of supportable stores.

Tab. 27 - Brookland Park Boulevard Number of Potential Grocery Stores		
	Store Size	
	44,094 sq ft	25,000 sq ft
Current number of households	0.8	1.3
With additional 1,000 households	0.9	1.6
With additional 5,000 households	1.6	2.8

<sup>5</sup> Additional households are assumed to earn the regional median household income of \$59,677 (2010-2014 ACS 5-year Estimates).

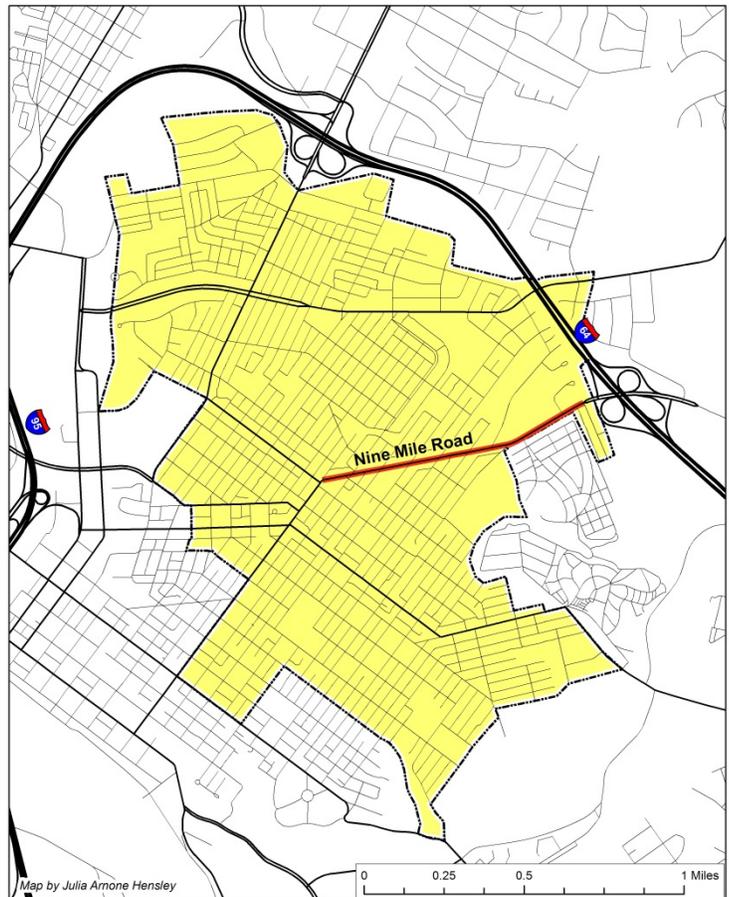
## Church Hill/Nine Mile Road

Church Hill is located in the eastern section of the city. Nine Mile Road runs west from the Henrico County line into the Fairmount neighborhood, intersecting with 25<sup>th</sup> Street and Fairmount Avenue. The area directly surrounding Nine Mile Road has over 25 convenience stores. Two stores qualify as supermarkets but are located on opposite edges of the neighborhood. The ADT of Nine Mile Road from 25<sup>th</sup> Street to the eastern city line is 8,800 vehicles per day, which is the smallest ADT figure of all the study areas.

### Trade Area

The Church Hill/Nine Mile convenience trade area extends north of Nine Mile Road to include the Whitcomb, Eastview, Mosby Court, Fairfield, Fairmount, East End, Peter Paul, Woodville, and Creighton neighborhoods. It also follows block group boundaries for income purposes. The trade area is further limited by I-64 to the north and northeast. The trade area extends south into the Church Hill and Oakwood neighborhoods, but it avoids Oakwood Cemetery. The trade area continues to follow block groups to the south and west, excluding the Richmond City Jail and courthouse. Map 48 illustrates the boundaries of the trade area. It is relatively large at 2.02 square miles.

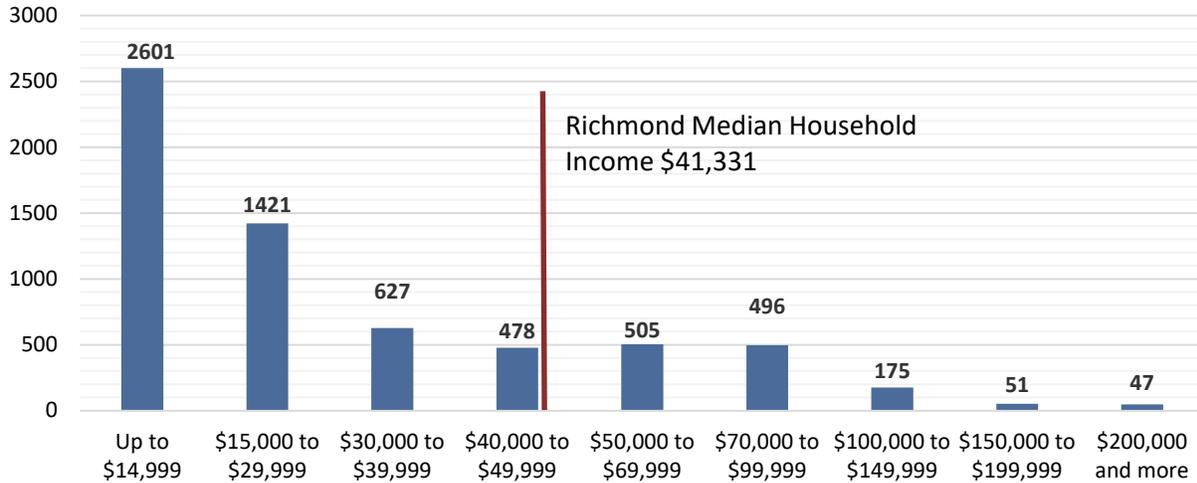
**Map 48 - Church Hill/Nine Mile Convenience Trade Area**



## Income Analysis

Approximately 73% of households within the Church Hill/Nine Mile trade area earn below the City of Richmond median household income. The median household income within the trade area falls within the \$15,000 to \$29,999 income range. See Fig. 54 for a detailed breakdown of household income in the trade area.

Fig. 54 - Church Hill/Nine Mile Households by Income



## Market Analysis

At the current household levels, the Church Hill/Nine Mile convenience trade area meets the demand threshold to support a smaller 25,000 square foot supermarket, and it has around 80 percent of the demand needed to support a larger 44,094 square foot store. An additional 1,000 households<sup>6</sup> would push the area to 90 percent of the 44,094 square foot supermarket threshold, and it may be possible that including potential demand from adjacent neighborhoods would make a 44,094 square foot store viable. An additional 5,000 households would increase demand to well above the threshold needed to support an average-size supermarket. See Tab. 28 for a summary of these numbers.

Tab. 28 - Church Hill/Nine Mile Number of potential grocery stores		
	Store Size	
	44,094 sq ft	25,000 sq ft
Current number of households	0.8	1.3
With additional 1,000 households	0.9	1.6
With additional 5,000 households	1.6	2.8

<sup>6</sup> Additional households are assumed to earn the regional median household income of \$59,677 (2010-2014 ACS 5-year Estimates).

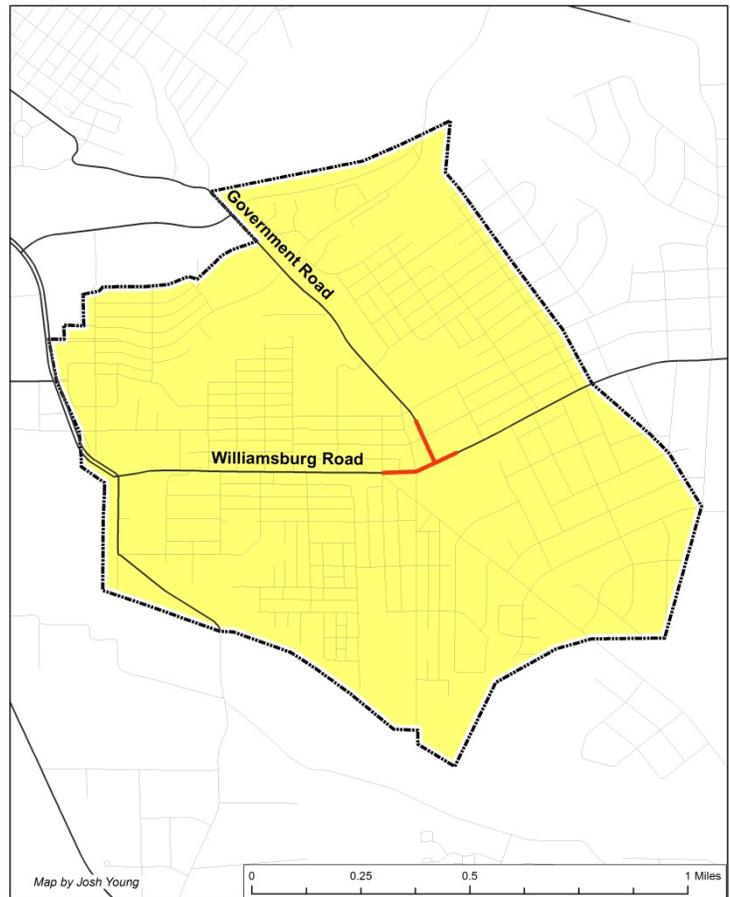
## Greater Fulton

Greater Fulton is located on steep grades in the eastern section of the city. It is primarily residential and includes pockets of lower-income housing. The ADT for Williamsburg Road from Hatcher Street to Government Road is 9,400. The ADT from Government Road to the eastern city line is 10,000 vehicles.

### Trade Area

At 1.27 square miles, the Greater Fulton trade area is the smallest of the six study areas. Given that it is not significantly denser in housing or income than any other trade area, potential demand is also lower. A grocery store is located east of the trade area off of Charles City Road, but it is difficult to access via public transportation. This trade area is constrained by steep grades and infrastructure, such as rail lines.

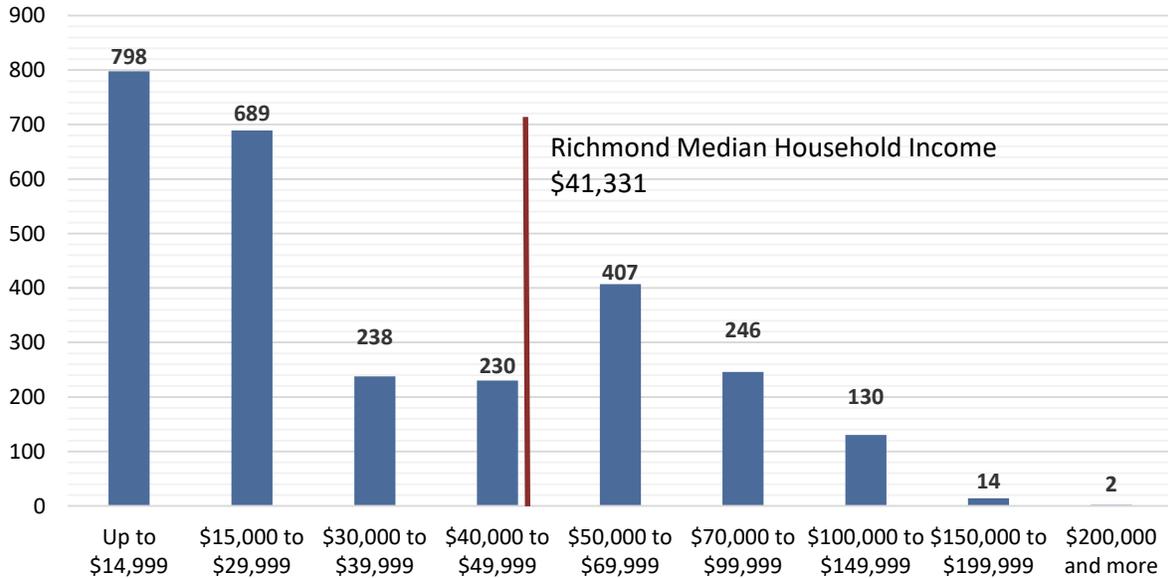
**Map 49 – Greater Fulton Convenience Trade Area**



## Income Analysis

Approximately 63% of households within the Greater Fulton trade area earn below the City of Richmond median household income. The median household income within the trade area falls within the \$15,000 to \$29,999 income range. Fig. 54 breaks down income distribution in the Greater Fulton convenience trade area.

Fig. 54 - Fulton Hill Households by Income



## Market Analysis

At current household levels, the Greater Fulton convenience trade area cannot support a supermarket of average or smaller size. With an additional 1,000 households<sup>7</sup>, the area approaches 90 percent of demand needed to support a 25,000 square foot supermarket, the remainder of which could potentially be met by households in adjacent neighborhoods. An additional 5,000 households would push the trade area beyond the needed demand to support single supermarket of 44,094 square feet. Tab. 29 outlines these scenarios.

Tab. 29 – Greater Fulton: Number of potential grocery stores		
	Store Size	
	44,094 sq ft	25,000 sq ft
Current number of households	0.3	0.6
With additional 1,000 households	0.5	0.9
With additional 5,000 households	1.2	2.1

<sup>7</sup> Additional households are assumed to earn the regional median household income of \$59,677 (2010-2014 ACS 5-year Estimates).

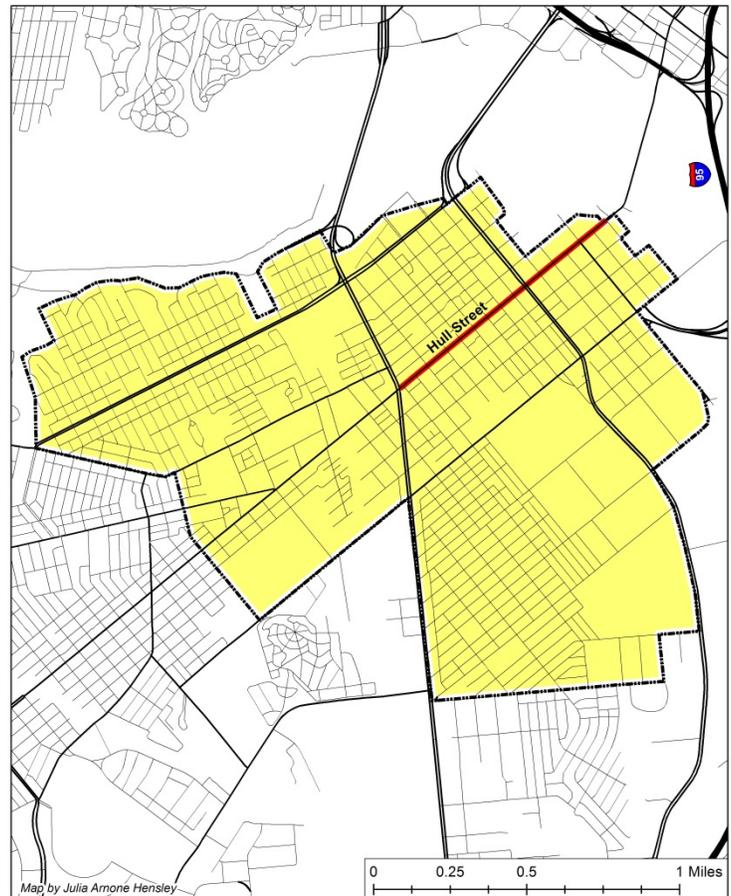
## Hull Street

Hull Street is located in the southern part of the city and is one of the more heavily trafficked streets in the six study areas. The ADT for Hull Street is cut into two segments: from 1<sup>st</sup> Street to Commerce Road (20,000 vehicles) and from Commerce Road to Cowardin Avenue (14,000 vehicles). No grocery stores operate in the trade area.

### Trade Area

The Hull Street trade area follows the residential areas along the river to the north and extends as far southwest as Forest Hill Avenue. This trade area directly follows block groups to form the western and southern boundaries. It includes the neighborhoods of Swansboro, Woodland Heights, Blackwell, and Manchester. Map 50 illustrates the trade area boundaries. It encompasses 2.34 square miles.

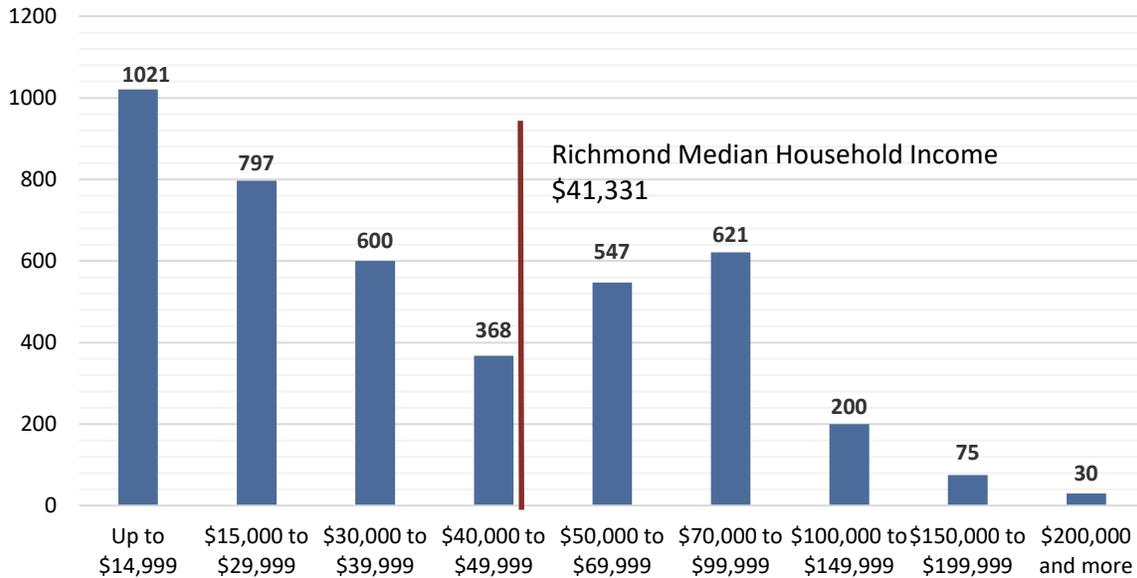
**Map 50 - Hull Street  
Convenience Trade Area**



## Income Analysis

Approximately 57% of households within the Hull Street trade area earn below the City of Richmond median household income. The median household income within the trade area falls within the \$30,000 to \$39,999 income range. See Fig. 55 for a summary of household incomes in the trade area.

Fig. 55 - Hull Street Households by Income



## Market Analysis

At current household levels, the Hull Street convenience trade area could support a smaller supermarket of 25,000 square feet. With an additional 1,000 households<sup>8</sup>, the trade area reaches 70 percent of the demand needed for a 44,094 square foot supermarket. The addition of 5,000 households would allow the trade area to support at least one average-sized supermarket or two smaller supermarkets (see Tab. 30).

Tab. 30 - Hull Street Number of potential grocery stores		
	Store Size	
	44,094 sq ft	25,000 sq ft
Current number of households	0.6	1.0
With additional 1,000 households	0.7	1.3
With additional 5,000 households	1.4	2.5

<sup>8</sup> Additional households are assumed to earn the regional median household income of \$59,677 (2010-2014 ACS 5-year Estimates).

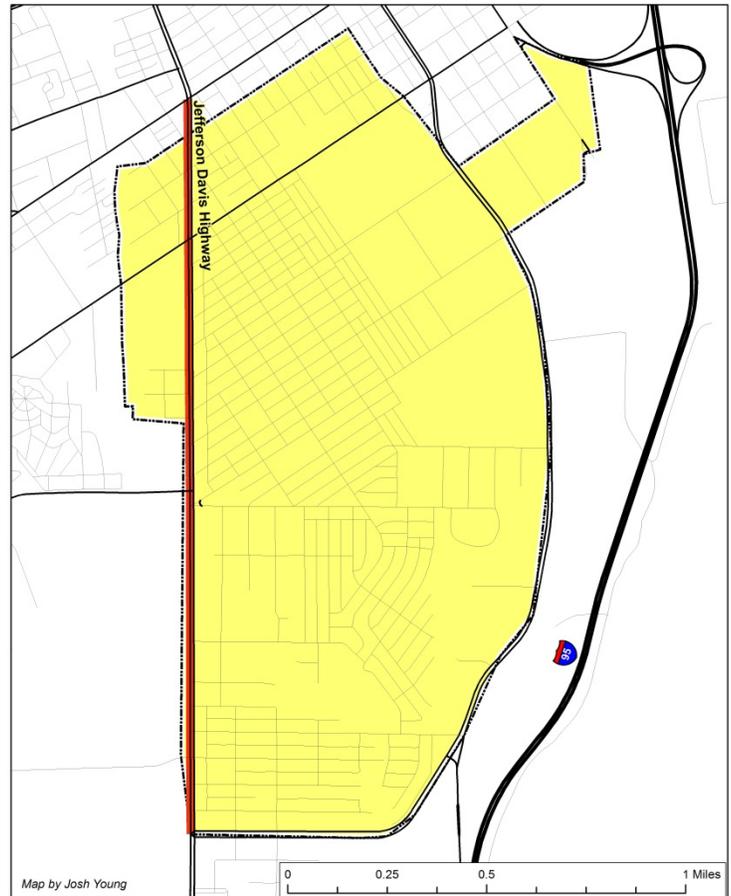
## Jefferson Davis Highway

Jefferson Davis Highway is home to mostly industrial and heavy commercial uses. The corridor itself does not contain many residential buildings, but residents in the surrounding neighborhoods lack convenient access to a grocery store. The ADT for Jefferson Davis Highway from Bellemeade Road northwards to Hopkins Road is 13,000. From Hopkins Road to Hull Street, the ADT is 18,000.

### Trade Area

The Jefferson Davis convenience trade area totals 1.71 square miles, making it the second smallest trade of the six investigated. It overlaps the Hull Street trade area to the north from Decatur Street south to Harwood Street. The trade area is shown in Map 50.

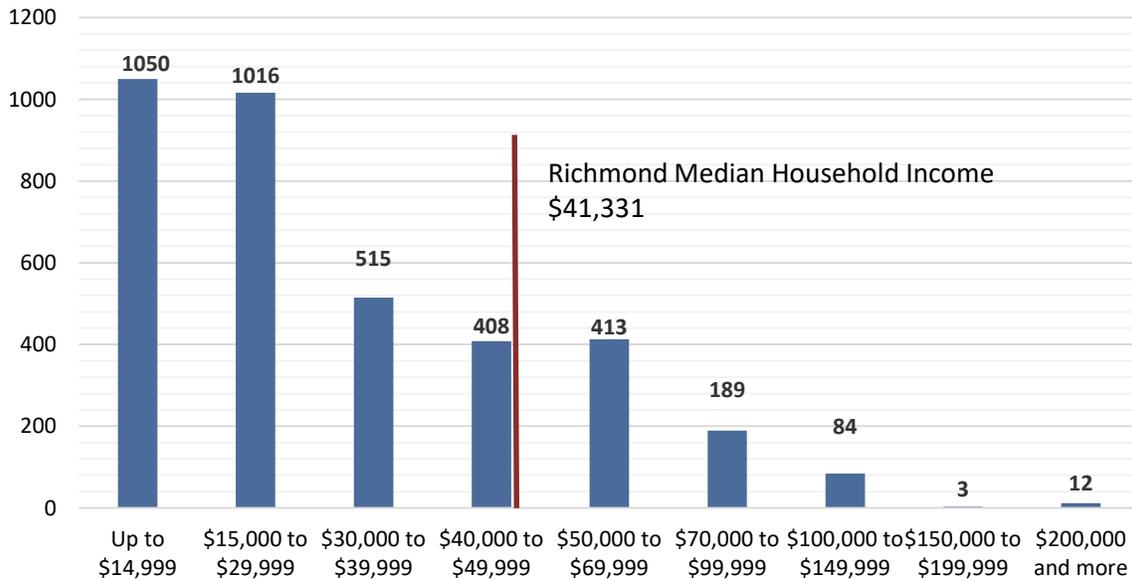
**Map 50 - Jefferson Davis Highway  
Convenience Trade Area**



### Income Analysis

Approximately 70% of households within the Jefferson Davis trade area earn below the City of Richmond median household income. The median household income within the trade area falls within the \$15,000 to \$29,999 income range. Fig. 56 details the income of all block groups in the trade area.

Fig. 56 Jefferson Davis Highway Households by Income



### Market Analysis

At the current number of households, the Jefferson Davis trade area could support 0.4 grocery stores of 44,094 square feet and 0.8 stores of 25,000 square feet. With an additional 1,000 households<sup>9</sup>, the area could support a single store of 25,000 square feet. An additional 5,000 households would create the demand needed for a supermarket of 44,094 square feet. See Tab. 31 for further details.

Tab. 31 - Jefferson Davis Highway Number of potential grocery stores		
	Store Size	
	44,094 sq ft	25,000 sq ft
Current number of households	0.4	0.8
With additional 1,000 households	0.6	1.1
With additional 5,000 households	1.3	2.2

<sup>9</sup> Additional households are assumed to earn the regional median household income of \$59,677 (2010-2014 ACS 5-year Estimates).

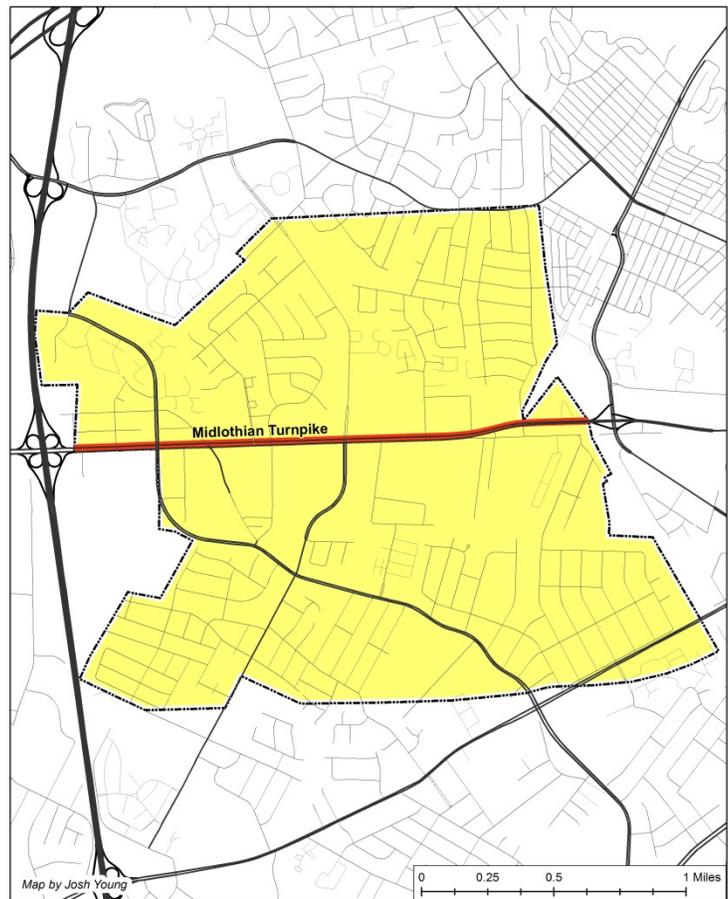
## Midlothian Turnpike

Midlothian Turnpike is the most trafficked street of the six study areas. The ADT for Midlothian Turnpike is broken into two segments: from Chippenham Parkway to Carnation Street (51,000) and from Carnation Street to Belt Boulevard (26,000). Multiple grocery stores sit just outside the Midlothian Turnpike trade area boundary.

### Trade Area

The Midlothian Turnpike convenience trade area extends to the north and south of the corridor. It includes the neighborhoods of Beaufont, Westover, and much of the residential area south of the Turnpike. The trade area follows block groups along the perimeters. It is the largest trade area of the six determined, measuring 3.27 square miles (see Map 52).

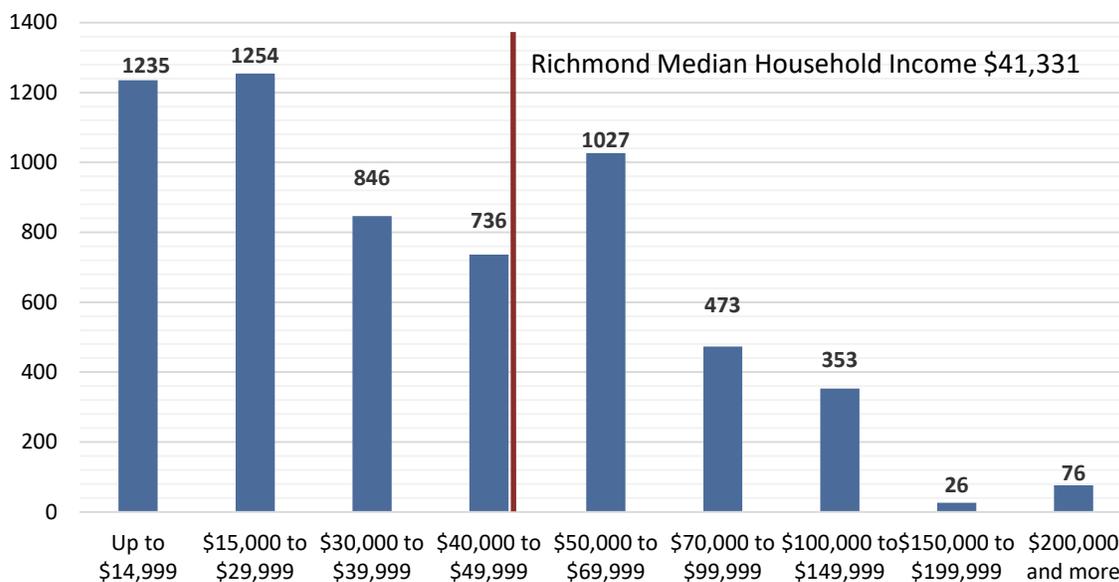
**Map 52 - Midlothian Turnpike  
Convenience Trade Area**



## Income Analysis

Approximately 55 percent of households within the Midlothian Turnpike trade area earn below the City of Richmond median household income. The median household income within the trade area falls within the \$30,000 to \$39,999 income range. Fig. 57 details the income makeup of all block groups in the trade area.

**Fig. 57 - Midlothian Turnpike Households by Income**



## Market Analysis

Given current household numbers, the Midlothian Turnpike convenience trade area has sufficient potential demand to support a supermarket of 25,000 square feet and about 80 percent of potential demand needed to support a supermarket of 44,094. Adding 1,000 households<sup>10</sup> would push the trade area to the approximate level of demand required to support an average-sized supermarket. With an additional 5,000 households, the trade area could support 1.6 average-sized supermarkets and nearly 3.0 smaller supermarkets. See Tab. 32 for a breakdown of these figures.

Tab. 32 - Midlothian Turnpike Number of potential grocery stores		
	Store Size	
	44,094 sq ft	25,000 sq ft
Current number of households	0.8	1.4
With additional 1,000 households	1.0	1.7
With additional 5,000 households	1.6	2.9

<sup>10</sup> Additional households are assumed to earn the regional median household income of \$59,677 (2010-2014 ACS 5-year Estimates).

## Market Analyses Conclusion

As shown in Table 33, most neighborhoods may support a 25,000 square foot grocery store given existing household incomes and densities, the Fulton Hill and Jefferson Davis Highway trade areas being exceptions. With an additional 1,000 households<sup>11</sup>, the Jefferson Davis Highway trade area would also be able to support a grocery store of 25,000 square feet. The Fulton Hill trade area would have around 80 percent of the potential demand needed to support a small grocer.

In order to support a supermarket of 44,094 square feet—the median area of neighborhood supermarkets—all six trade areas would need to add more than 1,000 households earning the regional median household income. However, the Brookland Park and Greater Fulton trade areas could support an average-sized supermarket with the addition of 1,000 households and added potential demand from adjacent neighborhoods.

Adding 5,000 households would allow almost all trade areas to support a 44,094 square foot supermarket. Fulton Hill would have about 90 percent of the necessary potential demand to support an average-sized supermarket. This level of density would support more than two grocery stores of 25,000 square feet in all trade areas except Fulton Hill and Jefferson Davis.

**Tab. 33 - Potential Grocery Stores: All Trade Areas**

Trade areas	Current number of households		With additional 1,000 households		With additional 5,000 households	
	Store Size		Store Size		Store Size	
	44,094 sq ft	25,000 sq ft	44,094 sq ft	25,000 sq ft	44,094 sq ft	25,000 sq ft
<i>Brookland Park</i>	0.8	1.3	0.9	1.6	1.6	2.8
<i>Church Hill/Nine Mile</i>	0.8	1.3	0.9	1.6	1.6	2.8
<i>Fulton Hill</i>	0.3	0.6	0.5	0.9	1.2	2.1
<i>Hull Street</i>	0.6	1.0	0.7	1.3	1.4	2.5
<i>Jefferson Davis</i>	0.4	0.8	0.6	1.1	1.3	2.2
<i>Midlothian Turnpike</i>	0.6	1.4	1.0	1.7	1.6	2.9

Increasing potential demand by increasing housing density remains a long-term solution, but a potential solution nonetheless. Density-oriented housing policies paired with increases in household incomes could create the demand needed to attract developers and grocery store operators to often-overlooked urban markets in a shorter timeframe. Alternatively, with modest increases in housing density smaller footprint stores represent a viable commercial opportunity in many neighborhoods.

<sup>11</sup> Additional households are assumed to earn the regional median household income of \$59,677 (2010-2014 ACS 5-year Estimates).