

JEFFERSON DAVIS HIGHWAY CORRIDOR LAND USE OPTIMIZATION PLAN

PREPARED FOR THE CITY OF RICHMOND

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Vision Statement

Supporting its residents and visitors with ample opportunities for employment, shopping, and superb living and recreation, the corridor thrives with a foundation in its industrial roots. The various land uses of the Jefferson Davis Highway Corridor - residential, commercial, industrial, and green and open space - harmonize to provide the surrounding community with the highest quality of life possible.

Executive Summary

The Jefferson Davis Highway Corridor Land Use Optimization Plan sets forth analyses of existing land uses - residential, commercial, industrial, and green and open space - in the area, and provides recommendations for achieving the best use of the great potential presented by the corridor. The plan's foundation rests on an examination of existing conditions along the corridor, including multiple site visits and data collection from a wide range of government and community resources. Through a market analysis of each type of land use, we produced various goals, objectives, and actions. These items serve as recommendations to be considered by the City and the Jefferson Davis community in future planning.

Summary of Goals by Land Use:

Residential

A main priority for the residential development should be to diversify the housing stock throughout the corridor as well as the tenure of residents. In addition, the quality of housing needs to be improved.

Commercial

Commercial revitalization will be achieved in the corridor by leveraging its advantages and resources to attract new business, focusing commercial development on competitive retail niches, and emphasizing development on both existing nodes of activity and sites of distinction.

Industrial

Most important is to augment and improve the educational attainment level of the industrial labor force in the corridor. In addition, attracting new, advanced manufacturing industries to the area is key to its economic development.

Green & Open Space

Above all, the quality and maintenance of existing park spaces and facilities should be improved, after which new green and open spaces can be installed in the area. Additionally, the utility of these spaces should be strengthened through community outreach.

SECTION 3

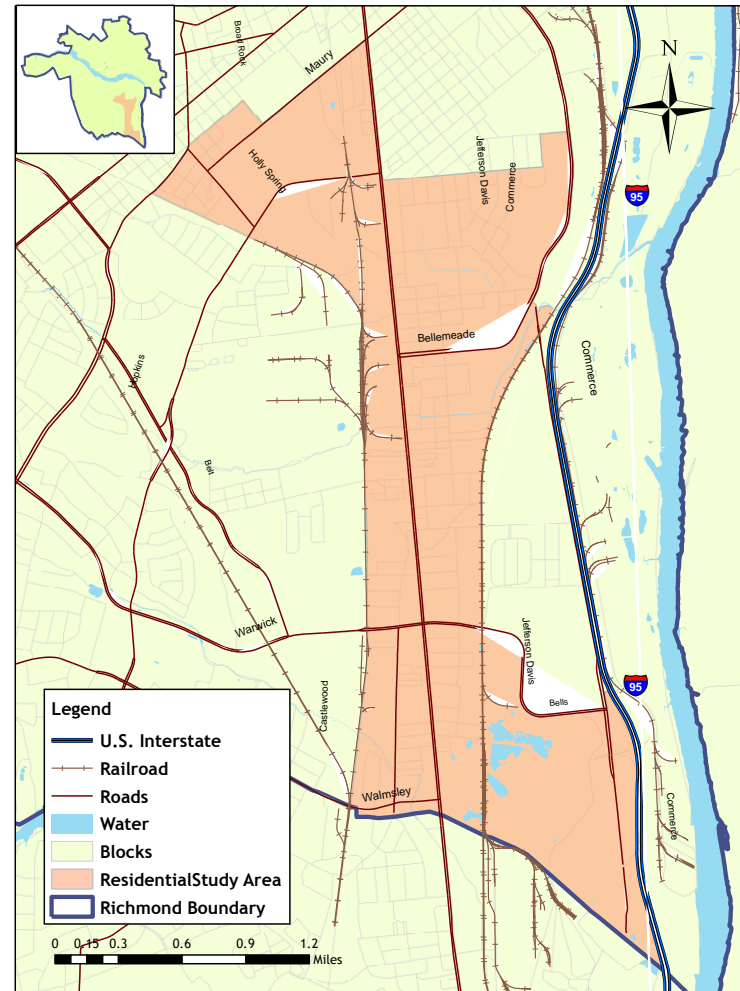
Existing Conditions

SECTION 3.1

RESIDENTIAL

Study Area

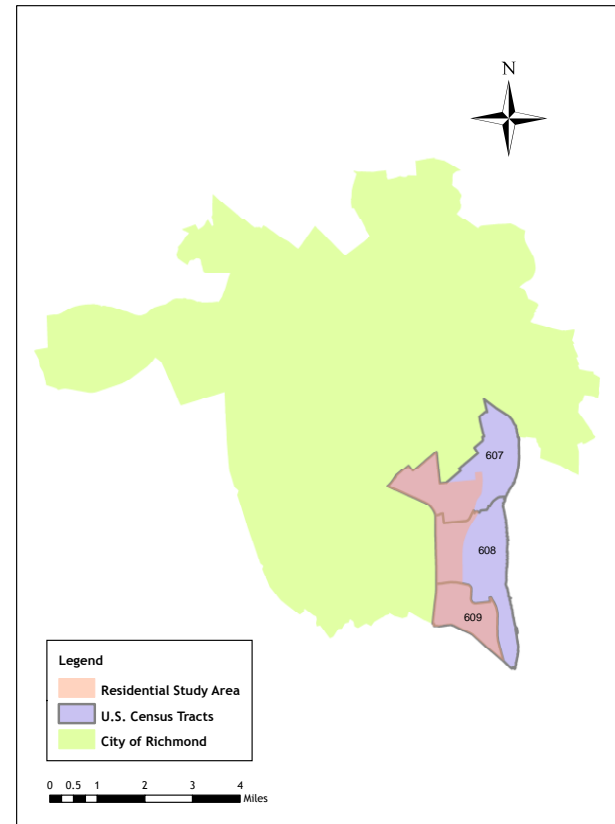
The residential analysis covers an area of approximately 2,173 acres starting north at Maury Street and Harwood Avenue and extending 3.65 miles south on Jefferson Davis Highway to Walmsley Boulevard. The western boundary runs along the CSX railroad; and, the eastern boundary roughly borders Commerce Avenue on the northeast, runs southerly along the CSX railroad, and finally runs south along Interstate 95. The study area includes census block groups 1, 2, 4 and 5 of census tract 607; census block groups 1 and 2 of census tract 608; and, census block group 1 of census tract 609.



Map 3.1.1: Residential Study Area
Source: City of Richmond

Several existing impediments in all directions determined the residential study area. The east and west boundary was delineated as shown Map 3.1.1 because there is substantial existing privately owned industrial development along the corridor outside of the study area. The northern boundary was assessed based on a previously adopted redevelopment plan for the Blackwell community. This redevelopment plan, specifically, outlines a residential revitalization effort for the neighbor that is currently under construction. Also, the Oak Grove neighborhood, directly north of Harwood Avenue, consists of an existing elementary school and housing stock in good condition. Finally, the southern boundary of the study area is Walmsley Boulevard, which is the southernmost boundary of the City of Richmond before entering Chesterfield County.

Analysis Methodology. Where available, 2010 census data was analyzed at the block group level, which delineates the residential study area. In some instances where only census tract data was available, it was assumed that the data applicable to a census tract was also applicable to the block group(s) that is(are) contained within each census tract. Map 3.1.2 shows the target study area and its spatial relationship to census tracts. Further, historical data was also gathered at the census tract level in order to maintain consistent comparisons of units of geography over time - as boundaries of block groups have changed over the 20-year analysis period.



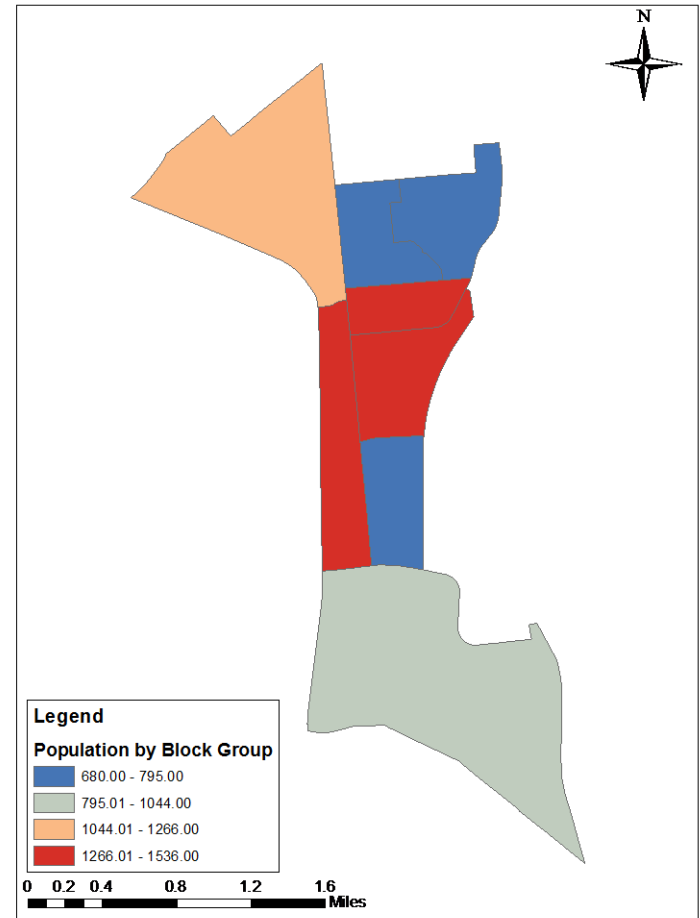
Map 3.1.2: Residential Study Area & Spatial Relation to Census Tracts

Source: www.nhgis.org

Population. According to Map 3.1.3 the average population by census block groups ranges from 680 individuals to roughly 1,536 individuals. The majority of the population is centered within the residential study area from approximately Bellemeade Road south to Bells Road with a population of

1,266 to 1,536 (See Map 3.1.3). Table 3.1.1 reflects that there has been an overall gradual decrease in the population of the residential study area as a whole from 1990 to 2010. Census Tract 609, the southernmost area, is the only area that has had any population increase over the last 20 years. Overall there has been a net decrease of 31% in population throughout the residential study area from 1990 to 2010. As compared to the City of Richmond, which has seen a small increase of 1% over the same time period, the area as a whole is well behind the growth trends of the city on average (See Table 3.1.1).

TABLE 3.1.1: POPULATION CHANGE				
	Census Tract 607	Census Tract 608	Census Tract 609	City of Richmond
1990	5,559	4,827	1,248	203,056
2000	5,268	3,436	1,298	197,790
2010	5,010	3,585	1,311	204,214
% Net Change (1990 - 2010)	-10%	-26%	5%	1%
Source: U.S. Census Bureau ('90, '00, '10 Census SF1 - 100%)				



Map 3.1.3: Population by Block Group
Source: www.nhgis.org

Demographics

Racial Distribution. The residential study area has seen an increase in the Hispanic population while the White population has decreased. Specifically from 1990 to 2010, the Hispanic population has increased by 197% in Census Tract 607 and 4250% in Census Tract 609; however, Hispanics are still the minority in Census Tracts 607 and 609 (See Figure 3.1.1 and 3.1.2). In addition as shown in Figure 3.1.3, the African American population has decreased in Census Tract 607 and 608 but there has been an increase in the African American population in Census Tract 609. When compared to the City, the Hispanic population only makes up 6.3% of the total; whereas, the White and African American population make up the majority at 40.8% and 50.6% of the total population, respectively. This means that 6.3% of the Hispanic population in the City is largely concentrated along the Jefferson Davis Highway corridor (See Appendix A-1).

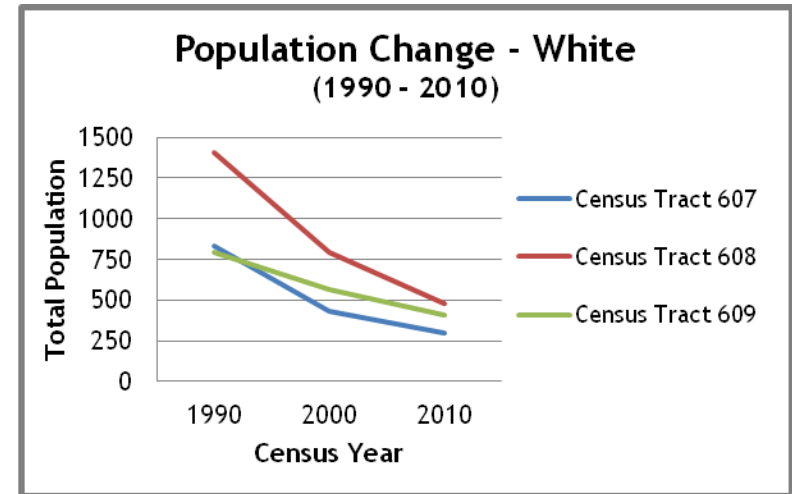


Figure 3.1.1

Source: U.S. Census (2010 Census SF1 - 100%)

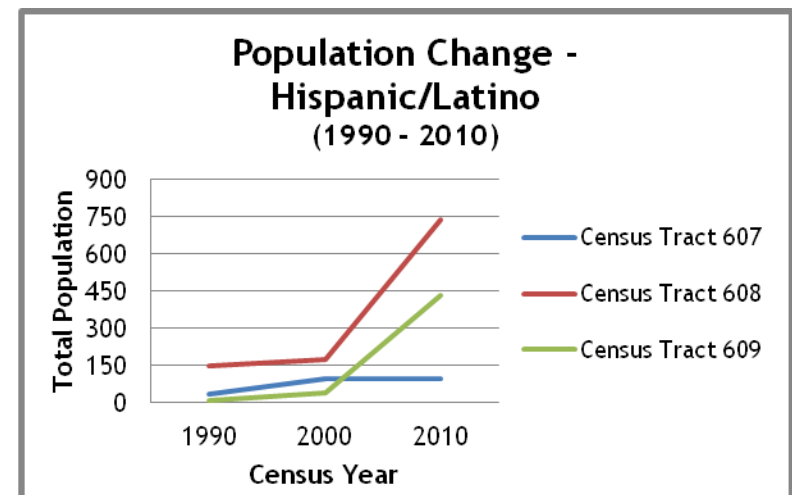


Figure 3.1.2

Source: U.S. Census (2010 Census SF1 - 100%)

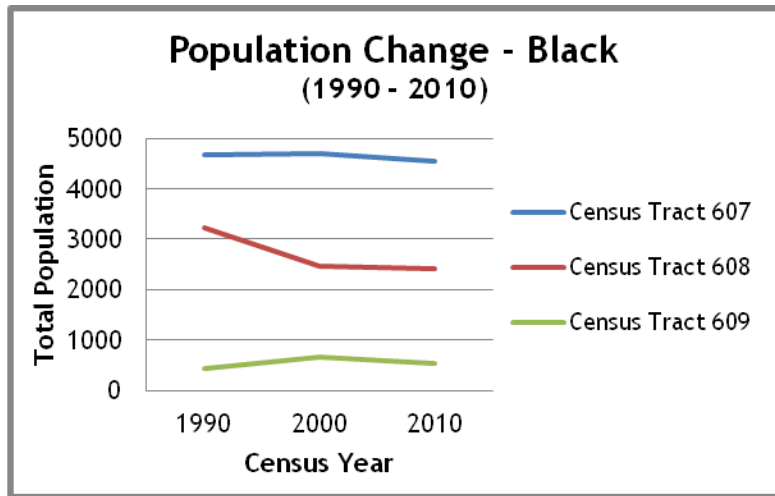
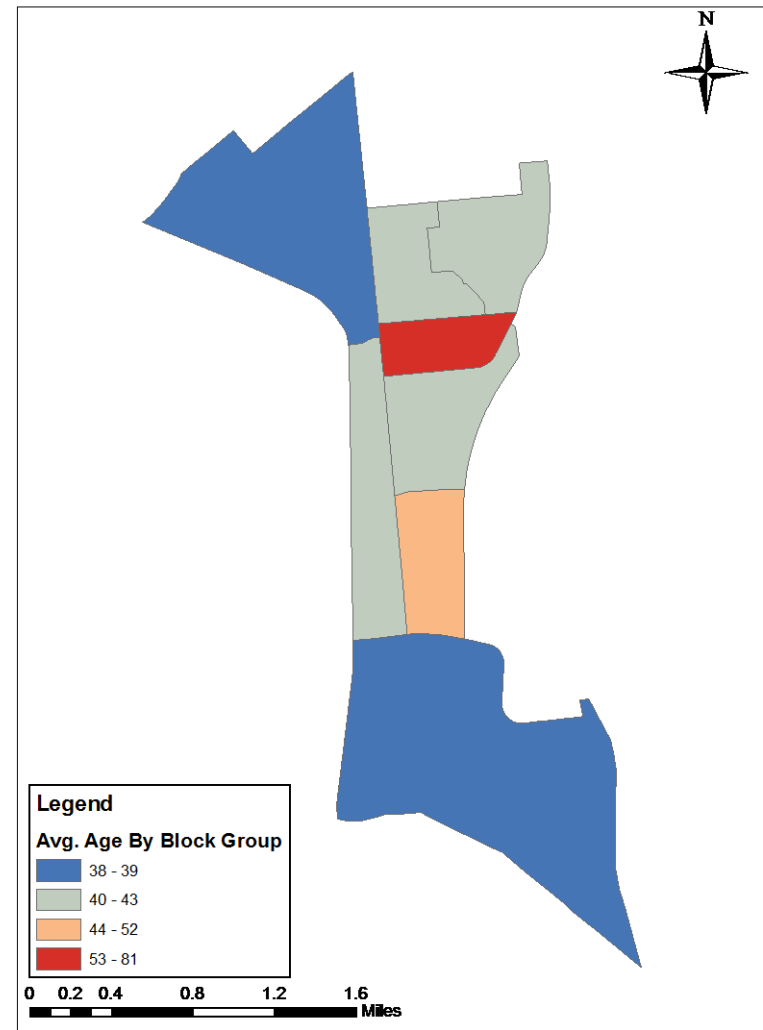


Figure 3.1.3

Source: U.S. Census (2010 Census SF1 - 100%)

Age. Map 3.1.4 shows that the residential study area has an older population as compared to the City of Richmond, as a whole, with a median age of 32. The block group located in the central portion of the study area has an average age above 52; whereas, the other block group located in the southern portion of the study area has an average age between 40 and 53. The younger residents within the study area, generally, reside in the northern most portions, which is predominantly African American; and, in the southern most portion of the study area, which has had a growth both in Hispanics and total population (See Map 3.1.4).



Map 3.1.4: Average Age by Block Group

Source: www.nhgis.org

Financial Characteristics

Income and Poverty. The 2010 average income of the three census tracts throughout the delineated study area is approximately \$27,402, well below the City of Richmond’s median income of \$38,266. Since 1990, the median income numbers have remained relatively stagnant. Specifically broken down by race, the average White income is \$51,427; the average African American income is \$31,032; and the average Hispanic income is \$36,508. The highest income in the study area is in Census Tract 608, with an average income of \$33,380 (See Figure 3.1.4 and Appendix A-2).

The unemployment rate in the northern end of the study area is between 16% and 29%, which is much higher than the unemployment rates moving south along the corridor, closer to Chesterfield County. The unemployment rate in these areas is between 11% and 15%. In the northern areas of the study area with the higher unemployment rates, the median income is also lower at \$21,347 (See Map 3.1.5).

For the overall City of Richmond there are 50,286 people below the poverty status. This represents 25.8% of Richmond’s total population. Of those 50,286, 18.8% are White, 30.5% are African American, and 29.2% are Hispanic. Much of Richmond’s poverty is heavily concentrated in areas such as

the Jefferson Davis Highway corridor, especially toward the northern end, closest to the City (See Appendix A-3).

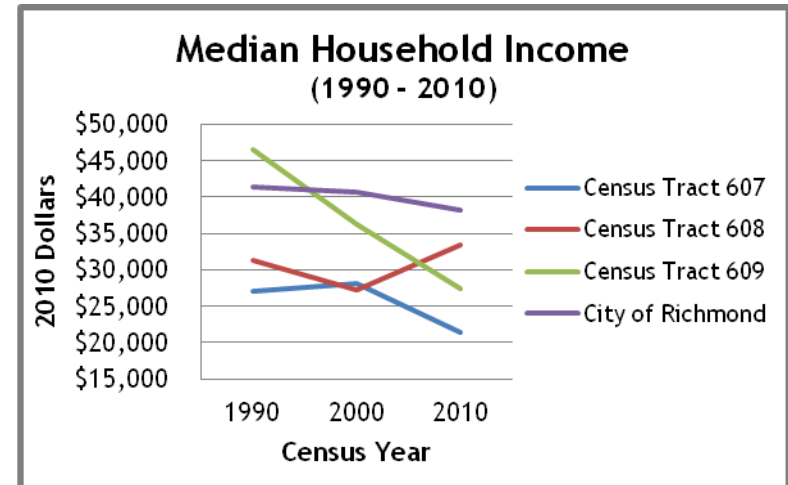


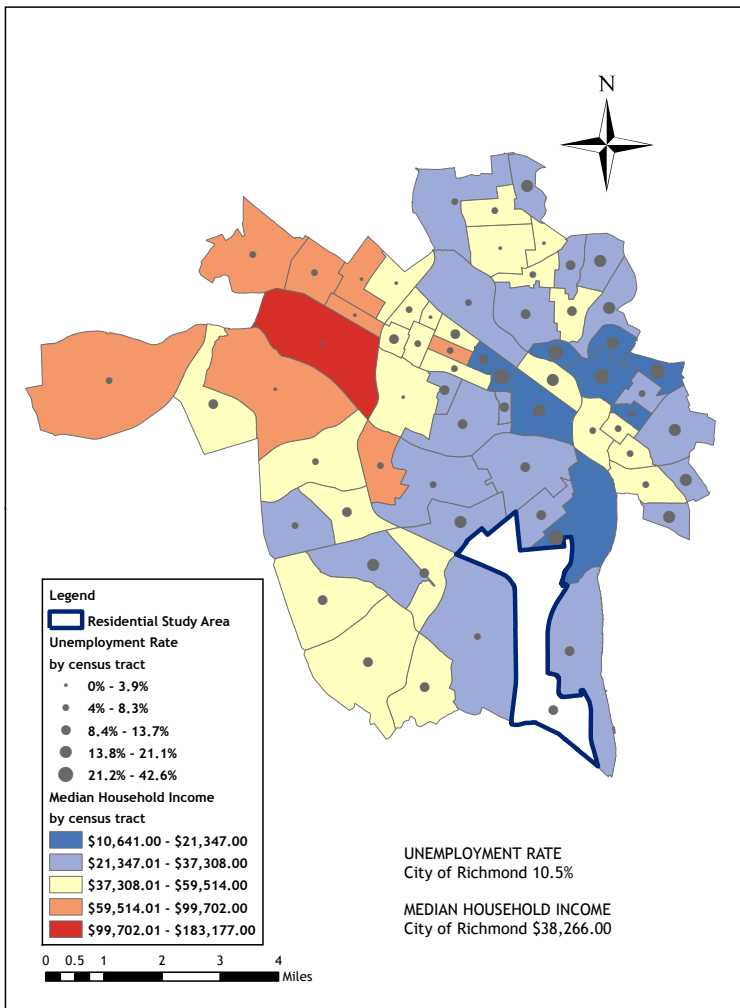
Figure 3.1.4

Source: www.nhgis.org



Photo 3.1.1: Existing Single-Family Residence in Study Area

Source: Sara Duvall



Map 3.1.5: Median Income & Unemployment Rate
Source: U.S. Census Bureau (2010 ACS - 5 yr. est.)

Homeownership. As reflected in Figure 3.1.5, homeownership along the corridor has decreased sharply from 1990 to 2010 in Census Tracts 607 and 609; and Census Tract 608 has lost any gains it made from 1990 to 2000. By comparison, the City of Richmond has had a fairly steady homeownership rate over the last 20 years, except for the slight decrease of 3% from 2000 to 2010.

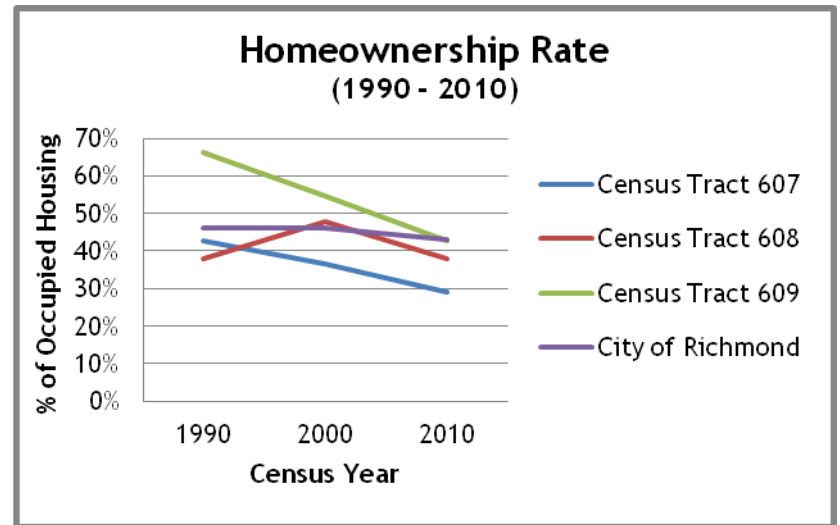


Figure 3.1.5

Source: U.S. Census Bureau ('90, '00, '10 Census SF1 - 100%)

Housing Affordability. The Federal government defines housing affordability as spending less than 30% of household income on rent or mortgages and other related costs. Table 3.2 shows the percentages of housing units for Census Tracts 607, 608 and 609 that spend 30% or more on housing costs. In all census tracts, there are greater percentages of renter

households that are not living in affordable housing. Both owner and renter rates in Census Tracts 607 and 609 are above that of the City of Richmond. The one exception is Census Tract 608, which also has not seen such dramatic decreases in homeownership rates as the other two census tracts (See Table 3.1.2).

sexual offenses accounted for 15.2%; and, vice accounted for 17.5% (See Appendix A-5).



Photo 3.1.2: Police Presence on Corridor
Source: Phillip Sperry

TABLE 3.1.2: HOUSING AFFORDABILITY				
	Census Tract 607	Census Tract 608	Census Tract 609	City of Richmond
Owner Costs 30%+	54.3%	31.8%	41.9%	36.6%
Renter Costs 30%+	58.4%	45.1%	61.8%	54.1%
Source: U.S. Census Bureau (2010 ACS - 5 yr. est.)				

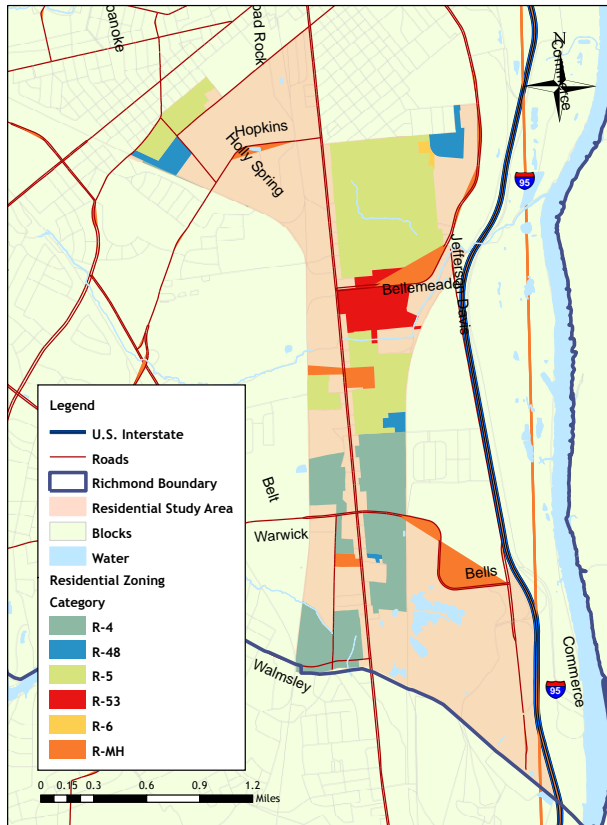
Crime

While police sectors 112 and 213 are larger than our defined residential study area, the crime analysis takes into account the population outside of the study area who might commit crimes inside the study area and near the Jefferson Davis Corridor (See Appendix A-4). Crime rates in these two police sectors are relatively high compared to the rest of the City, but after 2005 they are showing signs of decreasing. Crime rates are starting to drop off after remaining at an almost even level between 2000 and 2010. In 2010, homicides in these two sectors accounted for 18.2% of citywide crime;

Zoning and Land Use

Zoning. Map 3.1.6 shows the existing property zoned residential within the study area, equating to 38.8% of the total study area. The majority of study area is zoned for single-family detached housing with medium densities. The R-6 zoning district, which allows for the greatest amount of density among the zoning categories present, has the least amount of property allocation. Farther south through the study area toward the suburban and rural development in Chesterfield County, the zoning changes from denser zoning (R-5) to less dense zoning (R-4).

In addition, mobile home parks are zoned amongst single-family housing, and mostly fronting on the Jefferson Davis Highway. However, mobile home zoning does not garner a great proportion of the total zoning in the study area (See Map 3.1.6).

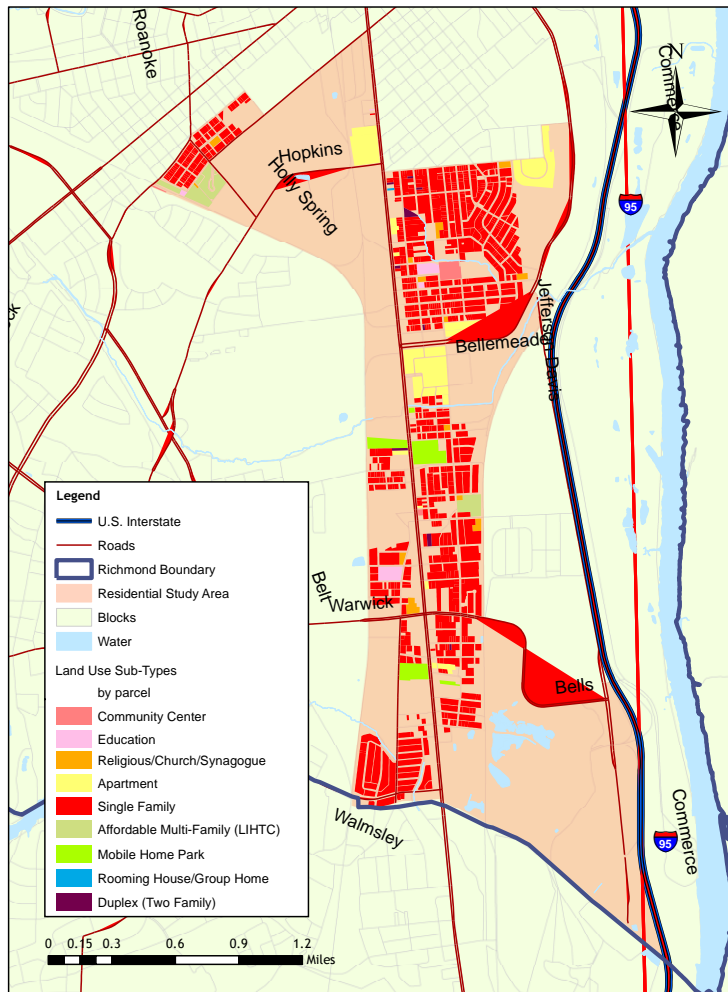


Map 3.1.6: Current Residential Zoning
Source: City of Richmond

Land Use. The overwhelming majority of the residential zoned properties within the study area are currently used as single-family housing, consistent with the zoning patterns as mentioned above. There are several other residential uses throughout the study area including: mobile home parks, apartments, multi-family housing, a group home and a duplex. The majority of the residential zoned property within the study area - 61.9% - is being utilized as single-family detached housing (See Map 3.1.7).



Photo 3.1.3: Single-Family Detached Housing
Source: Sara Duvall



Map 3.1.7: Current Residential Land Use
Source: City of Richmond

Housing Vacancies. Figure 3.1.6 reflects the housing vacancy rates for Census Tract 607, 608, 609 and the City of Richmond. All four of those areas have a fairly proportional amount of units vacant ranging from 11.4% to 13.5%; although, the City of Richmond’s total percentage of vacant units is on the lower end of the range with 11.4%. As Figure 3.1.7 shows, Census Tract 607 and 608 have the greatest amount of units for rent within the vacant units. Specifically, Census Tract 607 has 63.9% vacant units for rent, and Census Tract 608 has 57% vacant units for rent. These numbers reflect a percentage of at least 10% higher in comparison to the City of Richmond and 30% higher than Census Tract 609.

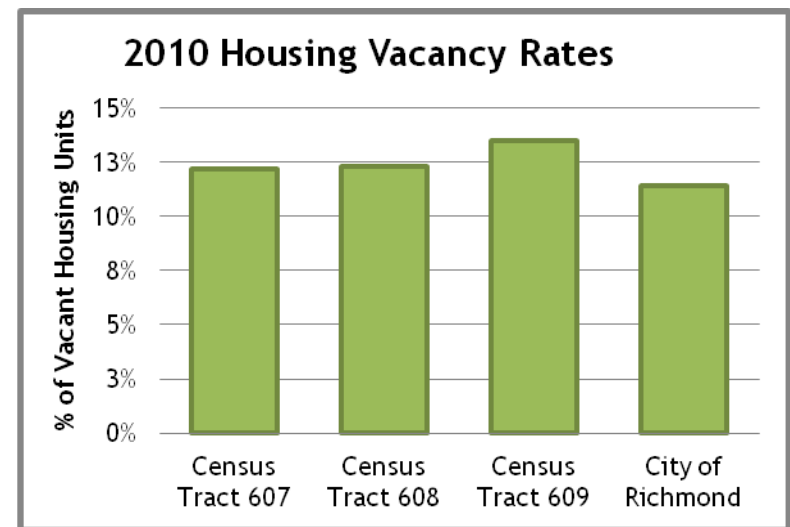


Figure 3.1.6
Source: U.S. Census Bureau (2010 ACS -5 yr. est.)

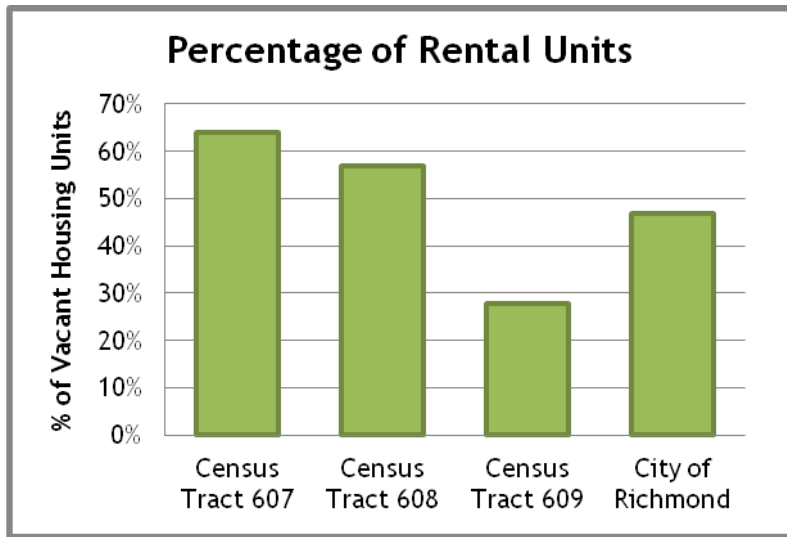


Figure 3.1.7

Source: U.S. Census Bureau (2010 ACS -5 yr. est.)

Vacant Land. Currently approximately 16.6% of the total study area is comprised of vacant land. A vast majority of the vacant land is scattered intermittently throughout the study area in parcels under an acre, except for seven large parcels of 10 acres or more. Of the total vacant land in the study area approximately 30.9% is zoned residential. The largest parcel, containing 15.03 acres is owned by the City of Richmond Economic Development Department (See Appendix A-6).

While the Jefferson Davis Highway corridor may be notorious for its mobile home parks, the current allocation of mobile home zoning is just 1%, constituting one parcel of land. Even less is the availability of land for single-family attached housing. The bulk of vacant land is allocated to R-5 single

family residential, which carries medium density with a minimum lot size of 6,000 square feet. The second highest amount is R-53 multifamily residential, which includes the parcel owned by the City of Richmond (See Table 3.1.3).

TABLE 3.1.3: ALLOCATION OF VACANT RESIDENTIAL LAND		
R-4 (Single-family)	23%	25.7 acres
R-48 (Multi-family)	2%	2.3 acres
R-5 (Single-family)	40%	45 acres
R-53 (Multi-family)	33.5%	37.2 acres
R-6 (Single-family Attached)	0.5%	0.5 acres
R-MH (Mobile home)	1%	1.2 acres
Source: www.nhgis.org		

Housing Age and Condition. The majority of the current housing, approximately 61.2%, was built between 1940 and 1969. It is scattered throughout the study area, but a large portion of the housing built before 1940 is concentrated in the northeast portion of the study area. The housing types in the northeast portion are predominantly single-family detached housing of moderate density, and are consistent with the zoning of the area (R-5). In addition, the three mobile home parks in the area are also listed according to the City of Richmond Assessor as being built before 1970. Upon visual

inspection most, if not all, are seemingly of that vintage (See Appendix A-7).

In relation to those housing units built before 1970, many of the structures are not in poor or very poor condition. Rather according to the City of Richmond Assessor, many are in normal condition with few in very good or excellent condition. Out of 2,081 units only two are considered either very good or excellent. 74.7% of the units are considered in normal condition; 13.7% are considered in fair condition; 1.7% are considered in very poor condition; and, 1.5% are considered in poor condition. Those classified in normal condition are pretty evenly distributed throughout the study area. Those that are considered in fair or good condition are generally of recent construction, and many in good condition are situated more toward the central and southern portion of the study area. In addition, much of the multi-family housing in the area is also considered in good condition (Appendix A-8).

The Jefferson Davis Corridor has experienced an overall decrease in its residential condition mostly from a decrease in population resulting in a lower occupied housing stock. Those that have remained are predominantly African-American, with Whites leaving the area in large numbers. What is evident is an emerging enclave of Hispanics, which is growing rapidly. The area as a whole is widely impoverished and unemployed, with young African-Americans seeing this burden more than others in the area. The low-income nature of the study area produces many additional burdens for its residents - including housing affordability, homeownership and job opportunities.

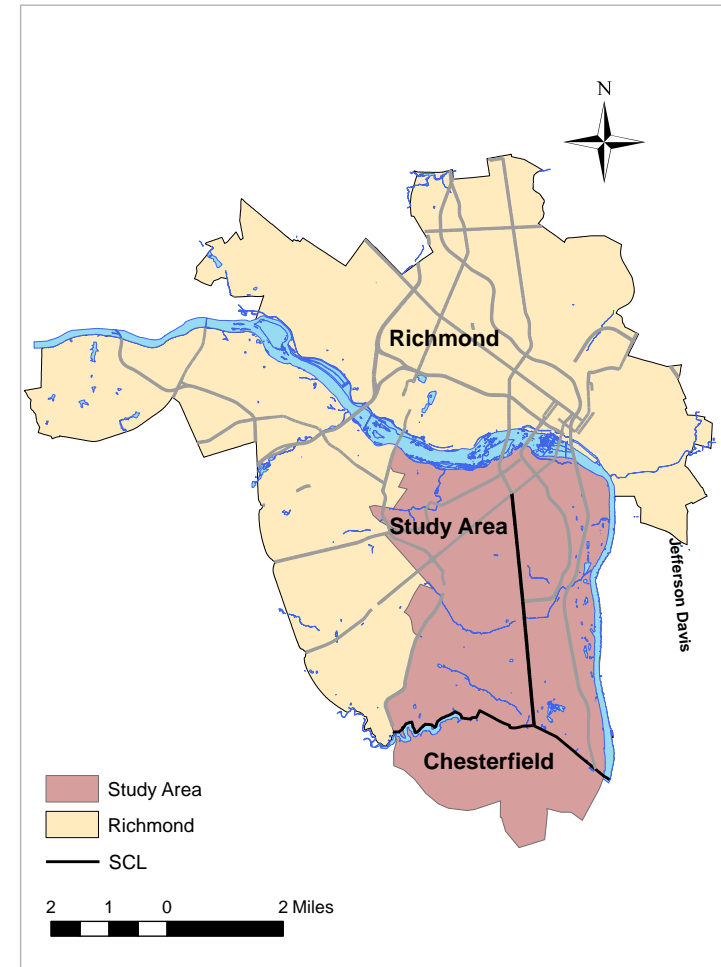
SECTION 3.2

COMMERCIAL

Study Area

The study area for the market analysis of commercial uses along Richmond’s Jefferson Davis Corridor was defined based on three main factors. These considerations included natural and man-made barriers to travel, the vicinity of competing commercial corridors, and typical trade area boundaries for certain types of businesses.

The Jefferson Davis Corridor is bound to the north and east by the James River. The river represents an absolute barrier to the east and one of significant impedance to the north. Therefore, cross-river sections of the City and Henrico County in close proximity to the corridor but distant in terms of accessibility, were excluded from the study area. The study area was also constrained by factors of competition. The Hull Street and Midlothian Turnpike corridors both present competitive challenges to existing or potential businesses along Route 1. Customers to the west of the Jefferson Davis Corridor, who can more easily access establishments on Hull Street or Midlothian Turnpike, are unlikely to travel to the east to shop, especially for convenience items.



Map 3.2.1: Commercial Study Area
Source: U.S. Census Bureau (2010 ACS - 5 yr. est.)

The sizes of trade areas for various types of businesses were examined to obtain a rough estimation of the extent from which Jefferson Davis Corridor businesses might draw the majority of their customers. Trade area size can vary substantially based on business type and population density. Because there are a variety of businesses along the Corridor, it was determined that grocery stores were the most appropriate type of business on which to base a generic trade area due to the non-specialty nature and everyday necessity of their merchandize.

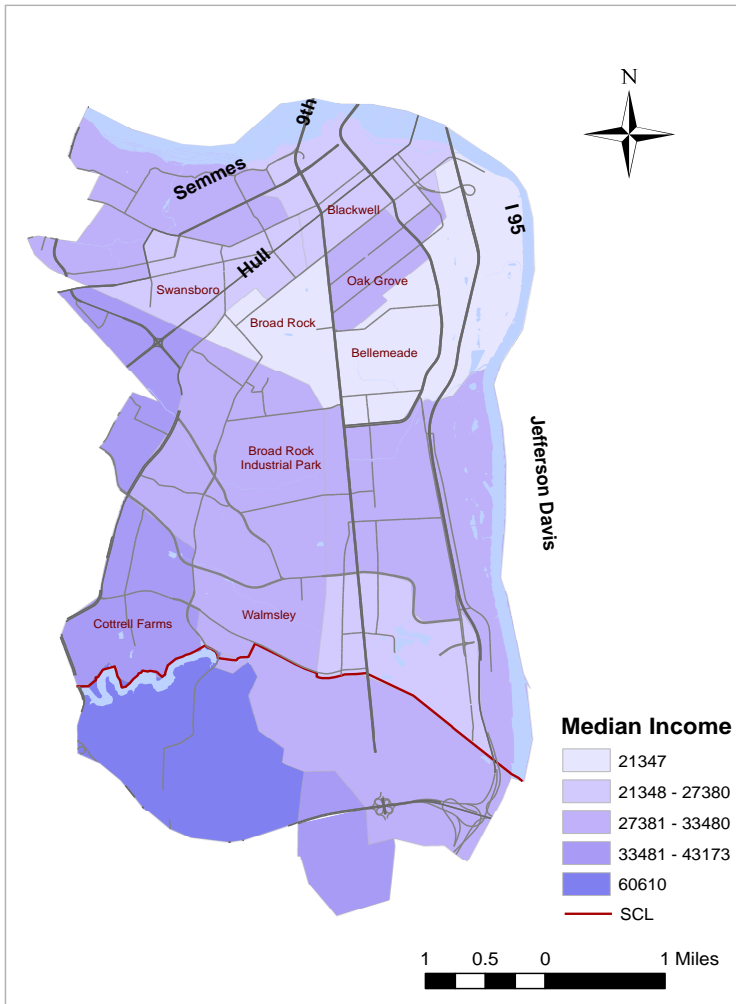
Grocery stores generally consider their trade area to be one to five miles in circumference (LISC 2008). Kroger, a major local grocery operator, expects its supermarkets to generate business from customers in a 2 to 2.5 mile radius around the store (Kroger 2012).

The study area for this plan was established based on these considerations. It includes 13 Census Tracts (10 in Richmond and three in Chesterfield County) that are southwest of the James River and are substantially contained within a two mile buffer drawn around the Jefferson Davis Corridor. Map 3.2.1 shows the extent of the study area in relation to the City.

Households, Income, and Buying Power

Information regarding households and income is essential to an analysis of the corridor and study area. The 13 census tracts included in the study area contain 18,529 households, and a total population of 47,317. In general, the northern section of the study area is more heavily populated than the southern end (see Appendix B-1.1)

For the majority of census tracts in the study area (8 of 13), median annual household income falls within a \$10,000 range from around \$24,000 to \$34,000. As a point of comparison, median household income for the City is \$38,266. As shown in Map 3.2.2, income is distributed relatively evenly from north to south, if skewed slightly to the south. However, all of the tracts with median household income above \$34,000 are located along the western border of the study area. The high-income Chesterfield County tract is a true outlier, as no other tract has a median household income higher than \$43,173. Tract 609, just above the Chesterfield border, stands out in an unfavorable way. The few residents that it has are also those with some of the lowest incomes.



Map 3.2.2: Median Income by Census Tract
 Source: U.S. Census Bureau (2010 ACS - 5 yr. est.)

Most important to the following market analysis is the “buying power” of tracts in the Study Area. This information will be used to ascertain demand for certain types of goods and

services. Two components were factored into the buying power estimate - median household income and data from the Bureau of Labor Statistics Consumer Expenditure Survey (CES). The CES provides information on the complete range of consumers' expenditures and incomes, as well as the characteristics of those consumers. For purposes of this plan, data regarding household expenditures by income level was put to use. For example, using the CES, researchers can determine how much money a household making \$30,000 to \$40,000 spends in total per year, and how much they spend on various types of goods and services.

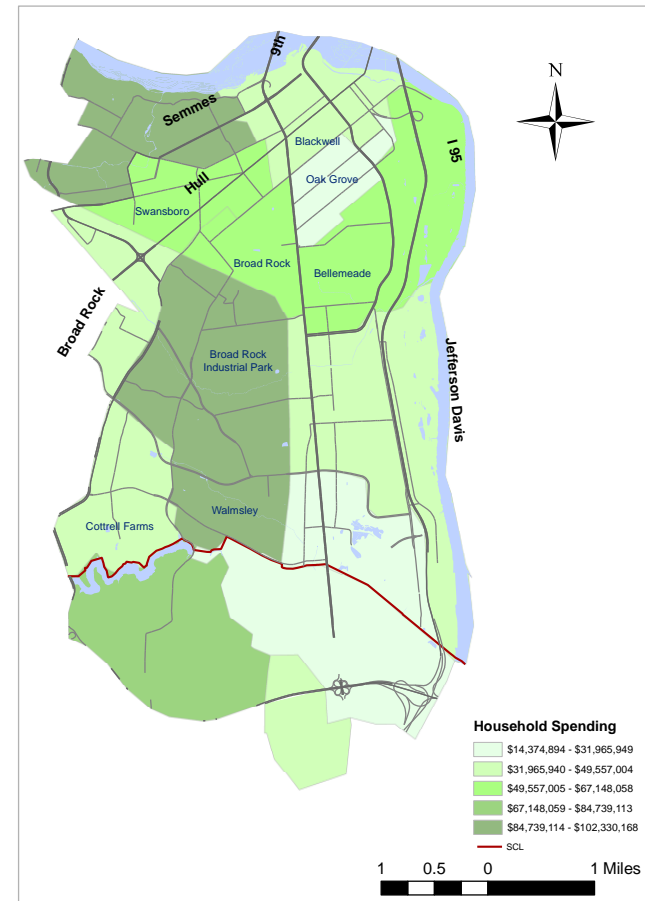
In order to achieve a rough estimation of buying power, median household income for each Census tract was matched to the corresponding income group in the CES. Then, annual household expenditures for that group were obtained. This figure was then applied to the total number of households in the tract to calculate the buying power of the tract. The equation can be expressed as:

$$\text{Tract Buying Power} = \frac{\text{Annual Household Expenditures}}{\text{Total \# of Households}}$$

The total amount of money spent annually by households in the study area is almost **\$650 million dollars**. Using the same formula, all households in Richmond annually spend \$3.3 billion. **Therefore, about 19% of all of the money spent by Richmond households is spent by those in the Study Area.**

Within the study area, buying power is concentrated to the north and the west. Map 3.2.3 reveals some stark contrasts that are not readily apparent from housing and income statistics alone.

The lowest buying power of any tract is \$14.4 million, while the highest is \$102.3 million - 7.1 times the power of the lowest-spending tract. The reason this disparity isn't as easily seen from a simple examination of households and income is that the most powerful tract has just 5.8 times as many households and the median household income is only 1.2 times higher than the least powerful tract. This seems to suggest that the buying power and, thus, commercial attractiveness, of a particular area is much more closely tied to population than income.



Map 3.2.3: Household Spending Power
Source: U.S. Census Bureau (2010 ACS - 5 yr. est.)

Land Use

Examining current commercial land uses is helpful for two main reasons. It shows where commercial activity is concentrated within the study area, and it can also provide an indication of whether the community's needs for goods and services are being met. Appendix B-1.1 maps the location of current commercial uses in the corridor, and reveals that most of these parcels are located along the length of Hull Street, or near the intersection of Hull and Cowardin. There is also a focus of commercial activity along the southern end of the corridor. The central area of the corridor, near Commerce, has relatively few commercially designated parcels. Table 3.2.1 contains the top ten commercial uses within the study area.

A preliminary analysis reveals that the residents might be underserved with shopping opportunities. There are 3,818 parcels in the City classified as commercial. 649, or just below 17%, of these parcels are located in the study area. Households in the study area spend 19% of the money spent by all Richmond households, yet have comparatively fewer places to spend that money.

**TABLE 3.2.1:
TOP 10 COMMERCIAL USES IN STUDY AREA**

	Count	% of all Commercial Uses
General Retail/Service	154	24%
Paved Surface Parking	134	21%
Vehicle Repair/Service	110	17%
Mixed Use	43	7%
Vehicle Sales & Service	31	5%
Commercial Shell	28	4%
Restaurant/Bar	25	4%
Fast Food Restaurant	22	3%
Convenience Store w/pumps	14	2%
Neighborhood Shopping Center	13	2%

Source: City of Richmond

Zoning

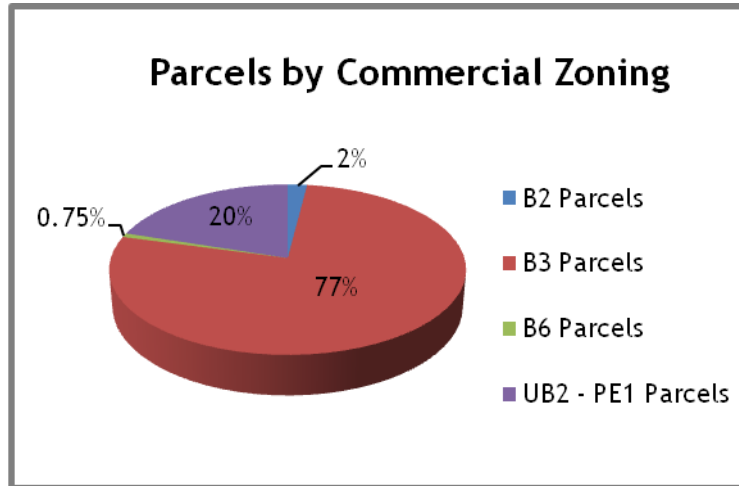


Figure 3.2.1: Commercial Zoning Parcels
Source: City of Richmond, Real Estate Assessor

The immediate Jefferson Davis Corridor (1/4 mile buffer from Route 1) contains 399 commercial parcels and four zoning classifications: Community Business District (B-2), General Business District (B-3), Mix-Use Business District (B-6), and Urban Business District (UB2). As shown in Figure 3.2.1, the majority of the parcels, about 77%, are zoned General Business. The next largest category is Urban Business District at 20%. Relatively few parcels are zoned Community Business District or Mix-Use Business District. Almost all parcels directly abutting Jefferson Davis south of the Hull Street intersection are zoned B-3. All B-2 parcels are set back from Jefferson Davis, and separated from this major road by B-3 parcels. All

UB2 parcels are along Hull Street north of Cowardin. B-6 parcels consist solely of the Model Tobacco property. The locations of parcels by zoning classifications are shown in Appendix B-1.2.

Traffic

Traffic counts are imperative for market analysis because travelers are also consumers. When assessing demand, most commercial market analyses assume that the trade area will capture spending from a small portion of travelers.

For purposes of traffic analysis, the Study Area section of Jefferson Davis is broken down into three sections. These include Hull Street to Hopkins, Hopkins to Bellemeade, and Bellemeade to the City line. The heaviest traffic in the corridor occurs in the southern and northern sections. The Average Annual Daily Trips (AADT) is 19,000 in these sections. The middle section of the Corridor, which has less commercial activity, sees 5,000 fewer cars per day than the two busier sections (see Table 3.2.2).

TABLE 3.2.2: TRAFFIC COUNTS

	Length	Section	AADT*	AAWDT**
Jefferson Davis Hwy	1.01	Hull to Hopkins	19,000	20,000
Jefferson Davis Hwy	0.86	Hopkins to Bellemeade	14,000	15,000
Jefferson Davis Hwy	2.13	Bellemeade to City Line	19,000	21,000
* Average Annual Daily Trips				
** Average Annual Weekly Trips				
Source: Virginia Department of Transportation 2010				

Traffic counts along the corridor are similar those of other major City thoroughfares.

- Midlothian at Belt: 20,000
- Hull at Belt: 19,000
- Broad at Staples Mill: 24,000
- Chamberlayne at Laburnum: 14,000
- Patterson at Libbie: 11,000

Preliminary Real Estate Assessment

In order to evaluate the development potential of parcels on the Corridor, an analysis of real estate assessment values was conducted using the parcel’s improvement to land value ratio. This ratio is intended to assist in determining whether a parcel

may be a favorable candidate for acquisition and redevelopment.

A parcel with an improvement to land value ratio less than one means that the structure on the parcel is less valuable than the land. These types of parcels may be more attractive for redevelopment for several reasons. The structure may be in poor condition, resulting in lower acquisition and demolition costs. Ratios lower than one also include vacant parcels. Vacant parcels are particularly attractive since no demolition and minimal site work are likely to be required.

51% of parcels within a ¼ mile buffer around the Corridor have improvement to land value ratios less than one, indicating that many of the parcels may be favorable for redevelopment. Low ratio parcels are fairly evenly distributed along the Corridor. The remaining parcels are split relatively evenly between those with ratios of one to two, two to three, and greater than three (See Figure 3.2.2). Appendix B-1.4 maps the locations of commercial parcels within the corridor by improvement to value ratio.

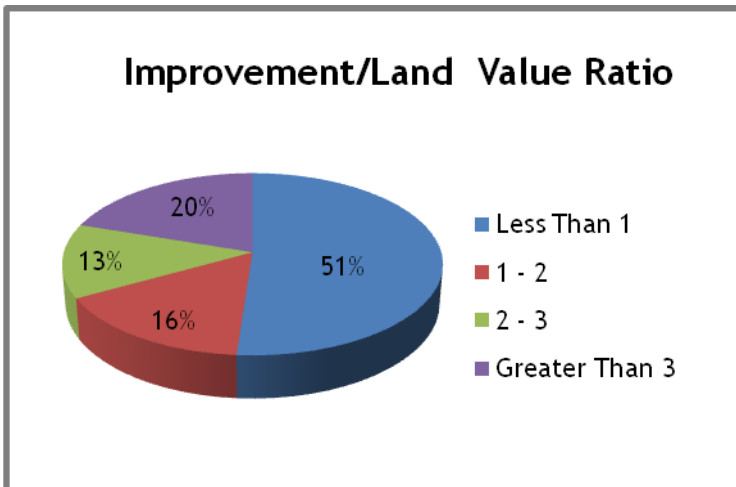


Figure 3.2.2: Land Value Ratio
Source: City of Richmond

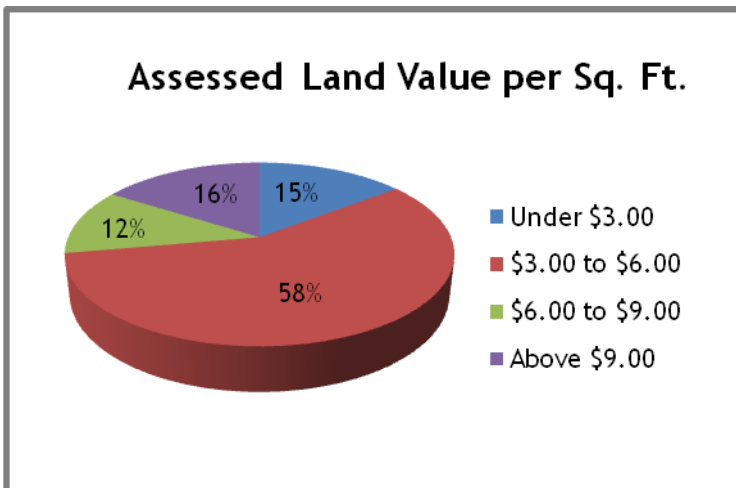


Figure 3.2.3: Assessed Value per Square Foot
Source: City of Richmond

The real estate analysis also looked at land value per square foot. This analysis helps to identify parcels that may be inexpensive to acquire. It can also indicate where the best commercial locations are along the Corridor. Those parcels with the highest value per square foot (above \$9.00) are almost exclusively located on Hull Street north of Cowardin. These are also the parcels that are zoned as Urban Business District. Parcels with a per square foot value between \$6.00 and \$9.00 are found mainly on Cowardin, on either side of Hull Street. Most parcels (58%) are valued at \$3.00 to \$6.00 per square foot and are found throughout the Corridor (Figure 3.2.3). The lowest value parcels are also evenly distributed along Jefferson Davis. Appendix B-1.5 shows the spatial distribution of parcels of varying land values.

SECTION 3.3

INDUSTRIAL

For much of the past century, Richmond's industrial economy has been shaped by tobacco and transportation. In 1929, Phillip Morris Co., now known as Altria, began the construction of the now 200-acre site located adjacent to the Jefferson Davis Highway. One of the largest tobacco facilities in the world, the industry has long provided a backbone for the Jefferson Davis Highway Corridor. The Model Tobacco building was built in the late 1930's and although it is currently not used, its prominence within the corridor is undeniable.



Photo 3.3.1: Model Tobacco Building
Source: Phillip Sperry

With access to the James River, the Port of Richmond has long supported the region. Used to transport goods throughout the mid-Atlantic, the Port of Richmond was a part of Richmond's past and should remain a vital piece of its future. While the tobacco industry has downsized, infrastructure remains symbolizing Richmond's strong industrial history and providing guideposts for future growth.

Using Census data from the zip codes¹ 23224 and 23234, the total number of industrial establishments was determined. The majority of the 237 establishments employ less than 100 people each. Tables C-1.1A and C-1.1B in the appendix break down industrial establishments by 3-digit NAICS Codes. Hand and Edge Tool Manufacturing (NAICS code 332) has the largest number of manufacturing establishments. Two companies, however, employ more than 1,000 people - cigarette and textile manufacturers. Altria Group and DuPont are these major employers.

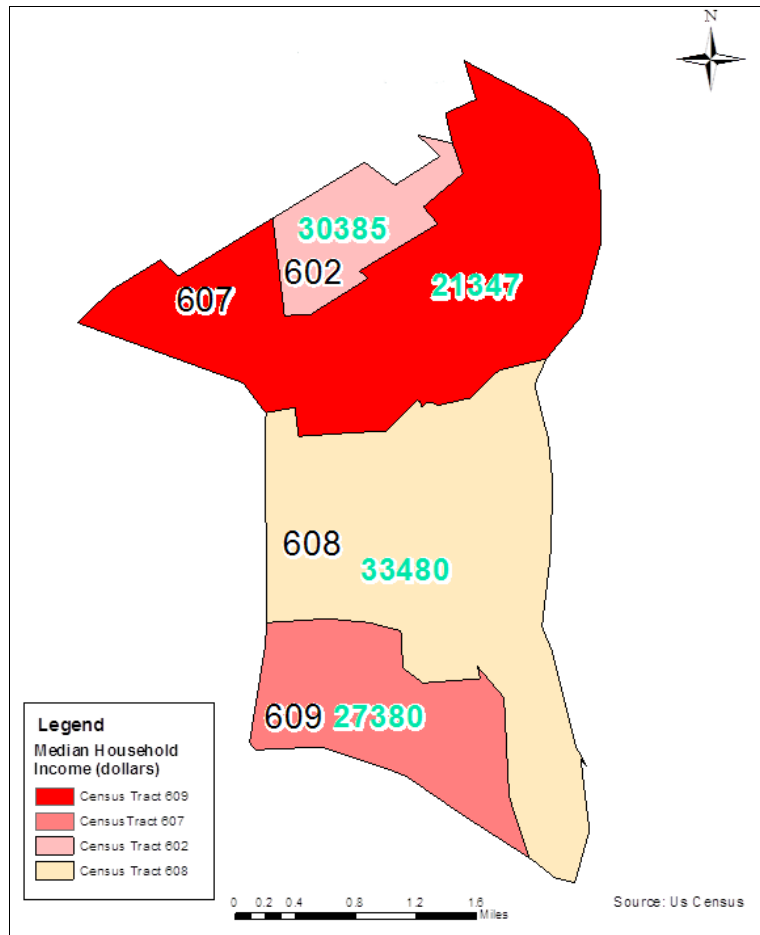
Motor vehicle suppliers employ low numbers of people but are very prevalent within the area. Because industrial facilities are located along the corridor, strategic clusters can be created. These large industries could be better served if members of their supply chain were located along the corridor.

¹ The smallest geographical unit of measurement for NAICS codes is the zip code.

Census tract specific data can be more geographically precise. March 2011 employment within the City of Richmond was 148,500 people. This demonstrated a 1.10% increase in employment from the previous month. Employment within the City is higher than most of the surrounding areas. The average weekly wage for the City of Richmond was over \$1,000 per week, making it one of the highest wages in the state (Table 3.3.1). Although these earnings figures are healthy, they are misleading for the study area. Table 3.3.2 and Map 3.3.1 depict income for the four Census Tracts that fall along the Jefferson Davis Highway Corridor and compare these figures to the City of Richmond. The census tracts in our study area demonstrate far lower median incomes than the nation, state, and City of Richmond as a whole, which have household median incomes of \$50,046, \$60,674, and \$55,325 respectively. The reality - Jefferson Davis Highway Corridor is in need of economic growth and job creation. Creating local industry growth could increase revenues for citizens and create investment in the community at large.

TABLE 3.3.1: EMPLOYMENT AND AVERAGE WAGE FROM 2009-2011		
		Richmond City, VA
2009	Employment	150,777
2009	Avg. Weekly Wage (\$)	991
2010	Employment	148,083
2010	Avg. Weekly Wage (\$)	1,002
2011	Employment	148,500
2011	Avg. weekly Wage (\$)	1,071
2009-2011	Employment Percent Change 2009-2011 (%)	-1.533
Source: Bureau of Labor Statistics		

TABLE 3.3.2: HOUSEHOLD INCOME BY CENSUS TRACT	
Census Tract	Household Income
602	\$30,385
607	\$21,347
608	\$33,480
609	\$27,380
Richmond	\$38,266
Source: U.S. Census Bureau	



Map 3.3.1: Income

Source: US Census (2010 ACS - 5 yr. est.)

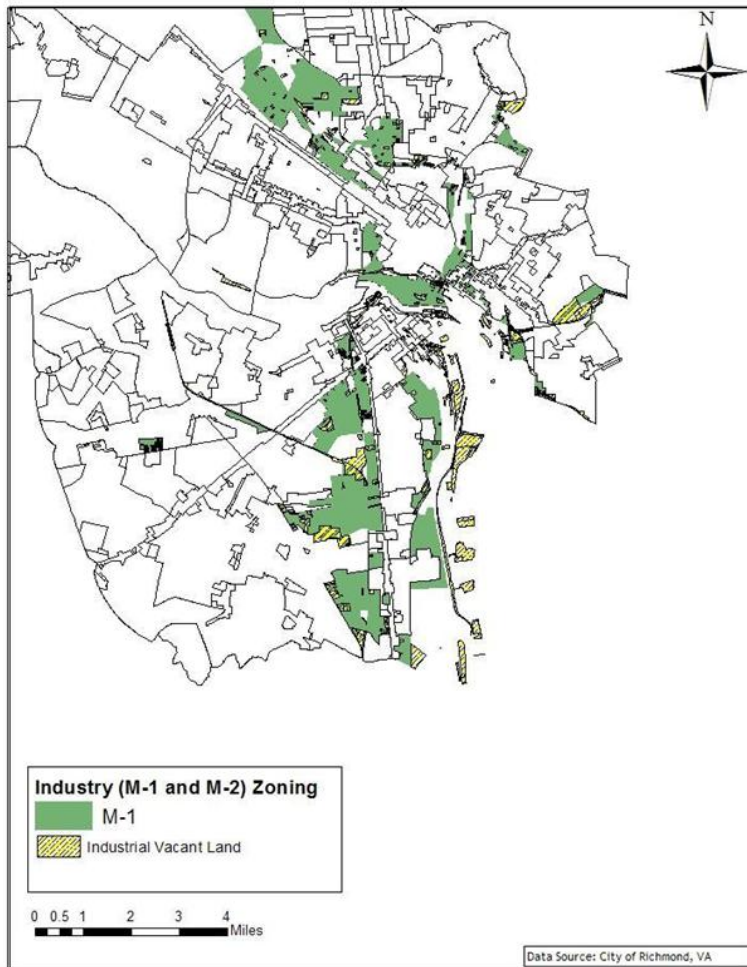
Industrial Zoning and Vacant Land:

The corridor has a rich industrial history and its current economic state is still steeped heavily in industry. Maps 3.3.2 and 3.3.3 show the industrial zoning for the City of Richmond. It is clear that south side Richmond, in particular the Jefferson Davis Corridor, is very industrial. The areas highlighted in dark

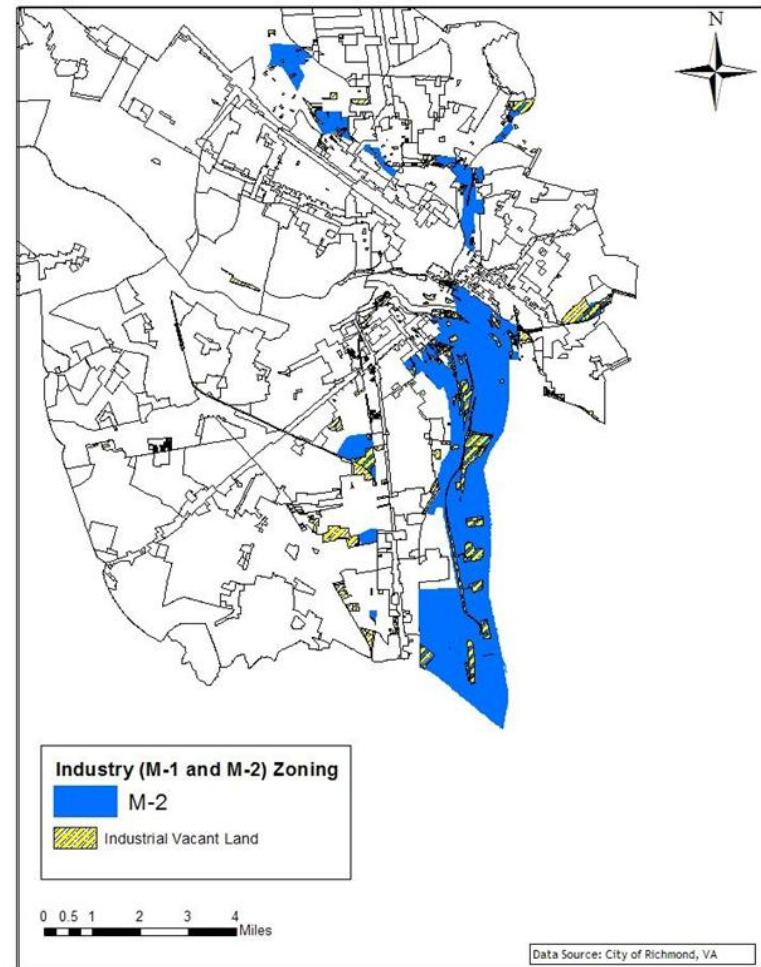
and light green represent land zoned M-1 and M-2 as described in the City of Richmond Zoning Ordinance. An M-1 zone has many permitted uses such as: food and beverage production, metal and metal products use and construction, textiles, bedding and fibers creation, wood and paper products and countless other uses. No buildings in the M-1 zone shall be taller than 45 feet. Furthermore, the zone has no yard requirements unless the M-1 is next to a residential area. In that case, a setback of 25 feet is required.

M-2 zoning allows for more uses adding M-1 uses to waste management, chemical manufacturing and storage, medical waste management, flea markets, penal institutions, sale and storage of used tires, storage of petroleum products, the sale of liquor, etc. Setbacks of 50 feet are required if an M-2 zone is next to a residential area. Height requirements remain at 45 feet, however, height can be increased. Setback must be increased one foot for every two foot of additional height regardless of its proximity to residential areas.

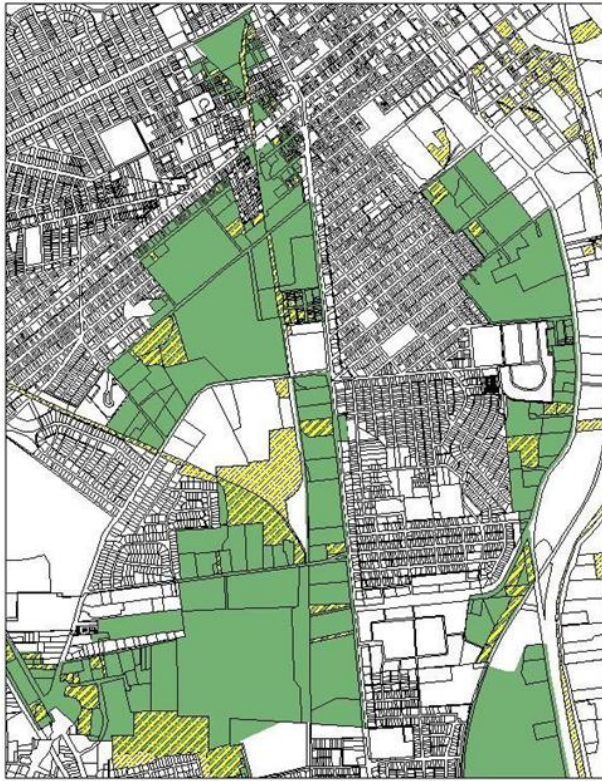
The opportunity exists for improvement of this vacant land without rezoning, special use permits, or other modifications to the existing land use master plan, although such changes may facilitate growth. Maps 3.3.4 and 3.3.5 below show a close up of the study area, focusing on M-1 and M-2 zoning with an overlay of vacant parcels. The opportunity exists for industrial growth in the Jefferson Davis Highway Corridor.



Map 3.3.2: City of Richmond M-1 Industrial Zoning
Source: City of Richmond



Map 3.3.3: City of Richmond M-2 Industrial Zoning
Source: City of Richmond



Industrial Zoning Type
Industry (M-1 and M-2) Zoning
 ■ M-1
 ■ Industrial Vacant Land

0 0.15 0.3 0.6 0.9 1.2 Miles

Data Source: City of Richmond, VA

Map 3.3.4: Study Area M-1 Industrial Zoning
 Source: City of Richmond

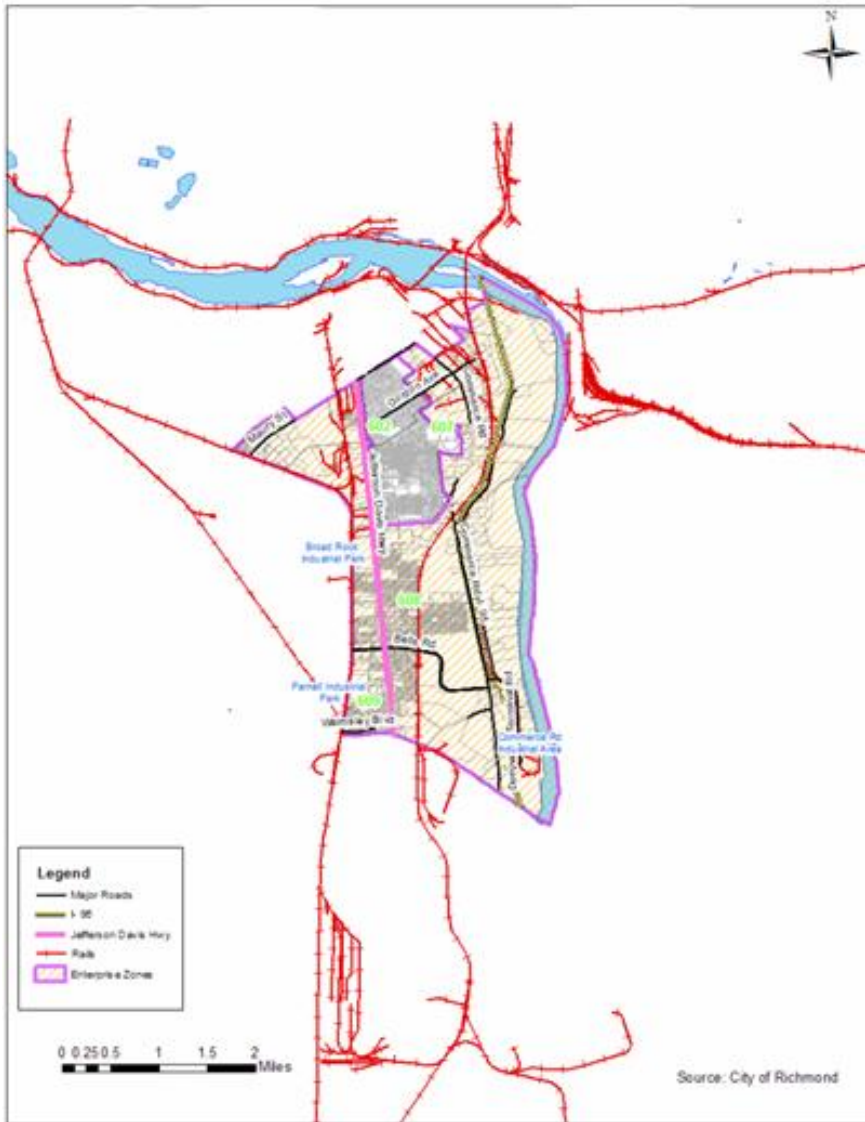


Industrial Zoning Type
Industry (M-1 and M-2) Zoning
 ■ M-2
 ■ Industrial Vacant Land

0 0.15 0.3 0.6 0.9 1.2 Miles

Data Source: City of Richmond, VA

Map 3.3.5: Study Area M-2 Industrial Zoning
 Source: City of Richmond



Map 3.3.6: Industrial Transportation Infrastructure
Source: City of Richmond

Industrial Transportation Infrastructure

Map 3.3.6 highlights rail, road, and river (concentration of rail lines in southeast corner at the port) infrastructure in the Jefferson Davis Highway corridor, here defined as census tracts 602, 607, 608, and 609.

The industrial legacy of this corridor has left a well-integrated network for multi-modal shipping. The corridor is particularly oriented from north to south. Interstate 95 runs through the center of the corridor and can be accessed by Maury St. in the north of the corridor and Bells Rd. in the south of the corridor. Three major industrial areas are also located in the study area: Broad Rock Industrial Park, Parnell Industrial Area, and Commerce Road Industrial Area.

Rail yards surround the corridor. A large yard exists just east of the James River in Fulton. Two smaller rail yards lie just north (near Brown’s Island), and south (Chesterfield County). The Port of Richmond, located in the southeast corner of the corridor, is connected to both the CSX and Norfolk Southern railroads. It has 34 acres of open storage and a warehouse capacity over 300,000 square feet (City of Richmond 2011) In addition, this entire infrastructure network lies within federally mandated enterprise zones. Enterprise Zones offer tax and regulatory relief to developers who choose to start businesses in specifically selected blighted areas (United States Department of Housing and Urban Development 2012)

Educational Attainment, Employment, and Income

Table 3.3.3 shows educational attainment and labor force characteristics of the corridor. Again, the corridor is defined as and differentiated in terms of the census tracts 602, 607, 608, and 609. The northernmost census tracts, 602 and 607, have the most highly educated and employed labor force in the corridor. Only 28% of their populations have less than a high school education, while 40% and 46% of tracts 608 and 609

have less than a high school education, respectively.

The northern most census tracts also have the highest percentage of individuals over 16 in the labor force. The potential working population, 16 years plus, is most heavily concentrated in the central census tracts 607 and 608. Finally, the unemployment rate reflects the population density, with the highest rate by far (29%) found in the census tract with the largest working age population, 607.

Even though its population is well educated in comparison to the other census tracts of the study area, tract 607 has the highest unemployment rate. This is likely due to a combination of factors. It has the highest working age population at 3,383 people, and 63% of this population is in the labor force. However, it is sandwiched between the employment centers of downtown Richmond to the north and

TABLE 3.3.3 : EDUCATIONAL ATTAINMENT

	Census Tract 602	Census Tract 607	Census Tract 608	Census Tract 609	Richmond, VA Metro Area
Population 18 to 24 years	129	589	324	134	124,205
Less than high school graduate	10.10%	40.60%	41.40%	48.50%	16.00%
High school graduate (includes equivalency)	30.20%	37.20%	26.90%	36.60%	32.70%
Some college or associate's degree	59.70%	16.50%	31.80%	14.90%	40.40%
Bachelor's degree or higher	0.00%	5.80%	0.00%	0.00%	10.90%
Population 25 years and over	1,348	2,634	2,261	1,009	844,504
Less than 9th grade	10.40%	8.50%	11.60%	18.20%	5.10%
9th to 12th grade, no diploma	18.20%	19.60%	28.00%	27.50%	9.00%
High school graduate (includes equivalency)	44.40%	39.50%	34.60%	37.30%	27.10%
Some college, no degree	16.20%	22.60%	19.40%	10.80%	21.00%
Associate's degree	5.20%	4.90%	3.20%	1.40%	6.20%
Bachelor's degree	5.60%	3.10%	2.30%	4.90%	20.50%
Graduate or professional degree	0.00%	1.90%	0.90%	0.00%	11.20%
Percent high school graduate or higher	71.40%	71.90%	60.50%	54.30%	86.00%
Percent bachelor's degree or higher	5.60%	5.00%	3.20%	4.90%	31.70%
Source: US Census Bureau					

the industrial areas of Broad Rock, Parnell, and Commerce to the south. Residents of census tract 607 are at a spatial employment disadvantage compared to the residents of the other three census tracts in the study area.

The table on this page compares the educational attainment of the four census tracts of the study area to the educational attainment of the whole city of Richmond. Census tract 602 is better educated than the city average. It has a lower percentage of individuals (10.1%) with less than a high school degree, and a higher percentage of individuals with some college or an associate's degree (59.7%) than does the city of Richmond, with 16% and 40.4% respectively.

On the other hand, census tracts 607, 608, and 609 have a less educated population than does the city of Richmond as whole. Their numbers compare unfavorably to the city's less than high school rate and its college rate. These educational attainment numbers are reflected in Map 3.3.3, which demonstrate that census tract 602 has the highest percentage of residents in the labor force (68%), and the second lowest unemployment rate (12%).

In every tract except tract 602, the African American population has the highest unemployment rate. The Hispanic population increases dramatically as you head south in the study area, with tracts 608 and 609 containing over 22 times the Hispanic population as the other two more northern tracts.

The Hispanic population also has the lowest unemployment rate of any race in the study area. The percent of the 16 and older population in the labor force is comparable for the Jefferson Davis Corridor and the city. However, in every census tract of the study area, the unemployment rate is at least two points higher than the city average.

Industrial Infrastructure

The area is well provided with gas, water, and sewer hookups. All three systems are heavily concentrated in the western half of the corridor just west of Jefferson Davis Highway itself. Gas is most condensed in the Broad Rock Industrial Park.

The water lines are also heavily concentrated in the west of the corridor, but they also extend further east, north, and south, connecting to the Commerce Road Industrial Area and the James River water source.

Finally, the corridor is also very well connected by sewerage. Actually, the sewer lines exceed in total length both the water and gas lines. Table 3.3.4 highlights the extent of gas, water, and sewage lines in the study area.

TABLE 3.3.4: UTILITY LINE LENGTH	
Utility	Length (Feet)
Gas	363,243
Water	349,352
Sewer	393,048
Source: City of Richmond	

Overall, the study area has an industrial history and foundation. The zoning, employment trends, transportation system, location, and existing infrastructure lend themselves to a continued focus on industry and manufacturing development.

SECTION 3.4

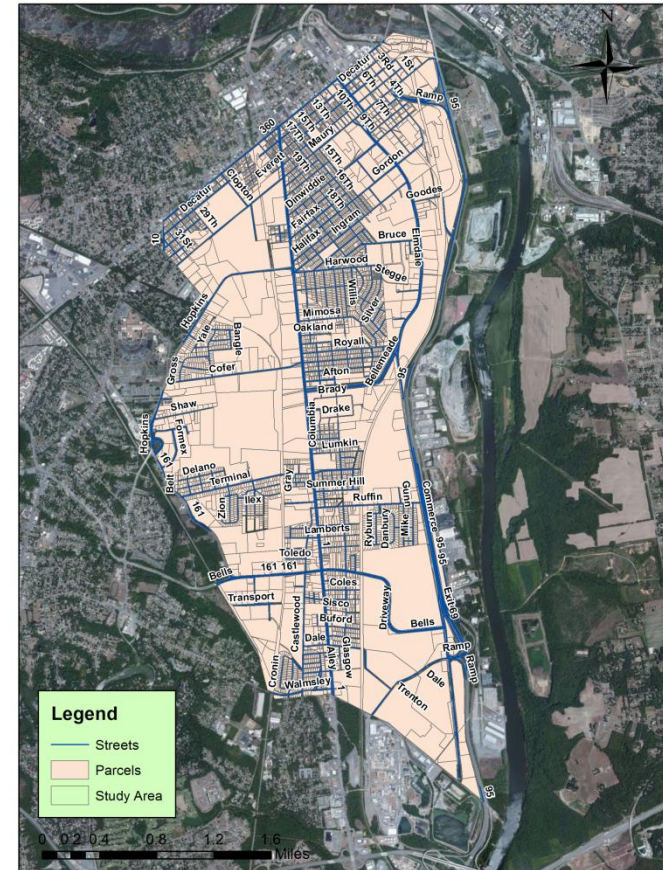
GREEN & OPEN SPACE

Richmond prides itself on being the “River City,” and possesses significant natural resources and green and open space potential. A limitation of resources over the last several years has left many areas of the City without adequate green and open spaces. Green and open spaces are an important part of every community, not only for their aesthetic value, but also for their social, ecological, and environmental benefits. Particularly in urban areas such as Richmond’s Jefferson Davis Highway Corridor, green and open space can provide a place to play, meditate, gather, and rest. These spaces give a sense of social place, can enhance feelings of community togetherness, and provide a refreshing contrast to the harshness of urban commercial or industrial development. Acute problems of crime, blight, and lack of community character and cohesion all make green and open space a vital necessity to the Jefferson Davis Highway Corridor.

Study Area

Map 3.4.1 shows the study area for the green and open space sections of this plan. Encompassing a fairly large geographic area of Richmond, the study area generally follows political

and manmade boundaries. The eastern boundary extends to Interstate 95, while the western boundary utilizes several main arterials, including Bells Road and Hopkins Road; the northern boundary is formed by Hull Street.



Map 3.4.1: Open Space Study Area
Source: City of Richmond

The southern boundary was determined by existing political jurisdictions, where north of this boundary is the City of Richmond and areas south are within Chesterfield County. A total of 4,177 acres are included in the study area, but it is important to note that the study area is fluid and remains fixed at the aforementioned parameters for analyses of zoning and land use only. The demographic analyses found within this section adhere to U.S. census tract boundaries to maintain data consistency and accuracy, and therefore adhere to a variation of the described study area. However, careful consideration was used when interpolating population data to determine the total population of the study area. The scope of the study area for this section was further determined based on the service area criteria of green spaces outlined in the City of Richmond *Parks, Recreation and Community Facilities Master Plan*; its geographic size reflects the service areas of various green spaces and community facilities located along Jefferson Davis Highway. Generally, the study area is composed of developed and undeveloped land, with residential and industrial areas serving as the primary land use components. The data presented in this section is focused on green and open space in order to understand how the existing green and open spaces currently serve the surrounding community.

The City of Richmond released its *Parks, Recreation and Community Facilities Master Plan* in August 2008. This plan “provides a strategic approach to the continuation and

development of parks, recreation facilities and recreation activities and services, now and in the future.” In addition to recommendations, data analysis, and community needs, the plan outlines various classifications of parks within the City. (See Appendix D-1) Based on these classifications, the following types of parks serve the Jefferson Davis Highway Corridor study area:

- pocket parks: Davee Gardens
- neighborhood parks: Canoe Run, Ethel Bailey Furman, Washington Square, Fonticello
- special use areas: Oak Grove, Bellemeade, Summer Hill

A number of playgrounds also serve the study area. There are no community parks, regional parks, greenways, or open space or conservation areas that serve the study area. Additionally, although each of the parks listed above is designated as serving the study area, many of them are not actually located along the Jefferson Davis Highway corridor, and are therefore difficult for its residents to access.

The Bellemeade Community Center is centrally located in the study area, and has the potential to serve an important role in the surrounding community. However, the Parks Plan noted that there is inadequate signage for finding the center, poorly maintained outdoor facilities, and vandalism that detracts from the center’s potential as an important community institution. (Parks Plan 55-56) Photo 3.4.1 below shows vandalizing of the indoor basketball court’s windows, and the

Photo 3.4.2 shows the cracked surface and broken net of the tennis courts. The Plan recommends that connectivity to the community could be strengthened by increased signage and improving paths to all adjacent neighborhoods. (Parks Plan 56)



Photo 3.4.1: Bellemeade Community Center Windows
Source: *Parks, Recreation and Community Facilities Master Plan*



Photo 3.4.2: Bellemeade Community Center Tennis Court
Source: *Parks, Recreation and Community Facilities Master Plan*

The Thomas B. Smith Community Center is also a centrally located, often-used asset to the study area. The Plan comments:

“Clean, well maintained and friendly, this center seems to directly support the large neighborhood immediately

across the street as well as the nearby school. Parking could be increased to facilitate use by the greater community and refurbishment of the children’s wading pool should be considered.” (Parks Plan 62)



Photo 3.4.3: Thomas B. Smith Community Center
Source: *Parks, Recreation and Community Facilities Master Plan*



Photo 3.4.4: Thomas B. Smith Community Center Playground
Source: *Parks, Recreation and Community Facilities Master Plan*

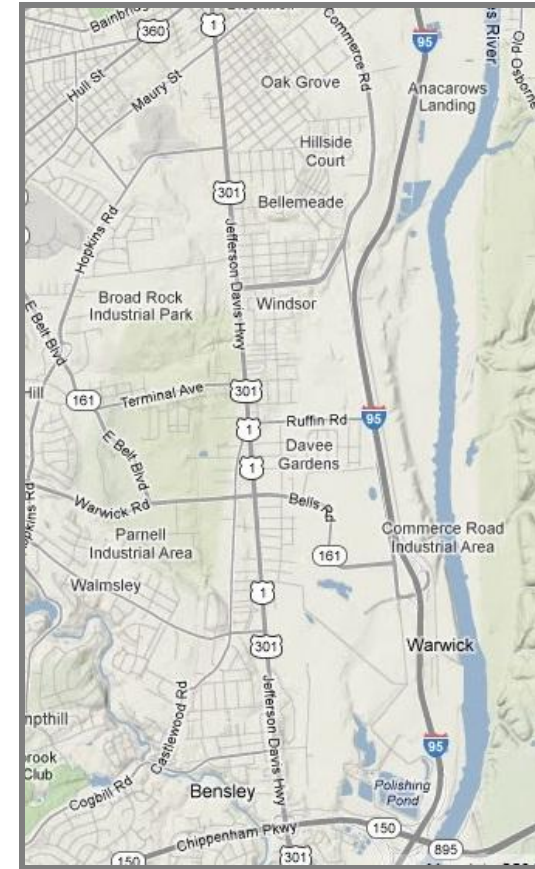
The Plan makes several key recommendations that are particularly relevant to the Jefferson Davis Highway Corridor because of its lack of green and open space. (Parks Plan 11-14) These recommendations include:

- Neighborhood and community parkland acquisition is needed in underserved areas of the City and existing neighborhood and community parks must be improved to meet the needs of residents for the future.
- Development of park trails and greenways is needed throughout the City to allow people to use them for transportation, fitness, and recreation purposes.
- Repair and upgrade existing neighborhood, community and regional parks, as well as recreation facilities, to attract positive use and create a strong image of public spaces in the City and to enhance use and property values.

See Appendix D-2 for a detailed summary of the Community Needs Assessment conducted in the City’s Plan.

Environmental Conditions

Environmental conditions of the study area are important not only to the evaluation of land for green and open space, but also for the purposes of residential, commercial, and industrial uses. Geography and terrain play a role in locations of various land uses, as do environmental regulations. Additionally, the location of brownfields and hazardous waste cleanup sites are important to note for green and open space designation because of the sensitivity of this type of land use to environmental harm.



Map 3.4.2: Geographic Features of Corridor
Source: Google Maps

Geography and Topography

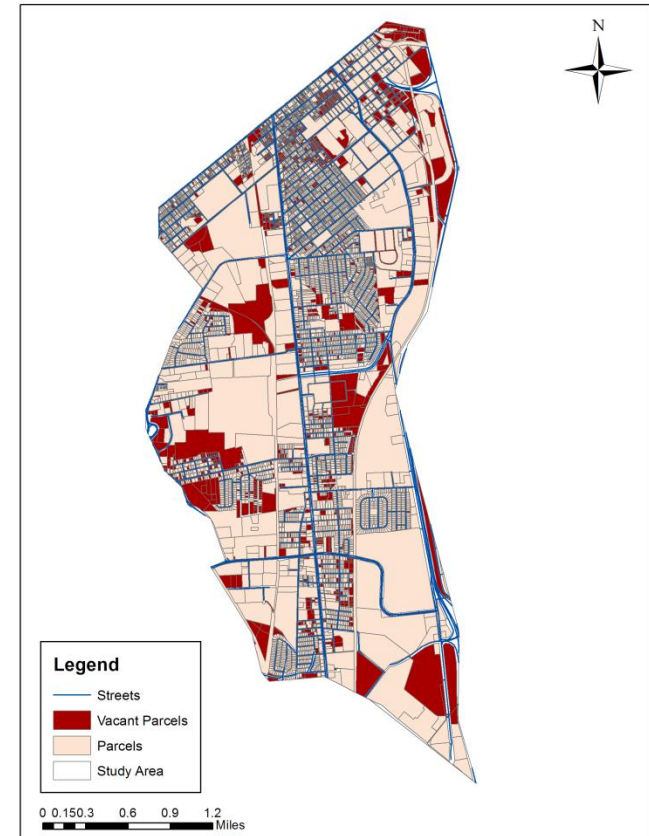
Map 3.4.2 above shows the geographic features of the study area. To the east lies the James River, and there are several smaller bodies of water within the study area. These include Spray Pond and Polishing Pond in the northwest corner of the intersection of Chippenham Parkway and Interstate 95. The

terrain of the study area is mostly flat. The area also contains Chesapeake Bay Resource Management Areas, brownfields, and hazardous waste sites, none of which should affect development in the area, as explained in Appendix D-3.

Zoning and Current Land Use

Determining the location and utility of green and open spaces within the study is important to understand how they currently serve the surrounding community. Two primary categories of land use were analyzed based on parcel data obtained from the City of Richmond Assessor’s Office. Vacant parcels and parcels with some type of open space designation (currently zoned ‘OS,’ for example) were used to analyze the current status and future potential for green infrastructure. Map 3.4.3 shows the spatial distribution of vacant parcels and developed parcels within the study area.

Vacant parcels are considered to have no or little development, while the parcels category accounts for land with varying degrees of development, containing either in use, abandoned, and dilapidated structures. There are a number of vacant parcels within the Jefferson Davis Highway Corridor that could be developed into parks, community gardens, or left undeveloped. Photo 3.4.5 shows an example of such an area.



Map 3.4.3: Vacant Parcels within Study Area
Source: City of Richmond

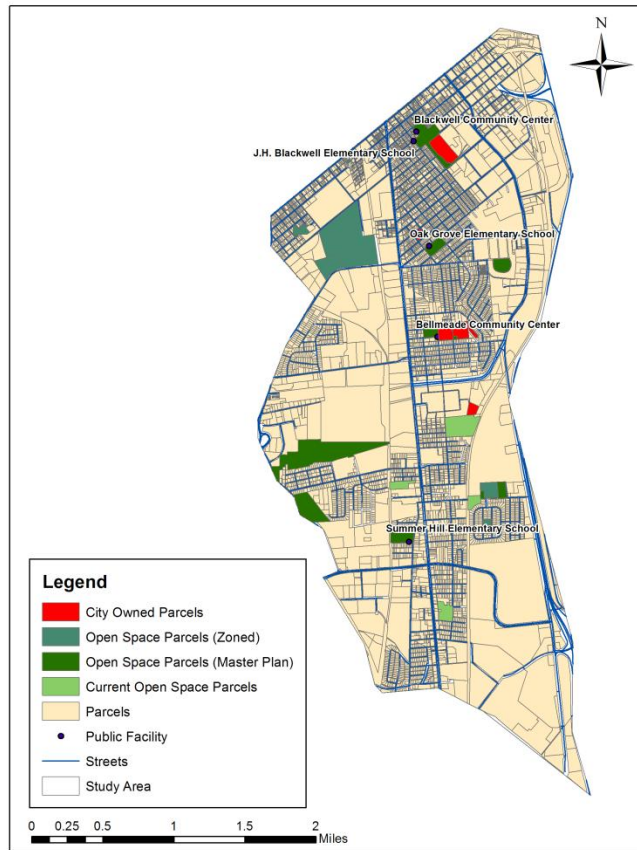


Photo 3.4.5: Empty Parking Lot - Southern End of Corridor
Source: Phillip Sperry

A total of 1,076 vacant parcels can be found within the study area, where the vast majority are five acres or smaller. The 1,076 vacant parcels comprise 691.65 acres, or 16.6% of the entire study area. While many of the vacant parcels are small in size (the average parcel size is .67 acres), several are larger and offer greater opportunities to create large scale conservation sites for public use. Twenty parcels, or 1.9%, of vacant parcels are larger than five acres, providing opportunities to create neighborhood, community, or regional parks along the Jefferson Davis corridor based on the minimum size of parks prescribed in the *Parks, Recreation and Community Facilities Master Plan*. The remaining 98.1% of vacant parcels are smaller than five acres and vary in size from .1 acre to 4.9 acres, offer a substantial variety of spaces that could be used for pocket parks or community gardens. (See Appendix D-4: Map of Size of Vacant Parcels)

Map 3.4.4 shows the location of city owned parcels within the potential study area in relation to parcels that have been zoned 'OS,' or open space, and parcels that are recommended to become open spaces as prescribed in the city of Richmond 2000 - 2010 Master Plan. It is important to note that the distribution of open space parcels should be analyzed in relation to the locations of vacant parcels. Analysis focusing on the relationship between vacant parcels and those considered open space by various documents (city of Richmond zoning code, city of Richmond Master Plan) could provide insight into the most appropriate sites to include as a component of the proposed land use optimization plan. Additionally, the locations of two types of public facilities (elementary schools and community centers) have been mapped to indicate the prevalence of such resources within the study area, as well as their proximity to present and planned open spaces.

For the purpose of this analysis, open spaces, or green spaces, can be defined as parcels that maintain some degree of conservation status (city park) or have limited development while offering outdoor recreational opportunities (community center). Other parcels with the 'OS' designation are undeveloped with varying degrees of tree cover, where some are relatively clear of vegetation while others remain populated with heavy vegetation.



Map 3.4.4: City Owned and Open Space Parcels
Source: City of Richmond

Using these three classifications to differentiate between the utility of open space parcels provides a foundation for understanding the status of open space parcels in the study area. A total of 170 acres, or 4% of the study area, maintains

one of the three types of open space classification. This value was determined by using the total acreage for all parcels within the study area, which was divided by the total acreage of parcels considered ‘OS’ for this analysis. It is important to note that the three types of open spaces (currently zoned ‘OS’, those included in the Master Plan, and current open space parcels) may overlap one another and should be differentiated when mapping their locations, which was taken into account when determining the amount of open space acreage in the study area. In this vain, individual maps were generated for each of the three ‘OS’ classifications to determine their exact location, where it can be noted that the primary relational overlap in ‘OS’ parcels can be found when comparing the map of zoned open space parcels and parcels recommended to become open spaces in the City of Richmond 2000 - 2010 Master Plan.

This comparison reflects the City’s intent to zone for open spaces according to the Master Plan document. A final important designation to make is the utility of parcels classified as ‘OS,’ which may not function as expected in reality. There are some open space parcels within the study area that were found to have various signs of human activity to indicate these spaces may be currently used by individuals for unknown reasons. Depending on which open space parcels are determined best suited for green infrastructure expansion along Jefferson Davis, cleanup efforts and site rehabilitation

would need to be undertaken to remove refuse and other debris from the selected parcels.

The distribution of parcels currently zoned 'OS,' and those parcels with an 'OS' designation in the 2000 - 2010 Master Plan, show a number that are adjacent or within close proximity to one another. Additionally, city owned parcels are either adjacent or near to present and future open space parcels. This presents substantial opportunities to enhance the green infrastructure of the Jefferson Davis Highway Corridor. Another important relationship is that between public facilities and open space parcels. For this analysis, the two types of public facilities found within the potential study area are elementary schools and community centers.

Three elementary schools and two community centers are present and can be found near to or within open space parcels. J.H. Blackwell, Oak Grove, and Summer Hill elementary schools are the primary public education centers serving the study area; no middle, high, or alternative schools are currently in the immediate vicinity. (City of Richmond Public Schools) The two community centers serving the area, Bellmeade Community Center and Blackwell Community Center, offering varying opportunities for outdoor recreation and should be considered when developing an open space land use plan. (City of Richmond Department of Parks and Recreation) Furthermore, an educational initiative developed as a partnership between the City of Richmond public schools

and the Department of Parks and Recreation, the "Before and After School Program," is a potential asset to consider when developing a green infrastructure network as there might be opportunities to have the natural environment become a learning laboratory for schoolchildren.

Appendix D-5 describes in detail the demographics and socioeconomics along the Jefferson Davis corridor, using a variation of the study area as previously noted. In sum, population density increases as you travel west of the corridor and south along the corridor, as do concentrations of people under 18, elderly populations, and households with higher incomes. The western and southern areas of the corridor are also the areas facing the largest deficits of green and open space. The presence of open spaces serves to benefit an entire community, but their utility can determine who is most likely to incorporate them into daily life. The prevalence of youth in the study area is important, as younger populations are likely enjoy greater benefits from playgrounds and parks. However, larger open spaces that might include trails or greenways offer outdoor recreational opportunities that can serve all sectors of the population.

The *Parks, Recreation and Community Facilities Master Plan* reveals there is a deficit of pocket, community, and neighborhood parks, as well as general open spaces, based on the minimum service level per city resident, the service area prescribed for each type of park or open space, and the

current amount of parkland and open spaces provided by the city for citizen use. There is a need for more green spaces (parks or otherwise) across the city, as well as within the study area. With a total population of 26,205 individuals living within the study area, and only 170 acres of designated open space, there is currently .65 acres of open space per city resident; this total is adequate to support the installation of pocket parks while meeting city open space and facility standards, but is not enough to allow for neighborhood parks and other types of larger open spaces. With 13.9 acres of open space currently available for citizens when analyzing the City of Richmond as a whole, it is clear that the study area has an extreme deficit of open space for local use. Additionally, it should be noted that not all of the 170 acres are parks or usable open space; the majority of it remains undeveloped and in some cases is heavily forested and not conducive to recreational use. Therefore, in reality, the amount of open space per capita in the study area is significantly less than the .65 acres. Based on this figure alone, green and open spaces will play a crucial role in determining the optimal use of land along the Jefferson Davis Highway Corridor.

SECTION 4

Market Analysis

SECTION 4.1

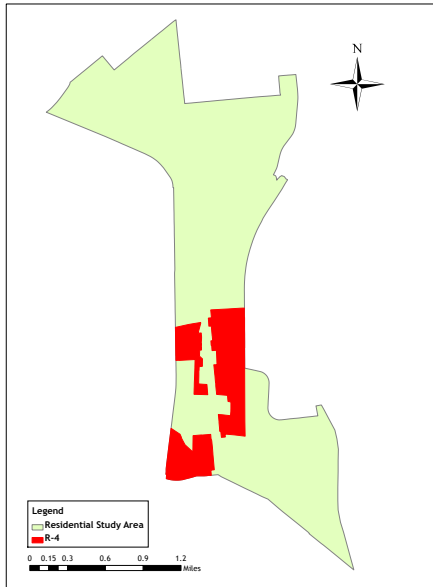
RESIDENTIAL

A market analysis determines if and where things such as affordable housing can become a part of a neighborhood. This analysis was broken down into the overarching concepts of supply and demand. For the supply side, the study analyzed the current zoning throughout the area as well as the ways in which the specific zoning was being utilized. For the most part, the delineated area has been developed in accordance with the general intent of the zoning category. The only exceptions are two larger parcels located in the southern end of the study area. With the current under-utilization of zoned land throughout the study area, infill and redevelopment are viable options. On the opposite end of the spectrum, for the demand side, the study analyzed migration patterns as well as certain demographic characteristics of those migration patterns in and out of the study area. By analyzing both the supply and the demand side of housing throughout the delineated area, the study can better shed light on whether more housing is needed, what type of housing should be developed, and if that development should even occur.

Analysis Methodology. The City of Richmond Zoning Ordinance outlines minimum lot areas that can support a designated type of development. For the residential analysis this would be applied to a designated square footage of lot area per individual dwelling unit. As most zoning districts support various types of dwelling units this then supplies a minimum density and a maximum density range per dwelling unit. Further, by then applying the individual unit density allowed under the zoning ordinance to the total zoning area, the total number of units that could be allowed can be determined. By comparison to the current dwelling units, it can be roughly estimated whether the zoning districts are maximized or have remaining capacity.

Market Supply & Zoning Analysis

R-4 Zoning (Map 4.1.1). The R-4 zoning district, titled “single-family residential”, has a total of 750 parcels within the study area; however, only 596 parcels are developed with residential dwellings (See City of Richmond, Real Estate Assessor). According to the City of Richmond Zoning Ordinance, a building within the R-4 zoning district must be built on a minimum of 7,500 square feet of land resulting in a maximum density of 951 units. Currently, the R-4 zoning district is only 62% utilized, thereby leaving ample space for infill development.



Map 4.1.1: R-4 Zoning Within Study Area
Source: City of Richmond, Real Estate Assessor

Of the 596 parcels with a dwelling, only 45 of the dwellings are below the “normal” conditions for the age of the dwelling. The majority of the houses in the R-4 zoning area are in normal condition for the dwelling’s age (See City of Richmond, Real Estate Assessor).

R-5 Zoning (Map 4.1.2). In the R-5 zoning district, titled “single-family residential”, dwellings can be located on parcels no smaller than 6,000 square feet per dwelling unit (See City of Richmond Zoning Ordinance). There are a total of

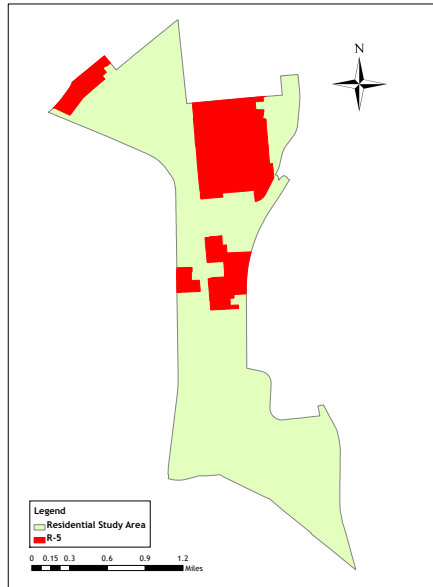
1,475 parcels in the R-5 district with 1,389 parcels having either a residential dwelling on it or are vacant.



Photo 4.1.1: Home in R-4 Zoning District
Source: City of Richmond, Real Estate Assessor

The rest of the parcels have a non-residential use on it such as a church or convenience store. There are a total of 1,248 dwelling units within this zoning district. The maximum number of dwellings allowed in the current R-5 zoning district is 2,143, thereby showing that this zoning district is only 58% maximized (See City of Richmond, Real Estate Assessor).

Current housing is in good condition, with only 144 houses being below the “normal” condition threshold, equating to about 10% of the total number of houses. The rest of the houses are in fair condition or better.



Map 4.1.2: R-5 Zoning Within Study Area
Source: City of Richmond, Real Estate Assessor

Should the demand for more housing in the study area, and more specifically in the R-5 zoning district, increase there is ample space for additional housing units through infill and minor redevelopment. Large-scale housing redevelopment is not necessary, and efforts should be made to maintain the quality of the current housing stock (See City of Richmond, Real Estate Assessor).

R-6 Zoning (Map 4.1.3). The R-6 zoning district, titled “single-family attached residential”, allows for single-family attached and detached dwellings, as well as two family

attached and detached dwellings. This zoning district is intended to “preserve and enhance the established character of older residential neighborhoods” throughout the City (See City of Richmond, A Citizens Guide to Residential Zoning Districts and Regulations).

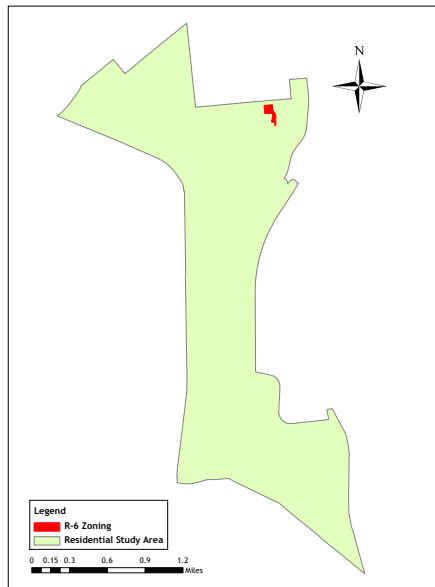


Photo 4.1.2: Home in R-5 Zoning District
Source: City of Richmond, Real Estate Assessor

Single-family attached dwellings carry the highest density in the R-6 zoning district, at 2,200 square feet per dwelling unit; and, single-family detached dwellings carry the lowest density at 5,000 square feet per dwelling unit (See City of Richmond Zoning Ordinance). This translates into a range of 23 to 52 dwelling units.

Overall, this area has been developed in accordance with the general intent of the zoning category. Infill and minor redevelopment could be used to create additional housing

opportunities for this zoning district but at a limited level due to the small district. In addition, the cost effective nature of attached housing, both to developers and to potential homeowners, may justify increasing the R-6 zoning district in the study area to vary housing styles and increase more affordable ownership opportunities.



Map 4.1.3: R-6 Zoning Within Study Area
Source: City of Richmond, Real Estate Assessor

R-6 zoning comprises a small portion of the entire residential study area and is located in the northeastern corner. There are 43 parcels zoned R-6 and 40 dwelling units; therefore, the

R-6 Zoning District is 76% maximized (See City of Richmond, Real Estate Assessor).

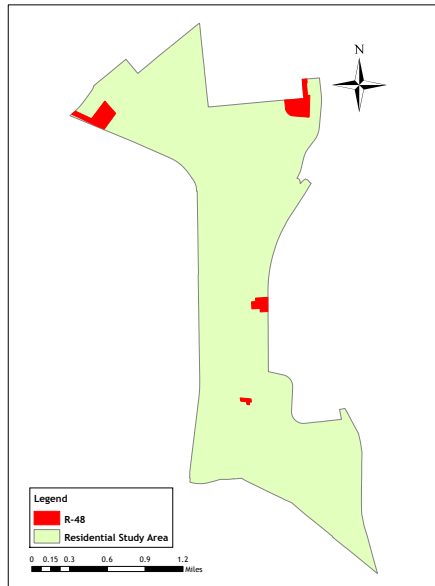
The deficiency comes primarily from 3 vacant parcels (totaling 0.53 acres), which could possibly support a total of 10 dwelling units. Further, according to the City of Richmond Assessor there are 10 dwellings considered in “very poor” condition, which constitutes 25% of the total dwelling units in the area.



Photo 4.1.3: Homes in R-6 Zoning District
Source: City of Richmond, Real Estate Assessor

R-48 Zoning (Map 4.1.4). The R-48 zoning, titled “multi-family residential” allows single-family attached and detached dwellings and two family attached and detached dwellings. This zoning district is intended to “encourage townhouse or garden-type apartments... where traffic and utility systems accommodate such density” (See City of Richmond, A Citizens Guide to Residential Zoning Districts and Regulations). Multi-family, apartment style, housing carries the highest density at

2,200 square feet per dwelling unit; and, single-family detached dwellings carry the lowest density at 3,600 square feet per dwelling unit (See City of Richmond Zoning Ordinance). This translates into a range of 643 to 1,052 dwelling units.



Map 4.1.4 - R-48 Zoning Within Study Area
Source: City of Richmond, Real Estate Assessor

R-48 zoning comprises a small portion of the entire residential study area, and is intermittently located throughout the entire study area. There are 9 parcels zoned R-48, ranging from 1.7 acres to 20.48 acres. Two parcels are used for religious or educational purposes; two parcels are public housing; four

parcels were developed using Low Income Housing Tax Credits; and one appears to be market rate multi-family housing. All parcels located in R-48 zoning are improved and do not appear to have reserved areas for future development (See City of Richmond, Real Estate Assessor).

There are approximately 809 dwelling units currently built. Therefore, the R-48 zoning is 77% maximized, with a 243-unit deficit. The largest development is the Hillside Court public housing community with 402 total units; however, the total area could support 563 units. The two institutional parcels could support a total of 11 units (See City of Richmond, Real Estate Assessor).



Photo 4.1.4: Apartments in R-48 Zoning District
Source: City of Richmond, Real Estate Assessor

Further, according to the City of Richmond none of the dwellings are below the normal condition threshold; they are

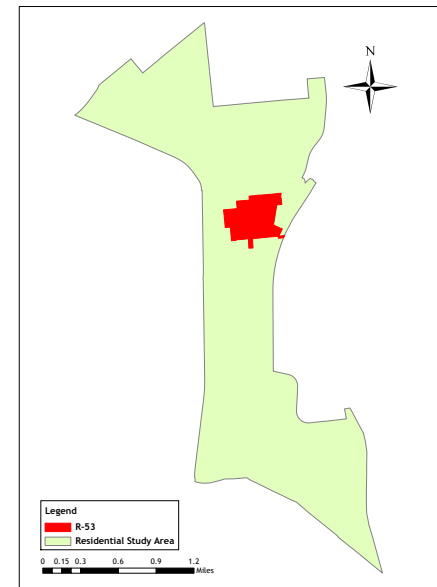
all categorized as in either “normal” or “good” condition. Four developments are known to have been built prior to 1977.

With the exception of the two institutional properties, both of which are compatible uses within the zoning code, the parcels located within the R-48 zoning district have been developed in accordance with the zoning ordinance. Those that were originally built more than 35 or 40 years ago could be targeted for future redevelopment.

R-53 Zoning (Map 4.1.5). The R-53 zoning, titled “multi-family residential”, allows single-family attached and detached dwellings and two family attached and detached dwellings. This zoning district is intended “...for application in the inner-city areas where multi-family is firmly established... and the amount of open space is substantially less than required in other low-rise districts” (See City of Richmond, A Citizens Guide to Residential Zoning Districts and Regulations).

Multi-family, apartment style, housing carries the highest density in the R-53 zoning district, at 1,250 square feet per dwelling unit (on lot sizes of at least 5,000 square feet); and single-family detached dwellings carry the lowest density at 3,600 square feet per dwelling unit (See City of Richmond Zoning Ordinance). This translates into a range of 791 to 2,278 dwelling units.

This zoning district includes 22 parcels with a total of approximately 65.37 acres in one area toward the northern portion of the study area - 9 parcels are vacant, and one is used as a basketball court (but, is considered vacant for this analysis). One parcel is public housing, and 3 parcels were developed using Low Income Housing Tax Credits (See City of Richmond, Real Estate Assessor).



Map 4.1.5: R-53 Zoning Within Study Area
Source: City of Richmond, Real Estate Assessor

There are approximately 426 dwelling units currently built in the R-53 zoning district and is only 19% maximized, with a 1,852-unit deficiency. Most of the dwelling unit shortage comes from the large vacant parcels in the zoning district. 10

parcels totaling 31.25 acres are vacant, which would support approximately 1,089 dwelling units. This leaves approximately a 763-unit deficit among those parcels currently developed. This vacant land could also support 378 single-family detached housing units or 618 single-family attached dwelling units (See City of Richmond, Real Estate Assessor).

In addition, upon a visual inspection there appears to be at least 4 parcels with significant reserved areas for additional housing units. According to the City of Richmond Assessor, the existing dwelling structures in the R-53 zoning district have been built roughly between 1947 and 1978. They are also all considered “normal” for age, and may only need occasional upgrades and not full renovations (See City of Richmond, Real Estate Assessor).

While many of the current improvements may not be readily viable for redevelopment, there is ample vacant land that can be utilized in the future if the need for additional multi-family housing is needed, whether for low-income residents or at market rate.

Cost of Housing. As noted previously, the homeownership rate has been declining over the past 20 years within the census tracts in the study area. Housing affordability (those paying less than 30% of their income toward housing expenses), for both owner and renters, is substantially lower within the study area as compared to the City of Richmond.

Generally, local residents are still unlikely to own their own home, as evidenced by the fact that there are a greater percentage of renters to owners throughout the study area (See Section 3.1).



Photo 4.1.5: Apartments in R-53 Zoning District
Source: www.graystoneplace.com

The difference between the median rental rate within Census Tract 607, 608, 609 and the City of Richmond appears fairly insignificant (See Table 4.1.1). However, when considering the lower income status of the study area, this may be indicative of disproportionate rental rates as compared to the type and condition of available housing. When looking more specifically at rental rates important differences are shown. There is a broad range of housing units available based on the monthly rent paid within Census Tract 607 and the City of Richmond. However, within Census Tract 608 and 609, the majority of housing available falls between \$500 and \$1,249 per month (See Table 4.1.2).

TABLE 4.1.1: GROSS RENT

	Tract 607	Tract 608	Tract 609	City of Richmond
Median Gross Rent	\$789	\$740	\$825	\$805
Source: U.S. Census Bureau (2010 ACS - 5 yr. est.)				

Those paying under \$300 are much more concentrated in Census Tract 607; and those paying between \$300 and \$500 are much more concentrated in Census Tract 608 (See Table 4.1.2). This could be explained by the presence of two public housing and other low-income housing communities within these census tracts. Many of these residents pay a prorated portion of rent based on their household income status and/or receive other forms of housing subsidies.

TABLE 4.1.2: PERCENTAGE OF TOTAL HOUSING UNITS AT RENTAL RANGE

	Tract 607	Tract 608	Tract 609	City of Richmond
\$0 to \$299	20.5%	1.9%	0.0%	11.1%
\$300 to \$499	8.0%	13.4%	8.6%	5.6%
\$500 to \$699	10.0%	20.7%	19.7%	18.7%
\$700 to \$899	27.0%	38.7%	39.8%	26.6%
\$900 to \$1,249	24.3%	15.2%	28.9%	24.7%
\$1,250 or more	10.2%	10.1%	3.0%	13.4%
Source: U.S. Census Bureau (2010 ACS - 5 yr. est.)				

Census Tract 609 appears to have more residents paying rents between \$700 and \$1,249 than the other census tracts in the study area and the City of Richmond. While most of the zoning in Census Tract 609 is R-4, which carries the least amount of density within the area, the larger lot areas could be fueling higher rental costs (See Table 4.1.2).

Potential Market Demand

Population Projections. According to the Virginia Employment Commission Labor Market Information System the population of the City of Richmond is projected to decline between 2010 and 2030 by 8.4% from 204,214 to 187,066 (See Figure 4.1.1). In light of the recent population decline of the Jefferson Davis study area it can be assumed further decline will take place. Among the primary racial groups present in the study area, Hispanics are the only ones expected to see an increase in population between 2010 and 2030 (5.4%). Whites see the greatest decrease of 14.7%, and Blacks will decline by 2.0% (See Virginia Employment Commission). As it appears that the Jefferson Davis Corridor has a growing Hispanic enclave, it is likely that many could be more likely to settle in the study area. Given the current low-income levels, high poverty and low rates of affordable housing in the study area, especially in the south portion where the majority of Hispanics reside, there may be future demand for affordable housing options. By and large, though, a decreasing population does

not fuel added demand for housing. Rather, maintaining and improving the quality of the current housing stock may contribute toward bringing people back to the area.

Mobility. Part of determining the types of people that would be potentially seeking housing within the study area is to analyze those that are either moving to or within the City of Richmond (See Appendix A-8).

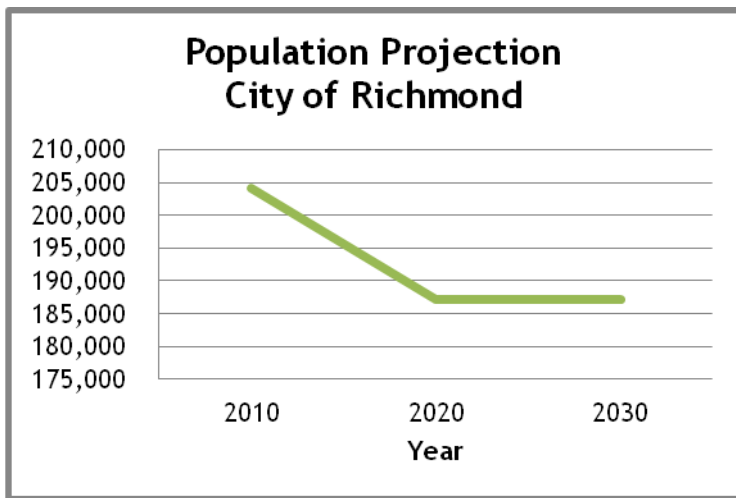


Figure 4.1.1

Source: Virginia Employment Commission, Labor Market Information

Of those moving to the City of Richmond, there has been a large influx of individuals of the Asian race as well as individuals between the ages of 18 to 24 years old over the last five years. The largest percentage of these different groups of individuals came from another county or city within Virginia; however, it appears that these different individuals have also

been moving within the City of Richmond. In addition, there has been a substantial increase in the number of people of Hispanic or Latino origin as well as those individuals between the ages of 25 to 34 years old (See Appendix A-8).

According to the mobilization statistics, the City of Richmond is not an area that seems to be attracting those individuals with higher incomes. Specifically, a large percentage of those individuals moving within the City or moving to the City have an average individual income of \$35,000 or less. In addition, a person's education level does not seem to heavily impact whether a person would move within or to the City of Richmond (See Appendix A-8).

Finally, those individuals who live above the poverty line are less likely to move within the City of Richmond or from another city. It appears that the likelihood of moving to or within the City of Richmond decreases as a person makes more money and rises higher above the poverty line (See Appendix A-8).

If it is determined that providing additional residential options is viable, there should be a focus on providing quality affordable housing within the City of Richmond and, more specifically, within the Jefferson Davis Highway Corridor. Creating higher quality housing would have to depend, more specifically, on other socioeconomic elements of the community and the City of Richmond as a whole, such as the

presence of quality jobs, improved safety, varied commercial activity and recreational opportunities, to name a few.

The supply side of the market analysis revealed the current zoning throughout the area as well as the ways in which the specific zoning is being utilized. For the most part, the study area has been developed in accordance with the general intent of each zoning category. The supply-side analysis also uncovered the existence of underutilized land as well as vacant parcels for infill or redevelopment projects throughout the area. The demand side however, showed a decline in population. Not only is the area's population aging but the migration out of the area is larger than the population moving in. Also, the majority of those moving into the area have equal to or even less annual income than the former residents. This shows that not only is there not a great need for more housing in the area, those moving in might not even be able to afford it. If housing development is to occur, based on the market analysis, it must be largely affordable and probably best served by redeveloping dilapidated or run down housing stock that already exist, in conjunction with cohesive infill development.

SECTION 4.2

COMMERCIAL

Methodology

The purpose of the commercial use market analysis is to identify potential demand for particular types of retail businesses in the Jefferson Davis Corridor study area. An unmet demand method was used to conduct this analysis.

The unmet demand method requires the input of specific information into a model, which produces estimates on the number and types of commercial uses the area's population can support. In other words, the model attempts to distinguish types of uses where current demand outstrips current supply. Where this mismatch exists, further scrutiny is applied with regard to known characteristics and conditions of the area in order to propose uses with a strong chance for commercial success.

Demand

The demand side of the model is produced by calculating the total amount of money potentially spent in the trade area for each retail category. These category expenditures are a function of Inputs 1, 2, 3, 4, and 5 from Table 4.2.1. For commuters, potential expenditures were based on citywide

median household income. Capture rates of 1% of travelers using Jefferson Davis Highway, and .5% of those using I-95 were estimated.

TABLE 4.2.1: MODEL INPUT DATA

1	Count of study area households by tract
2	Median household income by census tract
3	Traffic counts from the trade area lengths of Jefferson Davis Highway and I-95 (VDOT 2010)
4	Household expenditure data from the BLS Consumer Expenditure Survey
5	Information on spending habits of area residents (Swansboro Triangle Commercial Revitalization Plan 2004)
6	Median sales per square foot figures by retail use (ULI 2008)
7	Existing uses by retail classification (City Assessor data and visual surveys)
8	Typical square footage of existing uses by retail classification (City Assessor data)
9	Median gross leasable area (GLA) by retail classification (ULI 2008)

Supply

The supply side of the model tabulates the total amount of square footage that exists in the trade area for each retail classification. For analysis purposes, it was first necessary to count and categorize existing businesses (Input 7). This was accomplished using City Assessor data, and then supplemented by a visual survey of uses where more specific data was needed. Median square footage for each use type (Input 8) was then applied to the existing number of stores of that type in order to come up with the total existing square footage for each classification.

Unmet Demand

The last step in the model is to determine unmet demand for each retail category by subtracting the total existing square footage in that category from the number of square feet the community can support. This supportable square footage figure is derived by dividing the total amount of money spent on goods and services of a particular type (groceries, for example) by the median sales per square foot of that type of store. Then existing square footage is subtracted from supportable square footage. The figure that is left (unmet demand) is the number of additional square feet (or excess supply) that the community can support in each retail category. Finally, this unmet demand figure is divided by the median gross lease able area (GLA) for each business type to

produce a more user-friendly estimation of unmet demand expressed in potential new store units (See Table 4.2.2).

TABLE 4.2.2: UNMET DEMAND MODEL				
Total Trade Area		Median Sales per		# of Supportable
Expenditures	÷	Square Foot	=	Square Feet
(by category)		(by category)		(by category)
# of Supportable Square	-	Existing Square Feet	=	Unmet Demand (in
Feet (by category)		(by category)		square feet)
Unmet Demand		Median Gross		
(in square feet)	÷	Lease able Area	=	Potential New Units
		(GLA)		

Market Analysis Results

Preliminary interpretation of the market analysis shows unmet demand in six retail categories and 11 subcategories (See Tables 4.2.3 and 4.2.4). The highest levels of unmet demand, in terms of potential additional supportable units, are for products and services related to tobacco, audio/visual equipment, and specialty foods. There is moderate unmet demand in the study area for household furnishings, apparel for women and girls, products and services focused on pets, toys, and hobbies; footwear; and medical services. Marginal unmet demand exists for apparel targeted toward men and boys and apparel for children.

TABLE 4.2.3: GREATEST UNMET DEMAND BY CATEGORY ²		
Category	Square Feet	Potential Additional Supportable Units
Entertainment	84,116	22.9
Audio and visual equipment and services	48,854	18.2
Pets, toys, and hobbies	35,263	4.6
Households	39,897	6.9
Household furnishings and equipment	39,897	6.9
Apparel	52,990	12
Women and girls	31,010	6.1
Footwear	10,256	3.4
Men and boys	8,403	1.4
Children	3,322	1
Food at Home	22,132	11.1
Specialty Markets	22,132	11.1
Tobacco products	20,990	18.4
Healthcare	5,936	3.4
Source: City of Richmond, Real Estate Assessor		

TABLE 4.2.4: GREATEST UNMET DEMAND BY SUBCATEGORY		
Subcategory	Square Feet	Potential Additional Supportable Units
Audio and visual equipment and services (Entertainment)	48,854	18.2
Household furnishings and equipment (Households)	39,897	6.9
Pets, toys, and hobbies (Entertainment)	35,263	4.6
Women and girls (Apparel)	31,010	6.1
Specialty Markets (Food at Home)	22,132	11.1
Tobacco products and smoking supplies	20,990	18.4
Footwear (Apparel)	10,256	3.4
Men and boys (Apparel)	8,403	1.4
Medical services (Healthcare)	5,936	3.4
Children (Apparel)	3,322	1
Source: City of Richmond, Real Estate Assessor		

² Complete data available in Appendix B-2

While measurements of demand such as this are informative, they can be overly simplistic and should not be taken at face value. Rather, these figures should be considered as a starting point for further study. In order to gain a more nuanced idea of the type and quantity of business development that might be successful, it is necessary to examine the figures in relation to factors present in the study area, the greater Southside community, and the entire City of Richmond.

Categorical Analysis

Apparel

Data from several Apparel subcategories (Women and Girls, Footwear, Men and Boys, Children) indicates that area residents may have a demand for clothing and footwear that is not being met locally. Indeed, the analysis shows that there is over 50,000 sq. ft. of unmet demand across these four categories (Table 4.2.3). However, the primary Apparel category includes an additional subcategory, “Other apparel products and services”. When existing stores were surveyed, discount apparel stores and establishments that appeared to sell both men’s and women’s items were placed in this catch-all grouping. In this subcategory, supply exceeds demand by about 17,000 sq. ft, reducing the overall unmet demand for apparel.

In this era of discount megastores such as Wal-Mart and Target, shopping opportunities outside of the study area must

be considered. While the methodology used in this plan does not allow for these out-of-area retailers to be included in a quantitative fashion, their impact can be evaluated anecdotally.

Within roughly 10 miles of the study area are four Wal-Mart and three Target stores (Appendix B-2.1). It is reasonable to assume that at least a portion of the study area’s unmet demand for apparel is being satisfied by these businesses. While these stores are likely meeting much of the excess demand, their merchandise is typically designed for mass appeal. Apparel stores specializing in particular styles or trends may be able to capitalize on a niche market that is likely not being served by a megastore.

Table 4.2.4 shows that the community could possibly support up to six additional women’s and girl’s apparel retailers. While strong retail competition from outside the study area exists, the high unmet demand shown by the quantitative analysis suggests that a modest number of additional businesses in the Apparel category, especially those targeting female customers, may find success in the corridor.

Entertainment

The Entertainment category shows the highest level of unmet demand in the analysis. However, even more than the Apparel category, this figure is likely to be skewed by external factors.

Today, entertainment electronics are purchased almost exclusively from big-box retailers. It is probable that stores such as Wal-Mart and Best Buy are meeting the demand for entertainment equipment generated by residents of the study area. Additionally, items such as televisions are expensive and purchased infrequently. Therefore, unlike convenience items, consumers are willing to shop regionally in order to find the best deals, furthering the probability that the unmet demand in this subcategory is simply a function of the study area boundary. Additionally, socioeconomic characteristics of the residents are likely to have an effect. As outlined in the Existing Conditions section, census tract median incomes in the study area are low relative to the City and the region, and a retailer would be unlikely to identify a lower-income area as a target for expansion.

The pets, toys, and hobbies retail subcategory also indicates unmet demand. Demand in this subcategory might be a more realistically portrayed by the data. Hobby shops often sell highly specialized merchandise. As in the Apparel category, niche markets may present opportunities for smaller retailers. The analysis indicates that the study area could possibly sustain four stores in this category.

Households

The analysis shows that the study area lacks stores selling household furnishings and equipment. However, competition

from nearby large retailers was determined to cancel out this apparent demand.

Food at Home; Tobacco; Healthcare

The relative scarcity of specialty markets combined with the particular demographics in the study area presents one of the most promising opportunities for retail growth. According to American Community Survey data, the population of the seven census tracts comprising the southern portion of the Study Area is 14% Latino. In comparison, the population of the City as a whole is approximately 5.5% Latino (U.S. Census).

While the visual survey of the area identified a number of Latino markets, the market analysis appears to indicate supply does not meet demand. The demographics of the area, the small convenience trade zone typical of markets, and the entrepreneurial spirit of the Latino population all point to a reasonable assurance for success of additional specialty markets. The quantitative data show the community may be able to support 11 such establishments.

Finally, the market analysis shows that the corridor may be able to support three additional medical service providers. This is another subcategory which has great potential. Convenience is a factor when choosing a routine medical care provider. Small or specialty independent medical offices are viable from a business standpoint, therefore several dental

clinics or family medical practitioners may successfully locate in the corridor.

Conclusion

The market analysis and qualitative assessment of external factors indicate that new enterprises focusing on niche business and convenience shopping will fare best in the study area. Specifically, the market analysis suggests the need for businesses of this nature in the categories of medical services (3.4); hobbies, pets, and toys (4.6); women and girls apparel (6.1); and specialty markets (11.1). Having determined these supportable business categories, we then conducted a suitability analysis in order to identify potential sites for new businesses.

Suitability Analysis

In order to effectively implement portions of the plan, a suitability analysis of commercial locations along the Jefferson Davis corridor was conducted. A suitability analysis is a process employed to evaluate the relative appropriateness of using land for a particular purpose. The analysis assumes that characteristics of land parcels are, to varying degrees, suitable or unsuitable for the planned use. A model is constructed to overlay and weigh these predictive factors, and a map is produced highlighting areas from highest to lowest suitability

(In this analysis scored from 9 to 1). In short, the analysis answers the question, “What location is best?”

Two analyses were carried out. The first was intended to facilitate implementation of Commercial Objective 1.2. The intent of the analysis, in this case, is to identify commercially designated parcels along Jefferson Davis Highway that would be best suited for uses requiring large amounts of affordable space. The factors used as inputs for the model tailored to this objective include:

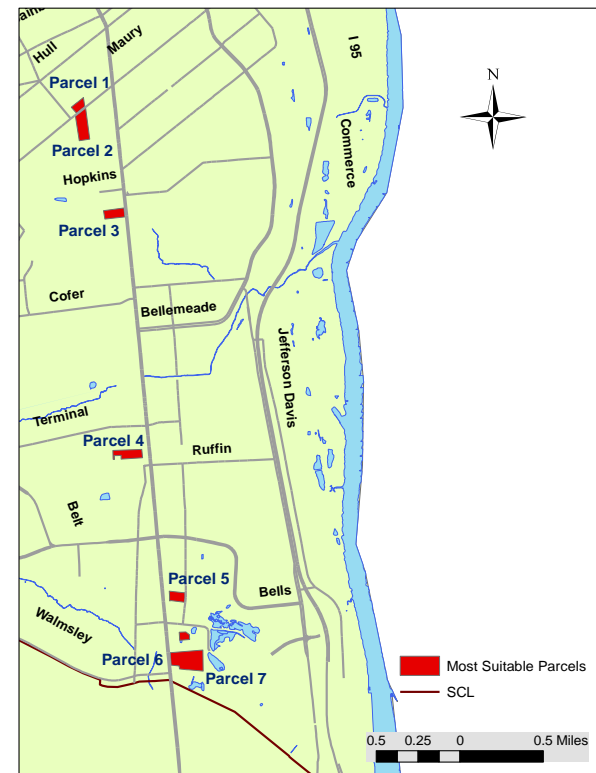
- **Parcel Size** - Only parcels over one acre were included in the analysis. Parcels of larger size were given higher scores than smaller parcels. This input was assigned a weight of 40%.
- **Proximity of High Traffic Volumes** - Map _ from the Existing Conditions section of the Plan depicts traffic volumes on sections of Jefferson Davis. Parcels were given higher scores the closer they were to the high-volume (19,000 AADT) sections. This input was assigned a weight of 17%.
- **Assessed Land Value per Square Foot** - This variable (depicted in Map _) provides information about the cost of acquiring or renting the parcel. Since the uses targeted in this objective will likely require significant amounts of land, assessed value is given a relatively heavy weight of 27%.
- **Improvement to Land Value Ratio** - This ratio is intended to assist in determining whether a parcel may be a favorable candidate for acquisition and redevelopment. It was assigned a weight of 16%.

The second analysis was conducted for Goal 2, and was intended to identify parcels that are most suitable for niche retail uses. The inputs of this suitability model include:

- **Building Square Footage** - According to data from the City Assessor’s Office, the median finished square footage of building on a commercially designated parcel with a use description of “General Retail” is 3180 sq. ft. Higher scores were given to parcels with amounts of finished space closer to this median figure. This input was assigned a weight of 35%.
- **Assessed Land Value per Square Foot** - This is the same variable used in the model above. In this model, assessed value was assigned a weight of 35%.
- **Proximity of High Traffic Volumes** - This is the same variable used in the model above. In this model, assessed value was assigned a weight of 10%.
- **Proximity to High Density Block Groups** - Because many uses that could fit into this “niche” will potentially be neighborhood-based businesses, it was important to factor into the model Census block groups within the Study Area where residents are concentrated. Parcel proximity to these tracts was considered an advantage, and this input was assigned a weight of 10%.
- **Proximity to Census tracts with high “Buying Power”** - Based on number of households and median income, the Existing Conditions section identified Census Tracts with the largest amounts of “buying power”. Parcel proximity to these tracts was considered an advantage, and this input was assigned a weight of 10%.

Large Use Analysis Results

The large use suitability analysis identified eight parcels receiving the highest score (9) given by the model. These parcels are evenly distributed along corridor. Their location is shown in Map 4.2.1. Detailed information about each of these parcels is provided in Appendix B-2.6.

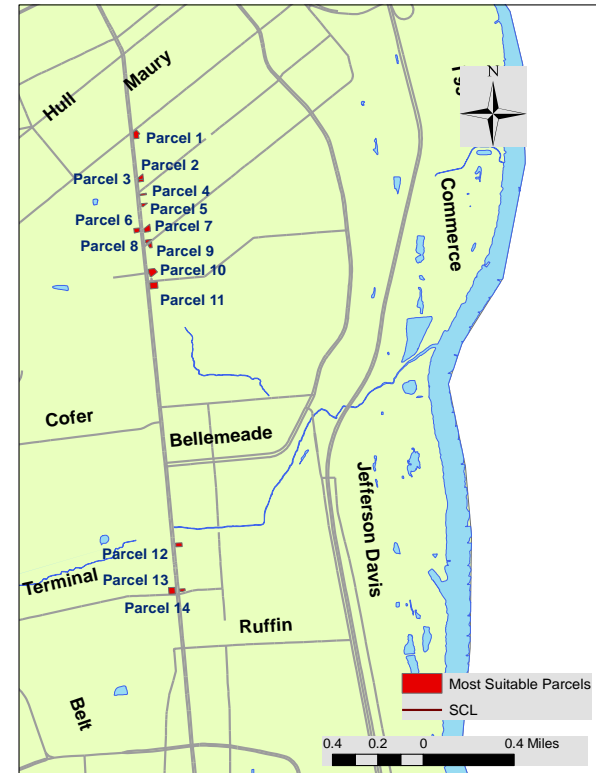


Map 4.2.1: Suitable Parcels for Large Commercial Uses

Niche Use Analysis Results

The niche use suitability analysis identified 14 parcels receiving the highest score (9) given by the model. These parcels are located primarily in the northern and central portions of the Corridor.

If sites receiving the two highest scores (8 & 9) are selected, parcels in the southern section of the Corridor are included as “highly suitable parcels” as well. A potential reason these southern parcels did not receive the highest score is that their assessed land values per square foot tend to be slightly higher. In general, the niche use analysis was less definitive than the large use analysis, as many parcels were clustered near the higher end of the suitability scale. This could be attributed to the general similarity of many of the parcels on the Corridor. Additionally, the parameters of the model were not set in a way that allowed it to pick out shopping centers as suitable sites for niche retail. This deficiency also makes this analysis less useful than the large use analysis. The locations of parcels scoring a 9 are shown in Map 4.2.2.



Map 4.2.2: Suitable Parcels for Niche Commercial Uses

SECTION 4.3

INDUSTRIAL

Richmond is a great city for business investment. The metro area is growing, the state is a “right to work” state, thus lessening the power of unionized labor, and taxes are low. Richmond is also strategically located near major highways (I-95, I-64), ports (Port of Richmond, Port of Virginia), and rail services (CSX, Norfolk Southern). The city has numerous cultural and educational attractions and institutions and is within a two hour drive of Washington D.C. Eleven fortune 1000 companies are also headquartered in the greater Richmond area (Greater Richmond Partnership, 2012).

While the city as a whole is experiencing business growth, the Jefferson Davis Corridor, once an industrial engine, has fallen behind. A changing economy and the decline of the once proud tobacco industry has conspired against the factories of the corridor. Yet, remnants of past industrial prowess might provide as much opportunity as concern for Jefferson Davis Highway. Public utility and transportation infrastructure are well established in the corridor and ripe for adaptive reuse. Lease able industrial space is also abundant and cheap.

At the end of the fourth quarter of 2011, the southwest submarket of Richmond, which is comprised of the Jefferson

Davis Corridor, the Midlothian Corridor, the Rt. 288 Corridor, and the I-95 S/I-295/Rt. 10 corridor, had an industrial vacancy rate of 10.4%, slightly better than the citywide average of 11.5% (Costar, 2012) But this number is misleading, as the corridor has so much industrial space that even a 1% improvement over the city average accounts for a very large amount of vacant space. In fact, of the 56 industrial sites available for lease or purchase in the city of Richmond, 22, or 39% of them, reside within or are in the immediate vicinity of the Jefferson Davis Corridor (VEDP, 2012). While this represents a current problem for economic development in the corridor, it also represents a great opportunity. The industrial market supply is readily available in this area; a concentrated effort on the demand side is needed to stimulate consumption of the supply. Two recent leases in the region, Open Plan System (office furniture manufacturer) at the Castlewood Park VI site, and CEPHAS Industries (recycling services company) at the 2320 Deepwater Terminal Rd site, are promising developments and could serve as industrial anchors in possible cluster expansion. (Costar Industrial Report, 2012).

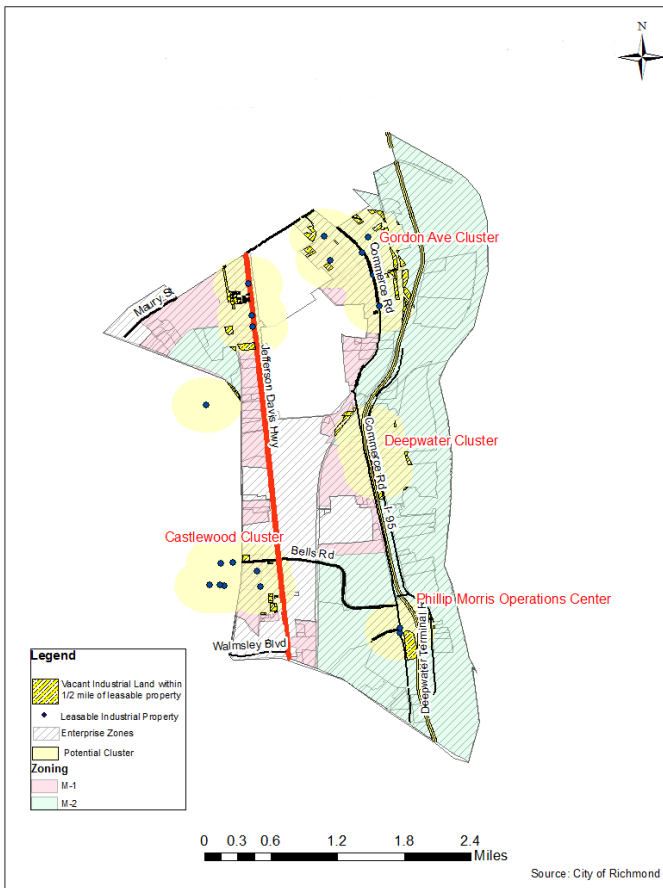
Lease able Properties Analysis

As mentioned above, the Jefferson Davis Corridor contains 22 lease able industrial properties. Map 4.3.1 highlights their locations and names. Spatially, the sites are well dispersed throughout the study area, with a roughly equal amount located in both M-1 and M-2 zoning. Four possible clusters can

be discerned from the map. One centered on Gordon Ave to the northeast, one just to the west on Jefferson Davis Highway made up of the old tobacco industry building stock, one in the central part of the study area centered on Deepwater Terminal Rd., and the largest in the southwest corner of the corridor, centered on the Castlewood Park Properties.

A smaller but no less significant cluster is made up of the large Alleghany Warehouse and the Phillip Morris Operations Center in the southeast corner of the corridor adjacent to interstate 95. The Phillip Morris Operations center is a flex use building that can be adapted for a variety of industrial or office uses and is a featured property of the Greater Richmond Partnership (Greater Richmond Partnership, 2012).

The average lease rate for a square foot of industrial space in the corridor was calculated by summing the estimated lease rates and dividing by the total number of properties with lease rates, 18 (NA excluded).



Map 4.3.1: Zoning and Leaseable Properties
Source: Virginia Economic Development Partnership

$$\begin{aligned} & \text{(Sum of estimated lease rates) } 46.3 / \\ & \text{(Number of estimated lease rates) } 18 \\ & = \\ & 2.67 \end{aligned}$$

Thus, the average lease rate per year for a square foot of industrial space in the study area was determined to be \$2.67. This rate was then multiplied by the total amount of leasable industrial square feet, which was calculated by summing the last column in Table 1.

$$\begin{aligned} & \text{(Average Lease Rate of Study Area) } 2.67 \times \\ & \text{(Total leasable square feet of study area) } 3,635,517 \\ & = \\ & 9,689,663 \end{aligned}$$

Therefore, the estimated total cost of leasing the available industrial space in the Jefferson Davis Corridor is \$9,689,663. Compared to the City of Richmond average, this is a favorable rate. The CoStar Industrial Market Report for 2011 estimated the average quoted asking rental rate for available industrial space in the city was \$3.86 per square foot per year at the end of the final quarter in 2011 (Costar Industrial Report, 2012). Therefore, the study area average lease rate is only 69.1% of the city’s average. Using the following equation:

$$\begin{aligned} & \text{(Average Lease Rate of City of Richmond) } 3.86 \times \\ & \text{(Total leasable square feet of study area) } 3,635,517 \\ & = \\ & 14,033,096 \end{aligned}$$

The estimated cost for leasing the same amount of industrial square footage in the city as a whole would be \$14,033,096. This indicates that industrial land can be leased in the Jefferson Davis Corridor at a well below market rate. The total savings for leasing every square foot of industrial space in the study area as opposed to the city is \$4,343,433. The supply of industrial space is not only abundant, but also affordable. Table 4.3.1 outlines this.

TABLE 4.3.1: COMPARATIVE LEASE RATES

Location	Available Square Feet	Lease Rate (dollars/sq ft/per year)	Total Cost
City of Richmond	3,635,517*	3.86	\$14,033,096
Jeff Davis Corridor	3,635,517	2.67	\$9,689,663

*Available square footage of the Jefferson Davis Corridor used for sake of comparison

Industrial Demand and Supply

The Greater Richmond Partnership collects requests for industrial space that companies make when deciding whether or not to locate to the Richmond area. Companies request site factors such as available square footage, ceiling height, transportation infrastructure, door size, tenancy status, zoning, and desired use. A comparison was made between the industrial requests for the City of Richmond for the years 2010 and 2011, and the characteristics of the available leasable properties. A calculation of total requests summarized the demand for industrial space in Richmond. Also, this method effectively determined the supply of industrial space in the study area by similarly calculating aggregate building properties. Once the supply and demand data was determined, they were compared for an industrial market analysis of the corridor.

Industrial Demand

Industrial demand was calculated by separating the 159 requests for industrial space from the other requests the Greater Richmond Partnership collects. All numbers seen below are based on a total of 159. The type of request is separated in quantitative requests based on predefined categories and qualitative requests based on categories grouped by similarities. The quantitative demand for industrial space is highlighted in Table 4.3.2.

Zoning requests were almost evenly split between light (M-1) and heavy (M-2) zoning with 43 and 54 requests respectively. Leasing was the preferred method of occupancy by a significant margin, with 55 requests for leasing versus only 36 for owning. The averages for both minimum square footage requests and maximum square footage requests are dramatically lower than the medians for the same, indicating that a few outliers on the lower end of the spectrum skew the average to a lower amount. The median numbers more accurately reflect desired industrial space, and put the demand for sites in the 250,000 to 300,000 sq ft range at a premium.

Figure 4.3.1 above depicts the desired use requests by percentage. These percentages are determined as percentage of total use requests rather than requests as a whole. A majority of requests, at 51%, are for manufacturing use. Distribution, warehouse, assembly, and office round out the

other 49% of requests fairly evenly. Finally, prospect status indicates that thus far the City of Richmond is meeting the demand needs of industry, as 27 have located in the area in the past two years and 85 are actively processing relocation to the city.

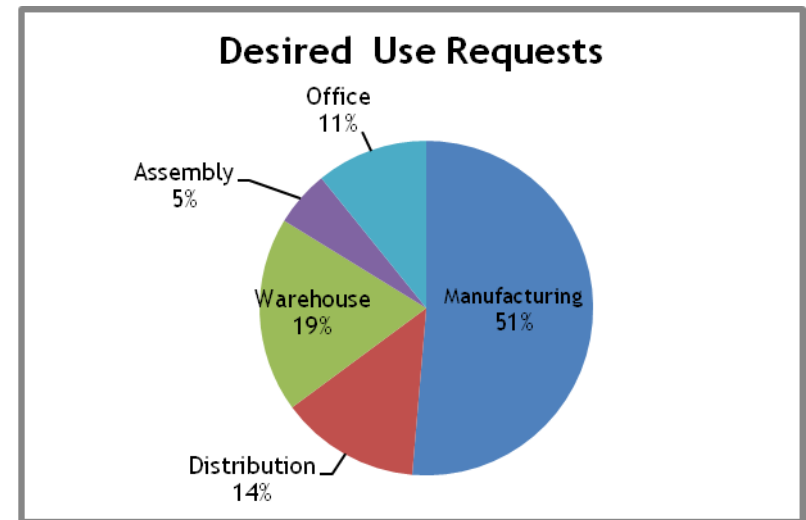


Figure 4.3.1: Desired Use Requests

In addition to specific requests based on the predefined categories outlined above, companies seeking to relocate often make requests more specific to their particular operation that were grouped in categories of similarity. Table 4.3.3 demonstrates the amount of such requests from the Greater Richmond Partnership's records. Numbers were determined based on the number of times specific words or numbers showed up in the notes of requests. It should be noted that 68 companies did not make such requests at all.

Ceiling height requests peaked in the 20-29 ft range. While a couple of requests indicated a desire for modern building, the majority of requests indicated a desire for a building constructed of masonry.

TABLE 4.3.2: INDUSTRIAL DEMAND (QUANTITATIVE)	
Factor	Number
Zoning	
M-1	43
M-2	54
Desired occupancy	
Own	36
Lease	55
Own or Lease	28
Building Size (sq ft)	
<i>Minimum</i>	
Avg	79,073
Median	275,000
<i>Maximum</i>	
Avg	107,944
Median	280,000
Desired Use	
Manufacturing	19
Distribution	5
Warehouse	7
Assembly	2
Office	4
Prospect Status#	

Active	85
Inactive	25
Closed	17
Located	27
Source: Greater Richmond Partnership	
TABLE 4.3.3: INDUSTRIAL DEMAND (QUALITATIVE)	
Request	Number
Ceiling Height (ft)	
Ten-Nineteen	9
Twenty-Twenty Nine	13
Thirty-Thirty Nine	4
Facility	
Modern	2
Masonry	6
Entryways	
Bay Door	4
Loading Docks	13
Drive In	7
Highway Access	8
Cranes	10
Office Space	10
Source: Greater Richmond Partnership	

Loading docks were a key concern of companies considering relocation to Richmond in 2010 and 2011, as that specific request showed up a total of 13 times in the notes. Highway access was another significant request, as eight companies

indicated that easy access to a major highway was a factor in their relocation.

Tenancy is not a big concern of companies as only six, with two desiring multi-tenant and one desiring single-tenant, indicating that as important in their decision making. As noted above, only 11 percent, or a total of four companies, requested office space as a primary use. However, 10 companies requested the availability of office space in addition to other uses. Figure 4.3.2 outlines other requests made by interested companies.

In terms of other requests, companies are most concerned with the ability to expand (20%), the availability of office space (20%), cranes (20%), and transportation infrastructure (30% combining a connection to airport, proximity to the Port of Virginia, highway access, and parking).

Industrial Supply

Industrial supply was calculated by analyzing and compiling the building and site specifics of all the properties available for lease.

The Jefferson Davis Corridor, as a historical industrial area past its economic prime, has many older buildings. Eighteen of the available 22 properties were constructed prior to 1979. Thus, it is no surprise that 17 of the buildings are made out of

masonry, a more traditional building material. There are a wide variety of site sizes, with a maximum lot of 186 acres and a minimum lot of one acre. Overall the lots average 19 acres and add up to a total of 421 acres. This gives the corridor flexibility in the kinds of business it tries to recruit.

The ceiling heights of the available properties peak in the 20-29 feet range. There are only a couple of buildings with ceiling heights greater than thirty, limiting the corridor's ability to attract businesses that might require extremely tall machinery for operation. Tenancy status is varied in the study area, with 13 sites providing multi tenant leasing (multiple business per site) and nine sites providing leasing to only single tenants.

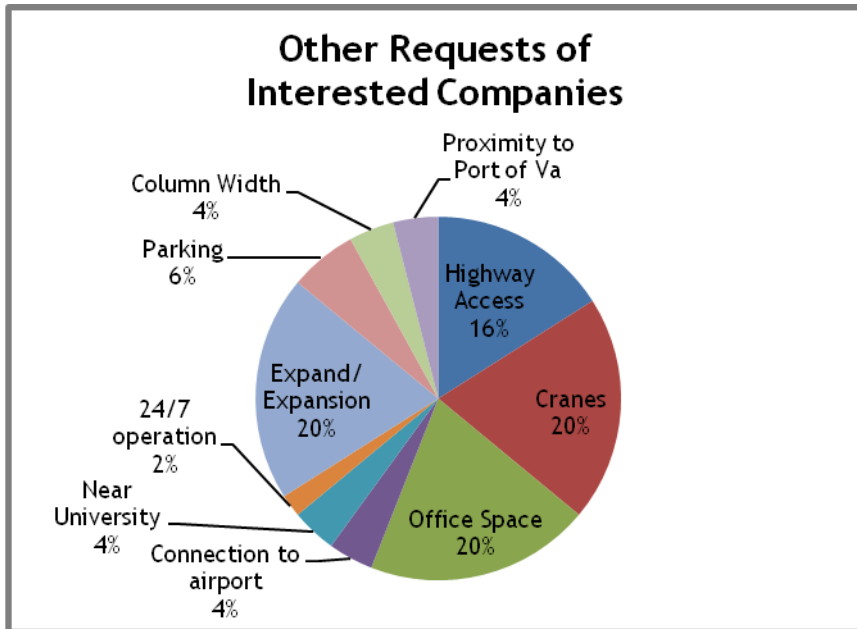


Figure 4.3.2

Source: Greater Richmond Partnership

Finally, the corridor is ideally located to transportation networks and hubs. Figure 4.3.3 highlights the maximum, minimum, and average distances of lease able properties from Interstate 95, the Port of Richmond, and the Richmond Airport.

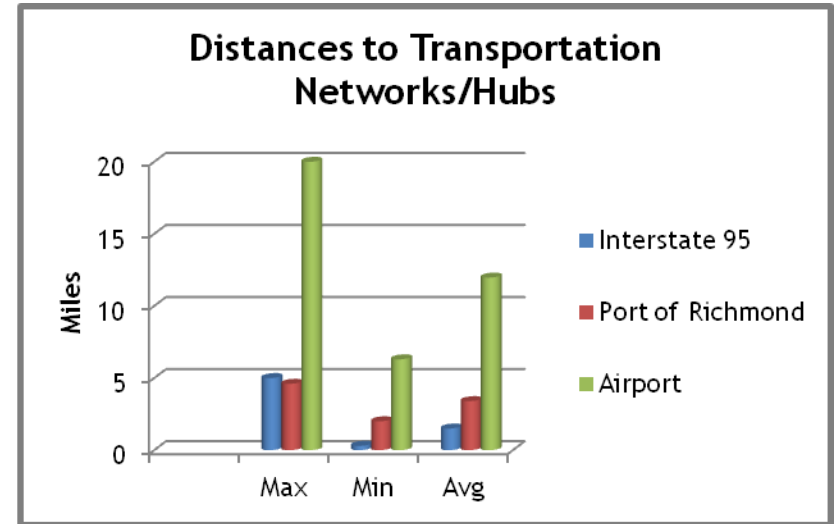


Figure 4.3.3: Transportation Distances

The study area has excellent access to both Interstate 95 and the Port of Richmond, with no lease able property laying more than 5 or 4 miles from each respectively. The corridor is not well connected to the Richmond Airport, as the minimum, maximum, and average distances of lease able properties are further away from the airport than Interstate 95 or The Port of Richmond by a large degree.

Comparison of Industrial Demand and Supply

The supply of industrial space in the Jefferson Davis Corridor corresponds with demands in many significant ways, thus providing targeted selling points for interested companies. The industrial legacy of the corridor helps easily incorporate future industrial land use into its current makeup. Zoning requests and zoning availability differ from each other (see Figure

4.3.4). The eastern stretch of the corridor clusters is primarily zoned M-2. The western half of the corridor, containing the possible Tobacco Building cluster and Castlewood Park clusters is primarily zoned M-1.

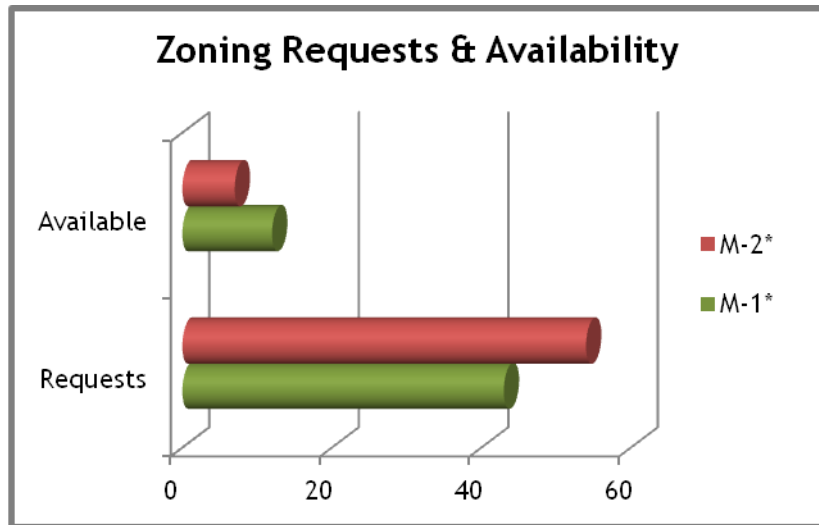


Figure 4.3.4 Zoning Requests and Availability
Source: Greater Richmond Partnership

In 2010 and 2011, more requests came in to The Greater Richmond Partnership for heavy industrial (M-2) use than for light industrial (M-1) use. The current zoning of the study area favors M-1 zoning. Perhaps a rezoning in favor of more heavy industry is necessary.

Figure 4.3.5 compares requests for leasing or owning to the availability of properties to lease or purchase in the study area. According to the Virginia Economic Development

Partnership, 7 properties in the corridor are available solely for lease while 15 are available to buy or lease (Virginia Economic Development Partnership, 2012). Therefore, the supply of industrial occupancy status is very flexible in the study area, thus facilitating development.

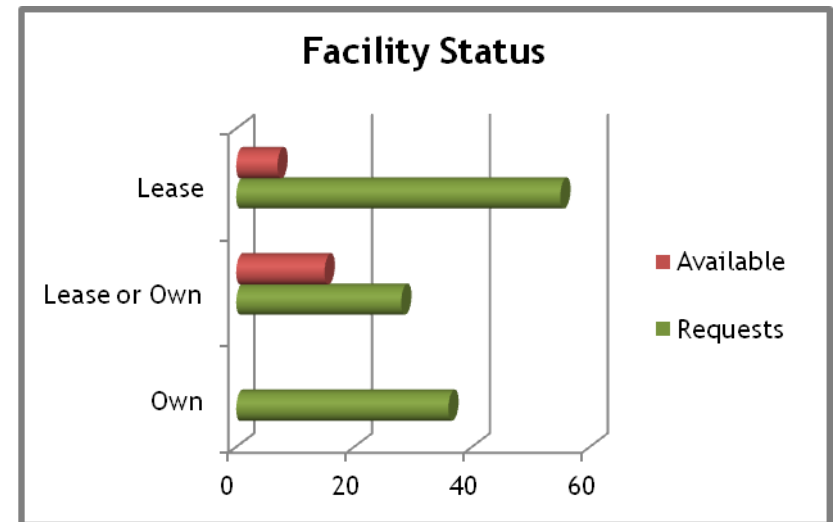
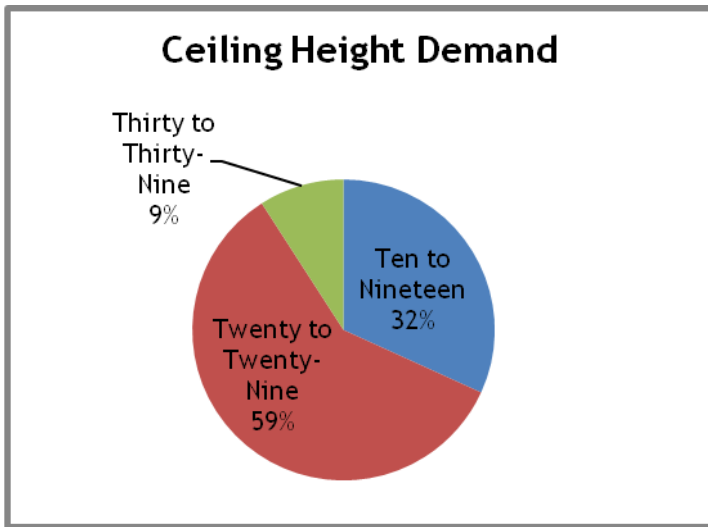


Figure 4.3.5 Comparison of lease availability and request
Source: Greater Richmond Partnership



4.3.6: Demand for Ceiling Heights
Source: Greater Richmond Partnership

The Jefferson Davis Corridor is very compatible with industrial ceiling height requests. Figure 4.3.6 compares the supply and demand of ceiling heights in the study area. The study area has the physical supply of buildings that potential companies are looking for. However, if M-2 zoning is to be increased as mentioned above, some more structures in the 30-39 ceiling height range may be required, as heavy industry requires larger equipment. Another factor that confirms that the study area’s building stock is marketable is the comparison of construction type supply and demand. Not many prospective companies made specific requests about the type of building construction they were looking for, but out of the 8 who did, 6 of them requested buildings of masonry construction. Masonry

construction is prevalent in the Jefferson Davis Corridor, with 17 of the 22 properties for lease of masonry construction.

While the availability of moderately sized industrial buildings in the 100,000-200,000 sq. ft. range is adequate in the corridor, it does not have the large sites that many potential companies are looking for. Figure 4.3.7 summarizes average and median building size in the study area and compares that to the average and median minimum building size requests to the Greater Richmond Partnership. It is evident that the corridor does not have the stock of large 250,000 sq. ft. plus buildings that may attract some heavier scale manufacturing.

In summation, the Jefferson Davis Corridor has many aspects in favor of industrial recruitment and a few opposed. Its building stock, while aged, is of the size and construction that appeals to manufacturing interests. Also, the potential occupancy and tenancy status of available properties aligns well with the requests of industrial companies. Another important factor favoring the study area is its proximity to well integrated transportation networks. The only one that is lacking is an easy connection to the Richmond Airport.

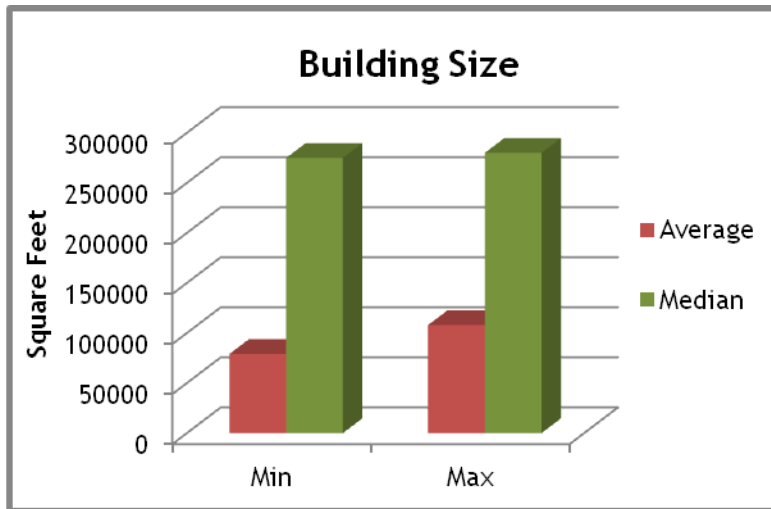


Figure 4.3.7: Building Square Footage
Source: Greater Richmond Partnership

Perhaps the greatest thing the corridor has going for it is its low industrial lease rate of \$2.67 per square foot per year, compared to \$3.86 for the city as a whole. This property can be developed at a bargain, especially when you incorporate the benefits of developing in an Enterprise Zone, within which every lease able building in the corridor lies. These benefits provide up to \$100,000 in tax relief for qualifying real property investments less than \$5 million and \$200,000 for qualifying real property investments greater than \$5 million (State of Virginia, 2012)

Industrial Cluster Analysis

An industrial cluster is a geographic concentration of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field within a particular region (Porter, 1998). Several target sectors stand out as industrial clusters in Greater Richmond. In the Jefferson Davis Corridor, however, Supply-Chain management and Advanced Manufacturing seem to be most prepared for success (Market Street, 2012).

Supply-Chain Management -Justifications: Convergence of four interstate highways (I-64, 95, 85, and 295)

- Presence of over 100 motor freight companies and brokers
- Presence of UPS Freight and FedEx
- Presence of two Class I rail lines: CSX and Norfolk Southern
- Growing service of Richmond International Airport and close proximity of Washington Dulles International Airport
- Port of Richmond
- Established manufacturing base
- Close proximity to East Coast and other national markets

Challenges:

- Rising price of oil
- Congested interstates around Richmond, northern Virginia, and Hampton Roads
- Uncertainty around the outcome of high-speed rail plans
- Lack of supply chain-specific degree offerings and attainment within the region
- Cost implications of impending safety regulation legislation from the U.S.
- Department of Homeland Security
- Relocation of key companies, including CSX headquarters, Independent
- One of highest warehouse vacancy rates of mid-sized metro areas
- Aging workforce

Opportunities:

- The location of a stop on the planned Southeast Corridor for future high-speed rail
- Enhanced linkages between the Port of Richmond and Port of Virginia under the management of the Virginia Ports Authority
- Expansion of VCU's current supply chain and transportation planning offerings
- Using existing employers to optimize logistics

processes and identify markets for product import and export

- Leveraging local research capacity in virtual reality technologies and systems engineering for logistics purposes
- Fort Lee's highly-skilled military logistics professionals entering the civilian workforce
- Development of the Virginia Logistics Research Center

Advanced Manufacturing is important to the region, especially with its connection with Supply Chain Management allowing the region to create and move products quickly. Furthermore, skilled workers graduate each year from several local institutions with degrees to support a growing manufacturing sector. These skilled workers give the region a competitive advantage.

Energy Manufacturing has enormous potential in the region. Alternative energy production, transmission, consumption and its associated industries could see growth in the region. The connection between energy production and product manufacturing will be critical to successful manufacturing clusters in the region.

Justifications:

- Expertise in materials and aerospace

- Young research and development workforce
- Strong transportation access
- State Incentive Programs
- Strong engineering program at VCU and training programs at local community colleges
- National priority in advancing alternative energy
- Low operating costs

Challenges:

- Difficult approval processes, high operating costs and uncertain U.S. energy policy.
- An aging workforce and a lack of students in apprenticeship programs
- Slow hiring
- Higher business costs than other parts of Virginia

Opportunities:

- Potential of smart grid technology
- The Dominion Resources GreenTech Incubator, the Commonwealth Center for Advanced Manufacturing and the BizWorks Enterprise Center
- Additional marketing on regional and state industrial development incentives and business-friendly policies
- Additional suppliers with the opening of the Rolls-Royce aircraft engine components plant and an additional plant that will produce military aircraft components

SECTION 4.4

GREEN & OPEN SPACE

Open Spaces and Market Potential

The value of open spaces to a community is well known. Open spaces, or green spaces, provide citizens with opportunities to engage in outdoor recreation, allow the natural environment to operate without human interference, and offer urbanized areas holistic methods for air, water, and soil purification. Open spaces, through a variety of mechanisms, are integral components in maintaining the environmental health of urban, and rural, communities. Though the environmental and general public health benefits of open spaces have garnered significant attention in an era where the concept of sustainability is quickly gaining momentum, it is difficult to quantify the monetary impacts of open space preservation. In conducting an open space market analysis for the Jefferson Davis Highway Corridor Land Use Optimization Plan, two primary elements were analyzed to determine the extent to which open spaces currently serve the study area, and what the market potential for open spaces in the study area might be.

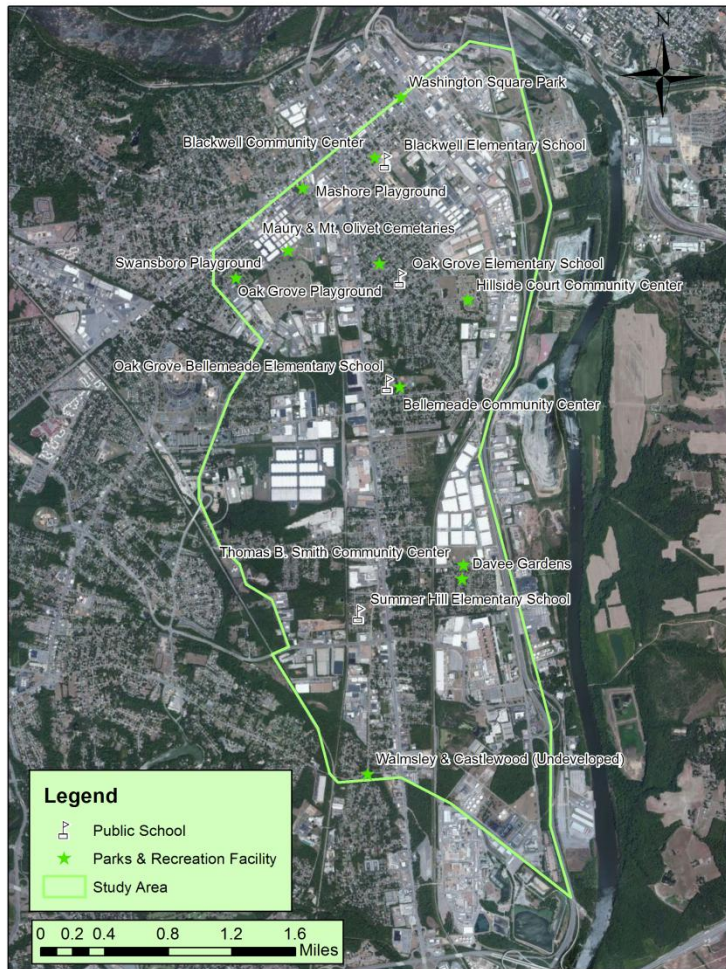
First, a comparative analysis was made between the open space and facility standards prescribed in the City of Richmond

Parks, Recreation and Community Facilities Master Plan and the current availability of open spaces and recreation facilities in the study area. Additionally, a literature review was conducted to evaluate the market potential of open spaces, leading to a determination of the economic value of open spaces to a community. The primary document utilized in estimating the economic impact of open spaces is *The Value of Open Space: Evidence from Studies of Nonmarket Benefits*, a 2005 article published by Resources For The Future, an independent non-profit organization. By conducting an open space market analysis for the study area, the potential for real land value increases is evaluated in conjunction with the current service levels of open spaces and recreational facilities in the study area.

Open Space Inventory Analysis

The study area includes a variety of open spaces as identified by the City of Richmond Parks and Recreation Department, ranging from multipurpose community centers to a single pocket park. The spatial distribution of open spaces is most concentrated in the northern quadrant of the study area, while the southern portion boasts considerably less open space and recreation facilities. The distribution of open spaces and recreation facilities was also analyzed alongside the locations of public schools in the study area, where three elementary schools currently operate (Map 4.4.1). As previously described in the existing conditions report, there is the potential to

increase the utility of open spaces in the study area when analyzed alongside public schools.



Map 4.4.1: Public Schools and Park Facilities in the Study Area
Source: City of Richmond

Appendix D-6 contains maps showing the service areas of the community centers and parks within the study area. As stated previously in this report, although the technical ranges of these service areas may appear to give adequate coverage of park space for the study area, parks are often inaccessible by residents that live more than a mile away, leaving much of the corridor without adequate green space. Table 4.4.1 shows open space deficits in the Jefferson Davis Highway study area, based on standards established in the *City of Richmond Parks, Recreation and Community Facilities Master Plan*. There is only one pocket/mini park in the study area, Davee Gardens, creating a total of 1.5 acres of pocket park space in the study area, leaving a deficit of 1.25 acres (Map D-6.1, where playgrounds are shown alongside Davee Gardens, each with a ¼ mile buffer). There is also only one neighborhood park, Washington Square, creating a total of two acres of neighborhood park space, leaving a large deficit of 53.08 acres for the study area (Map D-6.2, shown with a ½ mile buffer). There are several special use areas in the study area: Blackwell, Mashore Playground, Oak Grove, Hillside Court, Bellemeade, and Thomas B. Smith. Combined, these create a total of 53.9 acres of special use area in the study area, leaving no deficit (Maps D-6.3, where only community centers are shown with a two mile buffer). There are no open space acreage areas, community parks, regional parks, or linear parks in the study area, leaving great deficits. However, parts of the study area are within service areas of these types of parks that are located outside of the study area, as shown in

TABLE 4.4.1: CITY OF RICHMOND AND STUDY AREA OPEN SPACE AND FACILITY STANDARDS

Facility	Recommended Standard Per 1,000 (Acres)	Current City Service Level Per 1,000 Residents (2007)	City Deficit (Acres)	Study Area Service Level Per 1,000 Residents (Acres, 2008)	Study Area Deficit (Acres)
Pocket Parks	0.1	0.06	7	0.05	1.25
Neighborhood Parks	2	0.4	148	0.07	53.08
Open Space Acreage	1	1	1	0	27.5
Community Parks	3	1.5	76	0	82.5
Regional Parks	3	6.52	0	0	82.5
Linear Parks	2	0.1	37	0	55
Special Use Areas	1	4.3	0	1.96	0

Source: City of Richmond Parks, Recreation and Community Facilities Master Plan (2007) and Parks Inventory (2008)

the Existing Conditions portion of this section. Therefore, for a study area of this small size, the focus for park development should be on pocket parks, neighborhood parks, and special use areas.

Table 4.4.2 shows an inventory of park facilities in the study area, and deficits based on standards established in the *City of Richmond Parks, Recreation and Community Facilities Master Plan*. The study area contains four tennis courts, four outdoor basketball courts, ten playgrounds, one picnic pavilion, and two outdoor pools. Based on the recommended standards for these facilities, these amounts create deficits for all of these

facilities except for outdoor pools. Additionally, there are 2,234,628 square feet of space among the four community centers in the area, providing a good amount of facility space for the study area population.

TABLE 4.4.2: STUDY AREA PARK FACILITIES INVENTORY (2007)

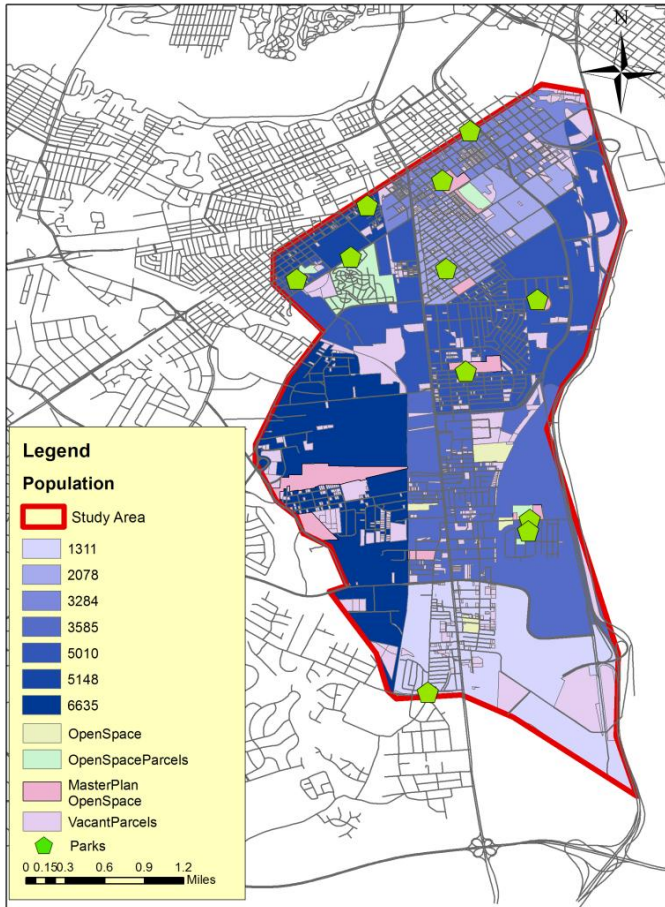
Facility	Recommended Standard	Study Area Inventory	Study Area Service Level	Study Area Deficit
Tennis Courts	1 court per 1,000	4	0.15	23
Outdoor Basketball Courts	1 court per 2,500	4	0.36	7
Playgrounds	1 site per 2,000	10	0.73	4
Picnic Pavilions	1 site per 7,500	1	0.28	3
Outdoor Pools	1 pool per 20,000	2	1.48	0
Community Centers	2 sq. ft. per person	2234628	41.3	0
Source: City of Richmond Parks, Recreation and Community Facilities Master Plan (2007)				

Based on the community needs assessment described in the Appendix D-2, the top five priorities for park and open space development for the Richmond community are as follows:

1. Walking and biking trails;
2. Small neighborhood parks;
3. Indoor fitness and exercise facilities;
4. Natural areas, wildlife habitats, and nature trails; and
5. Indoor swimming pools and leisure pools

These priorities should be taken into account when considering which park and facility deficits need the most attention in this plan.

Map 4.4.2 and the maps contained in Appendix D-7 show no obvious relationship between existing park locations and specific groups who would enjoy the greatest benefits from green and open space, such as children under 18 and elderly groups. Most parks are located in the northern portion of the study area, but green and open space is actually in higher demand in the western part of the study area.



Map 4.4.2: Park Location and Density of Total Population
Source: City of Richmond

There is also no evidence showing that the parks are located with relation to population or income. However, it explicitly shows in the map that there should definitely be more parks in the western part of the study area.

Appendix D-8 is a literature review of *Valuing Central Park's Contributions to New York City's Economy*, in which author Hugh O'Neill highlights mechanisms in which Central Park has helped to shape the economy and lifestyle of New York City. Certainly, it is a stretch to compare Central Park to anything that exists in Richmond, let alone within the study area. However, the positive impact of Central Park on New York City indicates how green spaces can shape the economy of a community. As explained in Appendix D-6, parks can generate economic opportunities for surrounding businesses by attracting customers, serve as core resources for local communities, and enhance surrounding property values. Accordingly, improving and expanding green and open space is vital to the Jefferson Davis Highway Corridor.

SECTION 5

Goals, Objectives, Actions

SECTION 5.1

RESIDENTIAL

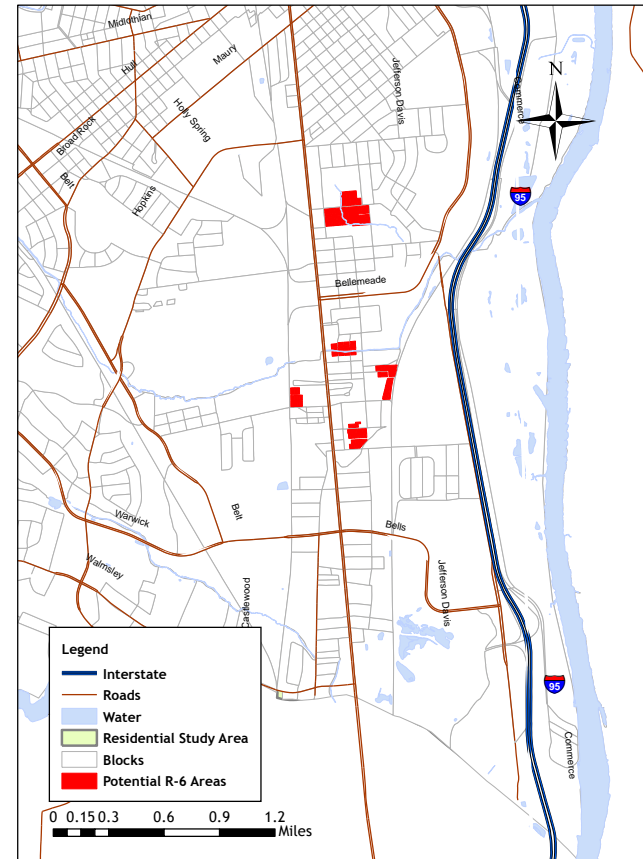
GOAL 1: Diversity of housing types and tenure within the study area.

Objective 1.1: Increase R-6 zoning to support a more diverse housing stock that includes affordable housing, both owner and renter, that is demographically suitable for the area’s current and potential residents.

Action 1: Evaluate and identify potential parcel clusters that are suitable for R-6 zoning (1-3 months).

Map 5.1.1 shows potential R-6 rezoning areas based on the suitability analysis as outlined in Appendix A-9. There are 132 total parcels selected for potential re-zoning, and range from 2,889 square feet to 15,133 square feet. 65 of these total parcels, or 49.2%, are vacant, which could in

turn support approximately 432 additional units at their maximum density. If all parcels were redeveloped at their maximum capacity under R-6 zoning, approximately 775 units could be built.



Map 5.1.1: Proposed R-6 Zoning Areas
Source: City of Richmond, Real Estate Assessor

Action 2: Provide a public forum for the residents and owners of property within the study area to discuss rezoning through public meetings, social media, telephone, mail campaign (3-6 months).

Action 3: Formal process of rezoning via Planning Commission and City Council approval (9-12 months).

Objective 1.2: Designate current R-53 zoned area as a Housing Opportunity Area to ensure compatible and diversified housing opportunities adjacent to the existing commercial activity node at Bellemeade Road and Jefferson Davis Highway.

Action 1: Evaluate and identify potential parcels that are suitable for inclusion in a Housing Opportunity Area (1-3 months).

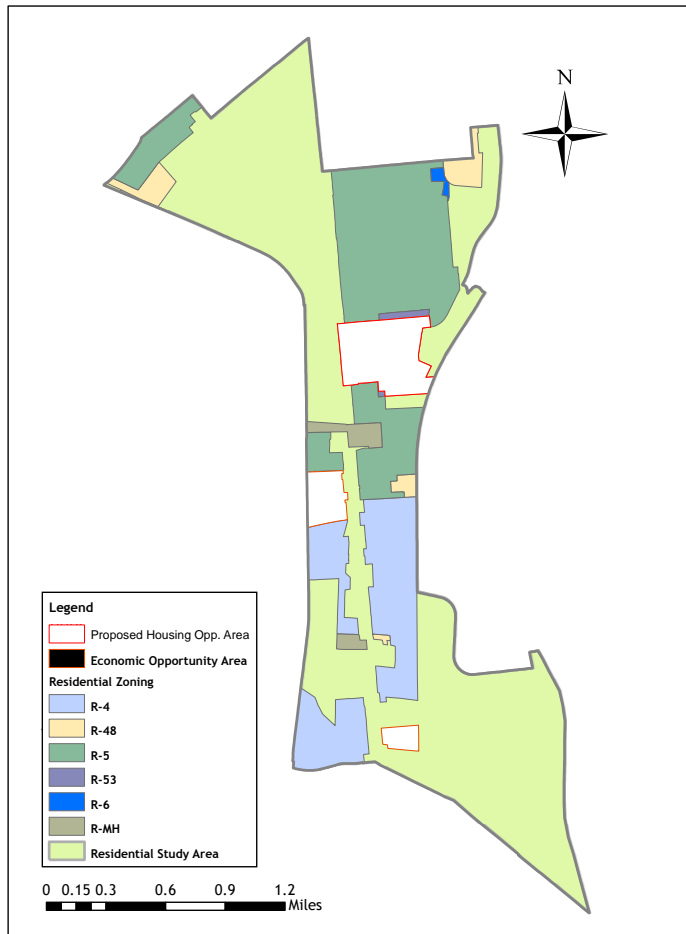
According to the City of Richmond Master Plan, a Housing Opportunity Area “is used to implement the strategy of enhancing the City’s housing supply with a variety of housing types and densities by establishing areas appropriate for greater flexibility in housing types and densities. Greater flexibility for residential development at these locations is considered essential to encourage their productive use, to overcome environmental or other site constraints, and to encourage development of a type and quality desirable for City neighborhoods.” A Housing Opportunity Area allows for potential new residential

development at higher densities and with a greater variety of housing types (See City of Richmond Master Plan).

Map 5.1.2 shows those areas that the City has determined as Economic Opportunity Areas within the study area. According to the City of Richmond Master Plan, an Economic Opportunity Area “is used to identify areas appropriate for a variety of commercial, industrial, or mixed uses that have the potential to generate substantial economic return for the City.” Although an Economic Opportunity Area is a useful tool in most areas and even that area abutting the Jefferson Davis Highway, the Economic Opportunity Area within the study area containing the R-53 zoning is not protective enough. Those properties zoned R-53 located within the Economic Opportunity Area should be re-designated as a Housing Opportunity Area, as reflected in the Map 5.1.2. These properties are the only ones with the R-53 zoning in the study area and allow for more dense development. As a result, the R-53 zone should be maintained as such and given the designation as a Housing Opportunity Area to ensure this protection.

Action 2: Provide public forum for the residents within the study area and potential developers to discuss a Housing Opportunity Area designation (3-6 months).

Action 3: Formal process of designation via Planning Commission and City Council approval (9-12 months).



Map 5.1.2: Economic Opportunity Areas & Proposed Housing Opportunity Area
Source: City of Richmond

Objective 1.3: Increase the impact of the Neighborhood in Blooms program in the Bellemeade neighborhood; and, increase participation by residents, community organizations and private investors.

Action 1: Provide public forum for residents included in Bellemeade neighborhood in order to better facilitate discussion and eventual understanding and participation in the Neighborhood in Blooms program (1-3 months).

Action 2: Invoke private investors to support the Neighborhood in Bloom program for the Bellemeade neighborhood to strengthen the community, increase homeownership, promote attractive affordable housing, and reduce blight (3-9 months).

Action 3: Implement a program throughout the neighborhood that buys vacant lots, builds houses, and sells them for homeownership (9-12 months/ongoing).

GOAL 2: Quality housing stock throughout the study area.

Objective 2.1: Improve and/or redevelop blighted areas throughout the study area.

Action 1: Identify housing clusters and/or neighborhoods with the most extreme blight or in danger of becoming highly blighted (1-3 months).

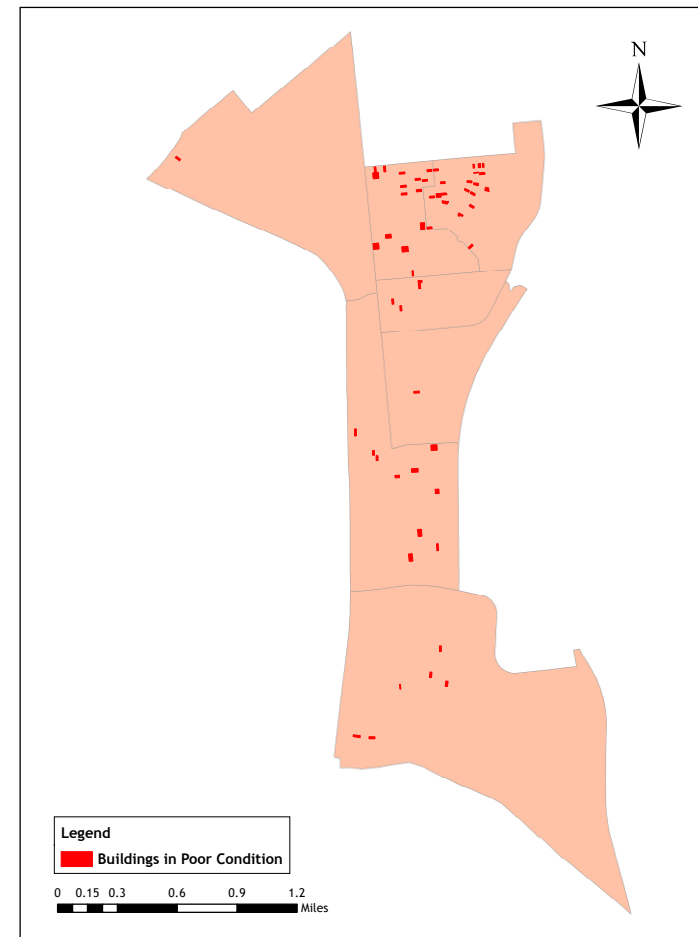
There are a total of 67 buildings in poor to very poor condition in the study area. Map 5.1.3 shows that these buildings are spread throughout the study area; therefore, it would be difficult to pinpoint one specific area for redevelopment. However, there is a slight concentration within the northern portion of the study area - which is mostly zoned R-5. Most of the buildings are wood framed showing that the test of time has taken its toll on the structures. The gradual razing of poor structures for the construction of new residential buildings would be the best path forward.

Action 2: Utilize building enforcement tools to raze those structures beyond repair and encourage improvement of others (12 -18 months/ongoing).

Action 3: Streamline delinquent tax sale process to actively pursue those property owners delinquent in real estate taxes and recapture property for resale or retain for future City targeted development (12-18 months/ongoing).

Objective 2.2: Provide financial and technical assistance for rehabilitation efforts in designated blighted areas.

Action 1: Create initiatives to get residents involved in understanding new housing opportunities throughout the study area (3-6 months/ongoing).



Map 5.1.3: Buildings in Poor Condition
Source: City of Richmond

Action 2: Promote existing programs such as short term, low interest loan programs, tax abatement or grants through marketing campaigns and public forums (6-9 months/ongoing).

Action 3: Involve the local non-profit organizations, public and private sectors to support and eventually implement a cooperative program throughout the study area that buys vacant lots, builds houses, and sells them for homeownership (6-9 months/ongoing).

SECTION 5.2

COMMERCIAL

GOAL 1: Leverage advantages of the Jefferson Davis corridor to advance desirable commercial development.

Objective 1.1: Commercial development should take maximum advantage of busier, more accessible northern and southern portions of the corridor.

Action 1: Develop and implement a business recruitment and corridor marketing campaign aimed at stimulating retail activity. (6-18 months)

Action 2: Work with City of Richmond Department of Economic and Community Development to evaluate the establishment of Commercial Area Revitalization Effort (CARE) designation for northern portion of Corridor. (9-15 months)

Action 3: Evaluate implementation of Urban Business zoning classification to connect with existing UB zoning on Hull Street. (6-12 months)

Objective 1.2: Seek large-scale uses that best capitalize on the corridor's affordability by identifying businesses that require large amounts of space.

Action 1: Conduct retail market analysis of study area. (1-3 months)

Action 2: Develop land-banking program by working through the Real Estate Assessor's Office, and with City Planning staff to continually search for underutilized property in the Jefferson Davis corridor for the purposes of acquiring and improving contiguous land parcels. These parcels could then be used to assemble attractive commercial sites. (12 months - ongoing)

Action 3: Utilize suitability analysis to identify commercial parcels that meet the criteria of space and affordability for site selection. (1-3 months)

GOAL 2: Focus commercial development on competitive retail niches.

Objective 2.1: Identify, through this plan's market analysis and other means, retail niches with minimal "big-box" competition.

Action 1: Conduct retail market analysis of study area. (1-3 months)

Action 2: Utilize suitability analysis for site selection. (1-3 Months)

Action 3: Develop shop-steading program through which the City acquires and sells/leases vacant/abandoned space for less than market value to business people willing to renovate and operate the property. (12 months - ongoing)

Objective 2.2: Use demographic characteristics of the study area to the corridor's advantage.

Action 1: Develop Minority Equity Participation Program to increase business participation of minorities and women. (6-18 months)

Action 2: Coordinate with the City of Richmond Hispanic Liaison Office to identify uses desired and needed by Hispanic community. (3-6 months).

GOAL 3: Place an emphasis on development around existing nodes of commercial activity, and on sites of distinction.

Objective 3.1: Promote development around "homegrown" retail anchors to take advantage of current high-traffic sites.

Action 1: Develop shopsteading program through which the City acquires and sells/leases vacant/abandoned space for less than market value to business people willing to renovate and operate the property (12 Months - Ongoing)

Action 2: Evaluate implementation of Urban Business zoning classification (6-12 Months)

Objective 3.2: Promote adaptive reuse of Model Tobacco building.

Primary Action: Consider and evaluate options for the use of the Model Tobacco building as a distinctive, accessible site for public offices. (12 months - Ongoing)

Alternative Action: Work with current owner to facilitate planned mixed-used development. (12 - 36 months)

SECTION 5.3

INDUSTRIAL

Industrial growth in the Jefferson Davis Corridor is readily achievable. The manufacturing footprint in the study area is well established and can be enhanced with a few concentrated planning policy applications. The existing conditions and market analysis indicate an area primed with industrial history, land use, and infrastructure. The corridor also lies in excellent location to take advantage of transportation networks. We recommend a two pronged approach to development, one focusing on the workforce and one focusing on the manufacturing employers.

GOAL 1: Create a Workforce Development Program

Our first goal is to create a workforce development program catered to the targeted industries of our market analysis (supply chain management and advanced manufacturing). This program will work to both educate and employ an undereducated and underemployed local labor force and provide an adequate supply of labor to both existing and future employers in the corridor.

Objective 1.1 The first objective to achieving this goal is to establish a technical school network in the corridor. The corridor is currently lacking in sources of technical education.

Action 1: This objective can be accomplished through the application of three action items. First, the city, in partnership with local or state employment agencies should apply for and implement federal workforce training grants such as the “Workforce Innovation Fund”. Once funding has been secured, a technical education center focused on target industry labor needs should be created, ideally located in one of the leasable industrial properties along Jefferson Davis Highway, which will provide it with some visibility. Finally, this objective can be fully implemented by establishing an apprenticeship program with local manufacturers using company representatives in curriculum development and staffing. This will better cater the training to employer needs and cement links between workforce development and economic development.

Objective 1.2 The second objective towards creating a workforce development network that truly benefits the residents of Richmond in general and the Jefferson Davis Corridor in particular is encourage enrollment in the technical education center of Richmond residents.

Action 1: This objective can similarly be accomplished through the application of three action items. First, the technical education center should be heavily marketed in the local area both before and after its creation. Second, to attract working adults and those with families, the technical center should promote and offer enrollment flexibility in regards to courses and scheduling. Finally, to guarantee that the technical center will make a local impact, it should subsidize tuition for Richmond residents.

GOAL 2: Attract Advanced Manufacturing

Objective 2.1

The second industrial goal is to attract advanced manufacturing. While this goal is broad in length and scope, several objectives give the goal structure and detail. In order to attract advanced manufacturing, it is important to increase the attractiveness of land and current vacant industrial properties.

Action 1: First, an increase in building height allowance in current M-2 zoning is critical to attracting large manufacturing.

Action 2: Next, it is important to create incentives both the re-use of current vacant industrial land and

expansion of the current industrial base into adjacent vacant industrial land. Each of these action steps will help to increase industrial infill within the corridor. Industrial density is critical to reap the benefits of the industrial cluster. Furthermore, advanced manufacturing companies increasingly demand high-tech infrastructure. To enhance the current infrastructure, an increase in the availability of broadband access for critical industrial locations must happen early within implementation. In a difficult economic climate, even the smallest improvements must be made if they will attract industrial investment.

Objective 2.2

Action 1: The second objective to attracting advanced manufacturing is increasing the Jefferson Davis Corridor's access to Interstates, the Richmond International Airport and the Port of Richmond. First, a reduction in the Industrial Vehicle Toll Rate for the Pocahontas Parkway would reduce transportation and shipping costs between the Corridor and the Airport for industry. The Pocahontas Parkway is the main artery connection the Airport and the Corridor. With increased tolls, companies will prefer to locate close to the Airport and outside the Corridor. Second, widening the area of Bells Road between the Jefferson Davis Highway and Commerce Road will allow easier access to the Port

of Richmond and I95. With increased access to the Port of Richmond and I95, industry transportation costs will again be reduced and access to critical transportation networks will be increased. As transportation costs increase, companies will look to decrease the burden of shipping products. In the long-term, an action step should be to improve the Walmsley Blvd. connection to the Jefferson Davis Highway. This improvement would decrease congestion and enhance the connection between Western Greater Richmond and the Corridor.

SECTION 5.4

GREEN & OPEN SPACE

The following goals apply to green and open space along the Jefferson Davis Highway Corridor:

- Improve quality and increase amount of green and open space.
- Improve quality of existing park facilities and increase amount of facilities.
- Develop community outreach to enhance utility of open space and park facilities.

The sections below discuss various objectives and associated actions for each of these goals.

GOAL 1: Improve quality and increase amount of green and open space.

Objective 1.1

One objective for this goal is to *foster a relationship between community groups and City government to ensure that existing open spaces are adequately maintained at National Recreation and Park Association (NRPA) Level 2 Care, as outlined in the Parks, Recreation and Community Facilities Master Plan for the City.* The City of Auburn, Indiana,

published a guide to these standards, outlined in Appendix D-9. This guide to the NRPA standards that the City of Richmond wishes to meet could be useful in developing a similar maintenance checklist for its own green and open spaces.

Action 1: In order to accomplish this objective, first an inventory of pocket and neighborhood park space must be taken and conditions of these spaces must be evaluated.

Action 2: Second, improvements must be made to bring these park spaces up to par with the NRPA Level 2 Care maintenance standards.

During the inspection and improvement process, a plan for bi-monthly inspection of these spaces should be created. This plan will designate duties to responsible parties and will entail the creation of a maintenance checklist to ensure that standards are constantly being met.

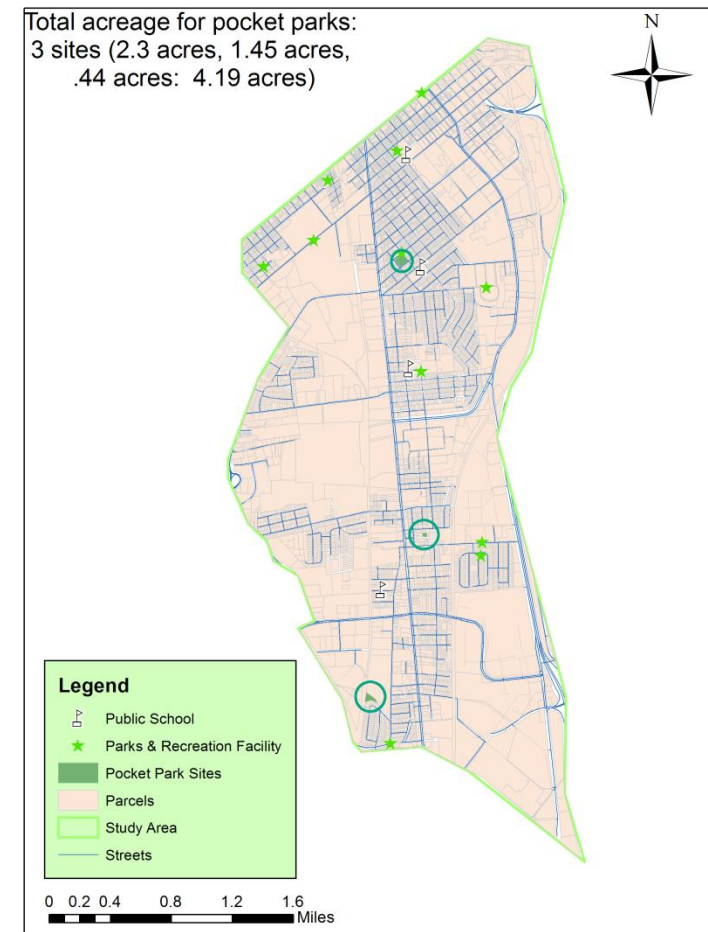
Action 3: Finally, the Department of Parks and Recreation can work with other city agencies and the community to develop a marketing campaign and create and install signage to foster awareness of the maintenance standards for park spaces. Such a campaign would help keep park spaces up to NRPA standards by encouraging residents to alert the Parks Department to any

defects or sub-par conditions in parks, and also discourage litter and vandalism in parks.

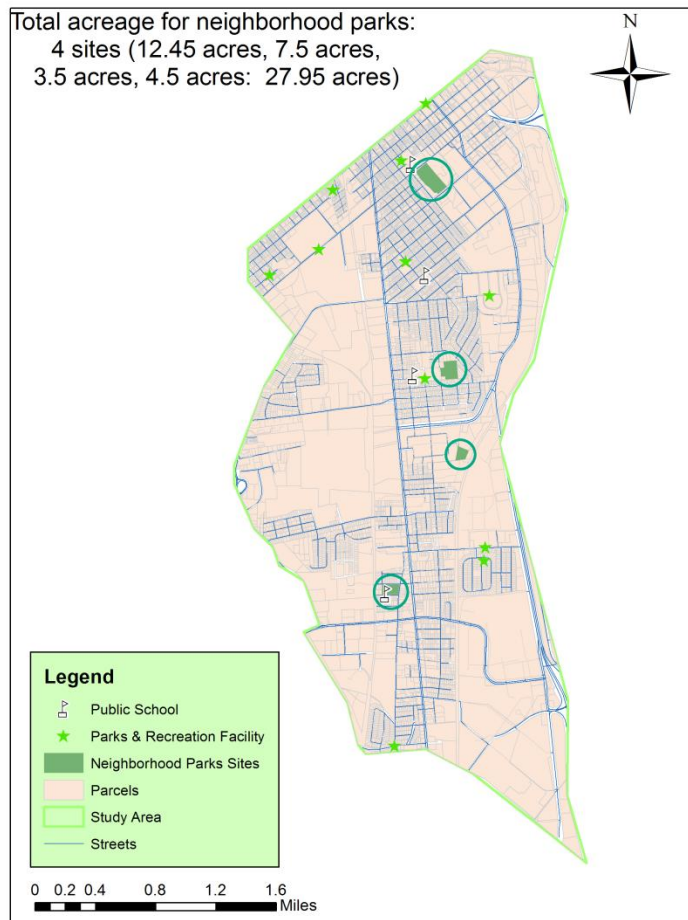
Objective 1.2

Another objective for this goal is to *increase the amount of pocket park space and neighborhood park space to account for deficits in the study area*. As explained in the Market Analysis for green and open space, the study area is currently facing a 1.25 acre deficit for pocket parks and a 53.08 deficit for neighborhood parks, as per City standards for open space. The study area also faces deficits for community parks, regional parks, and linear parks, but for a study area of this small size, the focus for park development should be on smaller spaces.

To alleviate these deficits, three pocket parks, for a total of 4.19 acres of green space, and four neighborhood parks, for a total of 27.95 acres of green space, should be installed. Maps 5.4.1 and 5.4.2 below show the locations of these recommended parks. A site suitability analysis was employed in order to determine the most suitable sites for additional green and open space. Using a weighted classification strategy, where values were assigned to the specified criteria to isolate for those sites most suitable for green and open space expansion in the study area, seven sites in total were selected for new parks.



Map 5.4.1: Location of New Pocket Parks
Source: City of Richmond; VCU Studio 1 Class Spring 2012



Map 5.4.2: Location of New Neighborhood Parks

Source: City of Richmond; VCU Studio 1 Class Spring 2012

The primary criteria enlisted to determine the most suitable sites for additional green spaces accounted for a variety of factors, including demographic characteristics and proximity

to public schools. The following list summarizes the criteria incorporated into the site suitability analysis, and provides a brief explanation of how each criteria helped determine sites for park expansion:

- Proximity to public schools in the study area: sites closer to public schools were preferred in order to complement the second objective of goal three.
- Proximity to existing open space and park facilities: sites further away from established parks and park facilities were desired to increase levels of accessibility.
- Proximity to population base: sites within more densely populated sections of the study area were desired so that future parks and open spaces would have an increased propensity for use.
- Proximity to certain age groups: preference was given to two age groups, those under 18 years of age and older than 65 years of age, as both population groups represent the target demographic for green and open space expansion.
- Land development: sites were divided into two categories for analysis, developed sites (non-vacant) and undeveloped sites (vacant) based on the City of Richmond assessor's data, where desired sites are those considered vacant and undeveloped.
- Land ownership: sites owned by the City of Richmond and associated city departments were preferred over sites that are privately owned.
- Accessibility: sites with road access, or otherwise satisfactory accessibility, carried a higher weight than sites with poor accessibility.

- Intangibles: several intangible criteria were incorporated into the final step of the analysis once the most suitable sites had been determined; intangible criteria included intensity of vegetation, slope and various other geographic characteristics, and total acreage.

Once the site suitability analysis was complete, seven sites were selected as most appropriate for open space expansion. Three sites were chosen for new pocket parks and four sites for new neighborhood parks, respectively. Map 5.4.2 illustrates their locations alongside existing parks and park facilities, as well as public schools. The final list of sites for new parks should be consulted when developing new parks in the study area.

Action 1: Install three pocket parks (4.19 additional acres of green space):

- 22nd & Fairfax (2.3 acres)
- Ernest Road (1.45 acres)
- Springs & Columbia (.44 acres)

Action 2: Install four neighborhood parks (27.95 additional acres of green space)

- Maury & 15th (12.45 acres)
- Mimosa & Overlook (7.5 acres)
- Colby Lane (3.5 acres)
- Castlewood & Lamberts (4.5 acres)

Objective 1.3

The final objective for this goal is to *explore the possibility of installing additional green and open spaces, such as regional parks, linear parks, and greenways, to establish connections with regional green and open spaces.* This would entail coordinating a research team to produce a report assessing the possibility of connecting local green and open spaces with regional spaces, through trails, bike paths, or other linkages. One possible method of completing such a study would be to involve the Master of Urban and Regional Planning program at Virginia Commonwealth University. A student or group of students could complete this study and make recommendations at no cost to the City.

GOAL 2: Improve quality of existing park facilities and increase amount of facilities.

Objective 2.1

The first objective for this goal is to *develop an initiative to clean up and repair existing playgrounds, athletic and other park amenities, and review damaged or inadequate facilities for possible removal.* As explained in the Market Analysis for green and open space, the study area faces the following deficits for park facilities as per City standards: 23 tennis courts, seven outdoor basketball courts, four playgrounds, and

three picnic pavilions. The study area is well-served by the four community centers in the area, but these centers are not kept at a high level of maintenance.

Action 1: The first strategy for this goal is to complete an inventory and evaluation of current conditions of park facilities.

Action 2: After that, necessary repairs to park facilities would have to be made. Additionally, any outdated or irreparable equipment should be removed.

Action 3: During this evaluation and repair phase, a plan should be developed for seasonal inspection and maintenance of park facilities.

Objective 2.2

The second objective for this goal is to *make necessary repairs to buildings and surrounding facilities of community centers*. Four community centers serve the study area: Blackwell, Hillside Court, Bellemeade, and Thomas B. Smith. These community centers are well-located and are widely used by the community, but are facing disrepair.

Action 1: The first step to accomplish this objective is to take an inventory and evaluate conditions of the four community centers within the area.

Action 2: Next, necessary repairs to the buildings and facilities of these community centers should be made.

Action 3: Finally, a plan should be developed for bi-annual inspection of community center conditions and maintenance.

Objective 2.3

The final objective for this goal is to *increase the amount of tennis courts, outdoor basketball courts, playgrounds, and picnic pavilions to account for facility deficits in the study area*. As stated above, the study area is facing rather large deficits for some of these facilities. To account for part of these deficits, the following facilities should be installed:

- Tennis courts: New neighborhood parks at Maury & 15th and Castlewood & Lamberts
- Outdoor basketball courts: New neighborhood parks at Maury & 15th and Mimosa & Overlook
- Playgrounds: New neighborhood park at Maury & 15th and new pocket park at 22nd & Fairfax
- Picnic pavilions: New neighborhood park at Maury & 15th and new pocket park at Ernest Road

These new parks locations were chosen as the best candidates to receive new recreation facilities based on the aforementioned criteria used for the site suitability analysis, while also addressing the current deficits of each type of park facility determined by the market analysis.

GOAL 3: Develop community outreach to enhance utility of open space and park facilities.

Objective 3.1

The first objective for this final goal is to *identify and collaborate with existing neighborhoods, community groups, or organizations to promote the use of park spaces and facilities.*

Action 1: First, the level of interest among residents of neighborhoods surrounding parks in utilizing local park spaces should be ascertained. This could be accomplished through a resident survey, and could assess the public's view of park maintenance, conditions, safety, and other factors affecting park use in the area.

Action 2: Next, the Department of Parks and Recreation could develop an Adopt-A-Park campaign, in coordination with other City agencies and community groups, in order to foster a sense of ownership of local parks.

Action 3: During this process, the Department could facilitate initial neighborhood meetings and assist in developing organizational structure and action plans for these neighborhood volunteer groups.

Objective 3.2

The second objective for this goal is to *develop educational programs that fortify connections between public schools in the study area and existing open spaces, primarily community centers.*

Action 1: In order to accomplish this objective, the Department of Parks and Recreation could coordinate with Richmond City Public Schools and local youth programs, such as the Boys and Girls Club of Richmond and the YMCA, to develop an After School Program for local elementary schools. These programs should utilize community center facilities and open spaces for youth activities.

Action 2: Additionally, a youth athletic league could be introduced to take advantage of local open spaces. While the City does not have a citywide youth recreation league, the Police Athletic League could be used to not only foster activity in local park spaces, but also to encourage a positive relationship between police and the community.

Action 3: Finally, local elementary schools should be encouraged to utilize local park spaces for learning opportunities. This could include “mini field trips” or other outdoor activities during class time.

Objective 3.3

The final objective for this goal is to *encourage establishment of community volunteer groups or organizations to foster use and quality of individual park spaces and facilities.*

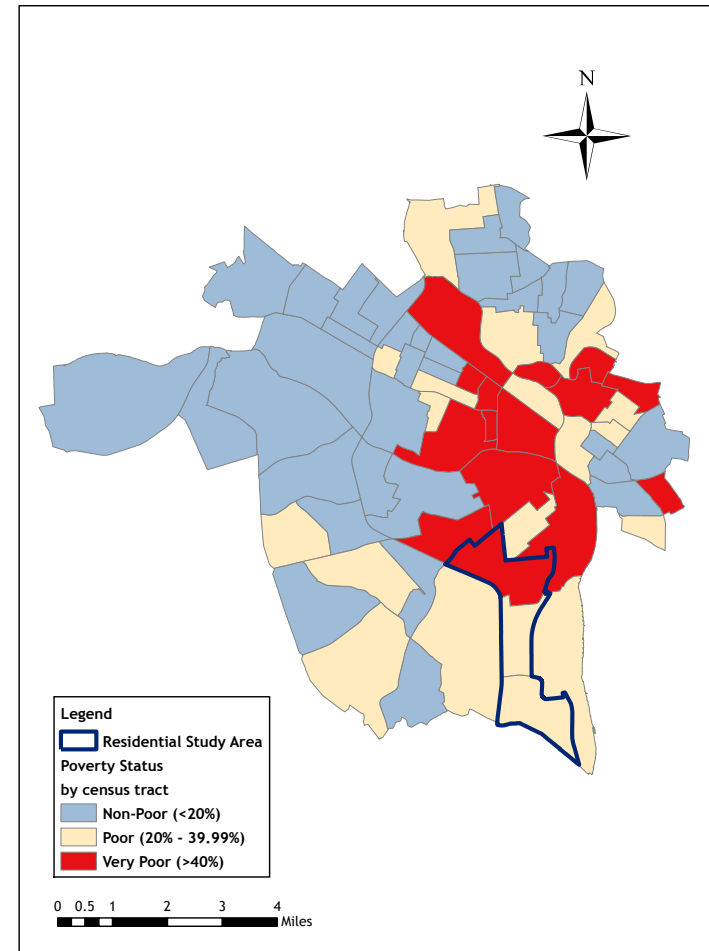
Action 1: One strategy for this objective is to develop a “Rent-A-Park” program whereby community groups and other organizations may reserve park facilities, such as picnic pavilions, for use at their events. Although this is already made possible through rental fees imposed by the City, discounting these fees or making the use of facilities free of charge would encourage community events at local parks.

Action 2: In addition, the Department of Parks and Recreation could create a seasonal outdoor entertainment program, wherein families are invited to gather once a month during the summer at Bellemeade Community Center for outdoor movie viewing and other activities.

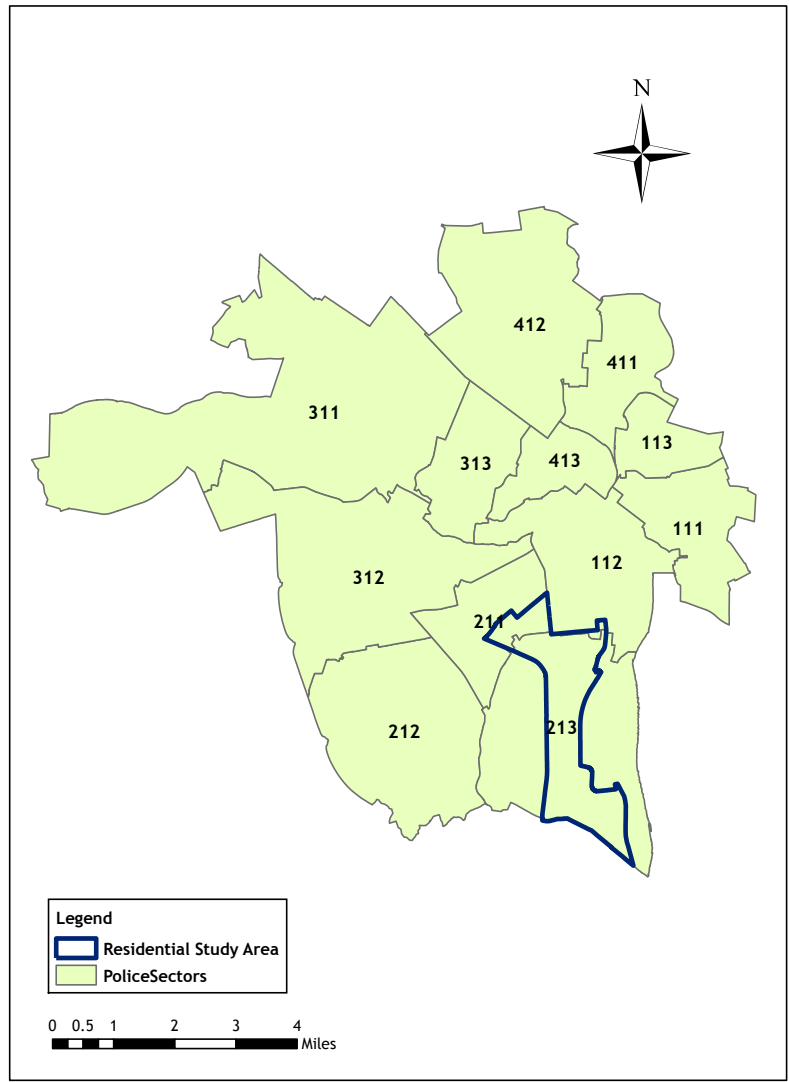
Appendix A: Residential

A-1: 2010 RACIAL DISTRIBUTION RICHMOND, VA	
White	40.8%
Black	50.6%
American Indian/Alaskan Native	0.3%
Asian	2.3%
Native Hawaiian/Pacific Islander	0.1%
Other	3.6%
Two or More Races	2.3%
Hispanic/Latino (of any race)	6.3%
Source: U.S. Census Bureau (2010 Census SF1 - 100%)	

A-2: 2010 MEDIAN HOUSEHOLD INCOME RICHMOND, VA - BY RACE	
White	\$51,427
Black or African American	\$31,032
Hispanic	\$56,508
Source: U.S. Census Bureau (2010 Census SF1 - 100%)	



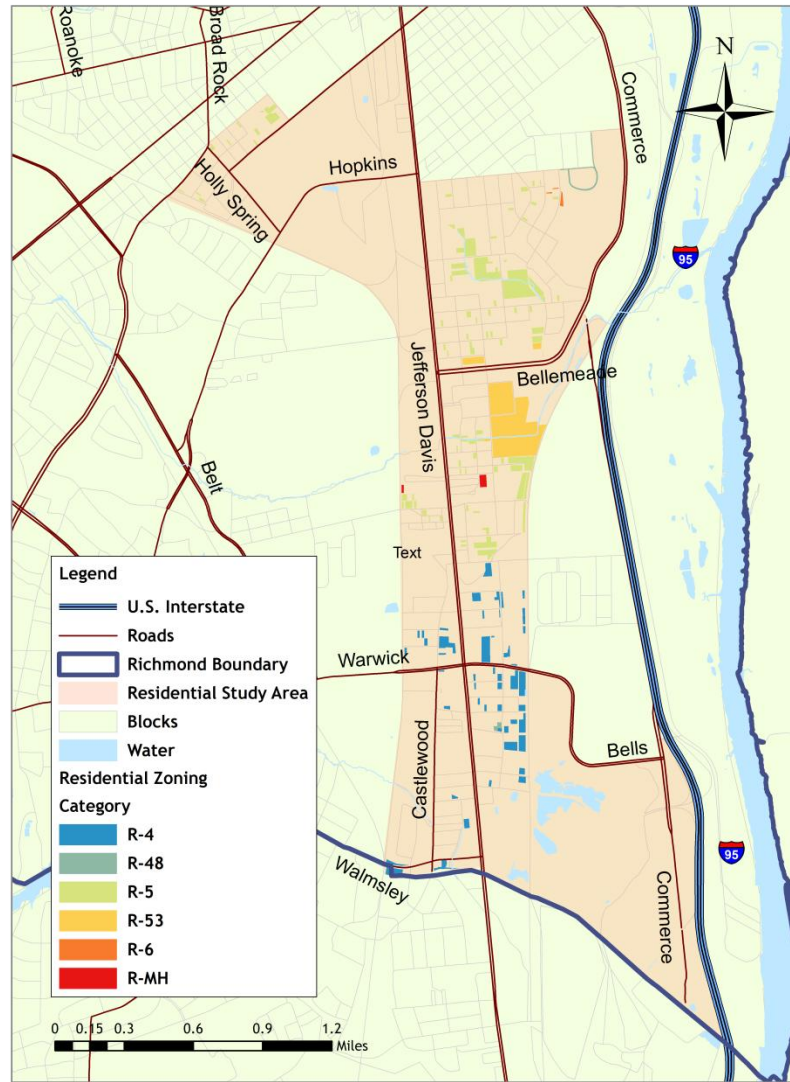
A-3: Poverty Status
Source: U.S. Census Bureau (2010 ACS - 5 yr. est.)



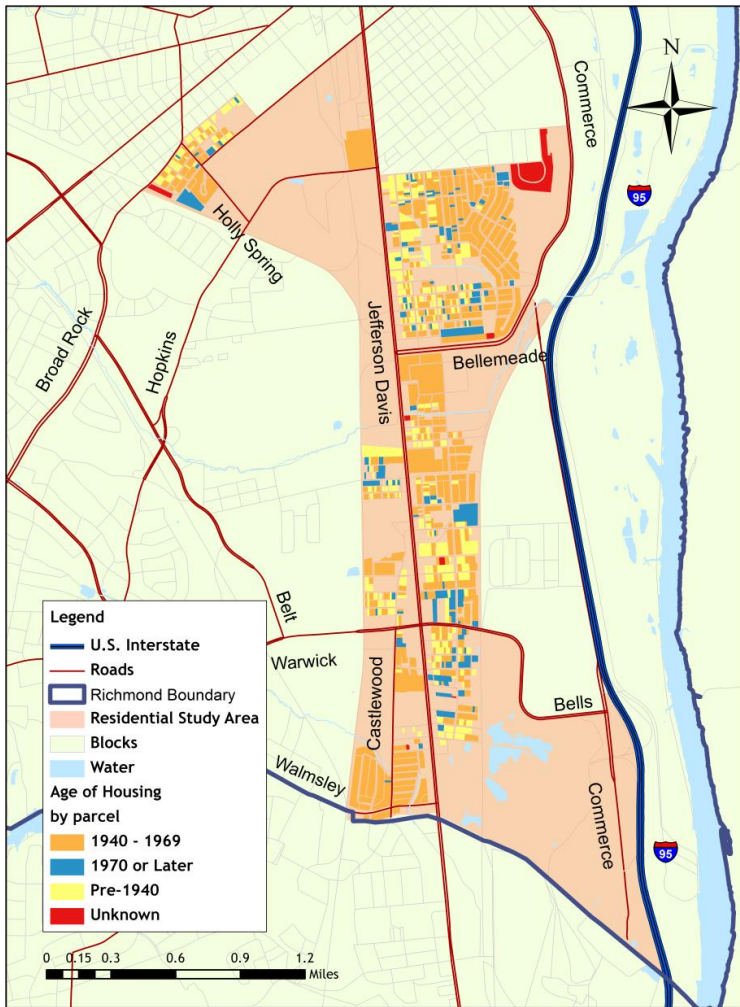
A-4: Richmond Police Sectors
 Source: City of Richmond

A-5: 2000, 2005 & 2010 SELECTED CRIMES - POLICE SECTORS 112, 213 & RICHMOND, VA

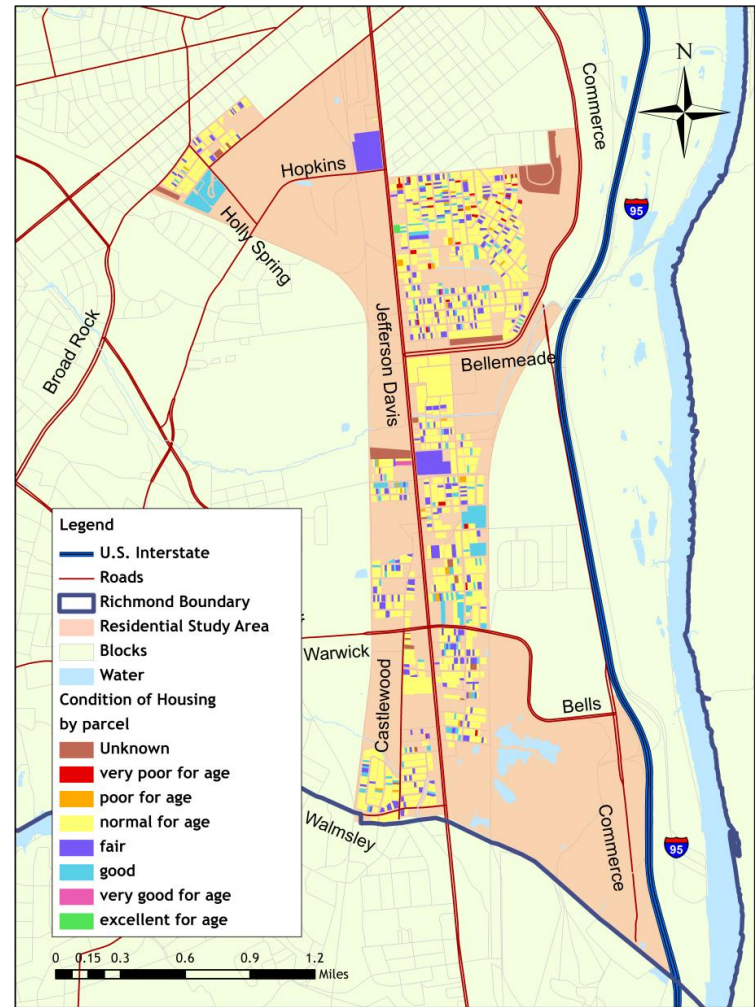
Police Sector	Year*	Homicides	Sex Offense	Robbery	Assault	Burglary	Vice	Theft	Veh. Theft	Other
112	2000	5	17	66	382	159	141	741	166	1,534
112	2005	6	12	79	380	139	231	656	152	1,097
112	2010	5	12	51	395	96	231	405	56	1,725
213	2000	7	27	83	543	197	289	681	202	1,403
213	2005	9	22	106	451	166	333	452	190	1,209
213	2010	3	11	54	352	110	207	340	58	1,414
Richmond	2000	76	298	1,103	5,954	2,855	2,442	10,938	2,577	21,743
Richmond	2005	85	246	1,213	5,336	2,514	2,805	8,330	2,251	16,387
Richmond	2010	44	151	739	5,126	1,776	2,503	5,939	869	19,937
Combined Police Sector Totals*										
2000 Total		12	44	149	925	356	430	1,422	368	2,937
2005 Total		15	32	185	831	305	564	1,108	342	2,306
2010 Total		8	23	105	747	206	438	745	114	3,139
* Total crimes committed throughout an entire calendar year.										
Source: City of Richmond Police Department										



A-6: Residential Zoned Vacant Land
 Source: City of Richmond



A-7: Current Housing Stock Age
Source: City of Richmond



A-8: Current Housing Stock Condition
Source: City of Richmond

A-8: 2010 MOBILITY - RICHMOND, VA

	Total	Moved from within the City of Richmond	Moved from a Different County or City within Virginia	Moved from a Different State	Moved from a Foreign Country
AGE					
1 to 4 years	10,365	12.2%	6.9%	2.4%	0.7%
5 to 17 years	26,577	10.5%	4.7%	1.2%	1.0%
18 to 24 years	34,765	21.2%	24.0%	6.6%	1.4%
25 to 34 years	33,131	16.5%	11.2%	4.6%	1.0%
35 to 44 years	24,671	10.3%	5.0%	2.9%	0.9%
45 to 54 years	26,114	8.4%	5.4%	1.4%	0.3%
55 to 64 years	20,712	6.1%	2.9%	1.3%	0.6%
65 to 74 years	11,353	3.8%	1.4%	0.6%	0.1%
75 years and over	11,482	2.9%	2.6%	1.4%	0.0%
SEX					
Male	94,289	12.1%	8.9%	3.3%	0.9%
Female	104,881	11.7%	9.0%	2.7%	0.7%
RACE AND HISPANIC OR LATINO ORIGIN					
One race	193,936	11.9%	8.8%	2.9%	0.8%
White	83,534	11.4%	11.3%	4.8%	1.0%
Black or African American	101,759	12.0%	6.1%	1.3%	0.3%
American Indian/Alaska Native	720	24.4%	5.3%	2.4%	7.2%
Asian	4,531	15.2%	21.4%	3.7%	5.9%
Native Hawaiian/Pacific Islander	38	15.8%	0.0%	0.0%	0.0%
Some other race	3,354	10.2%	12.0%	3.1%	4.6%
Two or more races	5,234	12.3%	11.7%	4.9%	0.2%
Hispanic or Latino origin (of any race)	10,854	15.0%	12.1%	5.0%	5.0%
White alone, not Hispanic or Latino	76,847	11.1%	11.4%	4.7%	0.4%

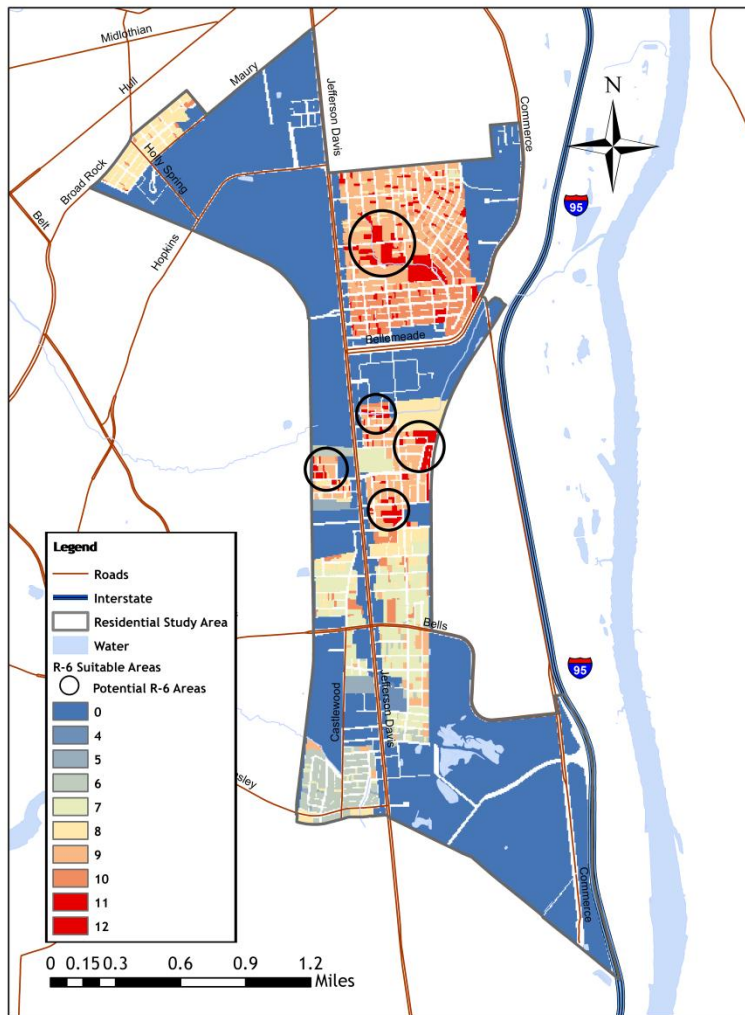
A-8: 2010 MOBILITY - RICHMOND, VA CONTINUED...

	Total	Moved from within the City of Richmond	Moved from a Different County or City within Virginia	Moved from a Different State	Moved from a Foreign Country
EDUCATIONAL ATTAINMENT					
Population 25 years and over	127,463	9.6%	5.8%	2.4%	0.6%
Less than high school graduate	25,292	11.9%	4.5%	1.4%	1.1%
High school graduate (includes equivalency)	30,914	10.3%	4.7%	2.3%	0.7%
Some college or associate's degree	29,642	9.1%	7.6%	1.4%	0.5%
Bachelor's degree	25,016	9.0%	7.2%	3.5%	0.3%
Graduate or professional degree	16,599	6.6%	4.6%	4.3%	0.6%
Source: U.S. Census Bureau (2010 ACS - 5 yrs. est.)					

A-9: R-6 Re-Zoning Suitability and Potential R-6 Zoning Clusters

Suitable areas for additional R-6 zoning were determined based on three (3) main criteria: 1) proximity to Bellemeade Road, 2) current zoning and 3) housing condition (to include vacant parcels). Desirable parcels included those close to Bellemeade Road because they would be in close proximity to a pre-determined economic node at the intersection of Jefferson Davis Highway and Bellemeade Road, as well as close proximity to an existing school, open space and recreational facilities; those parcels that have current structures in either poor or very poor condition or are vacant; and, those that are currently in either R-4 or R-5 zoning since both of these zoning districts are currently underutilized. A process of scoring and weighting parcels based on these criteria shows parcel clusters that are potentially most suitable for new R-6 zoning (see below).

POTENTIAL R-6 SELECTION CRITERIA			
Criteria 1: Zoning (score range 1-12; category weight 33%)		Criteria 2: Condition (score range 1-12; category weight 34%)	
R-4	8	Vacant	12
M-1	Restricted	Normal	5
B-3	Restricted	Fair	6
OS	1	Unknown	4
R-5	12	Good	3
R-53	Restricted	Very Poor	11
R-6	7	Poor	10
R-48	Restricted	Very Good	2
R-2	Restricted	Excellent	1
M-2	Restricted		
B-6	Restricted		
R-MH	10		
Criteria 3: Distance from Bellemeade Road (score range 1-12; category weight 33%)			
Equal Interval (12 categories) - parcels closest to Bellemeade Road receive a higher score			



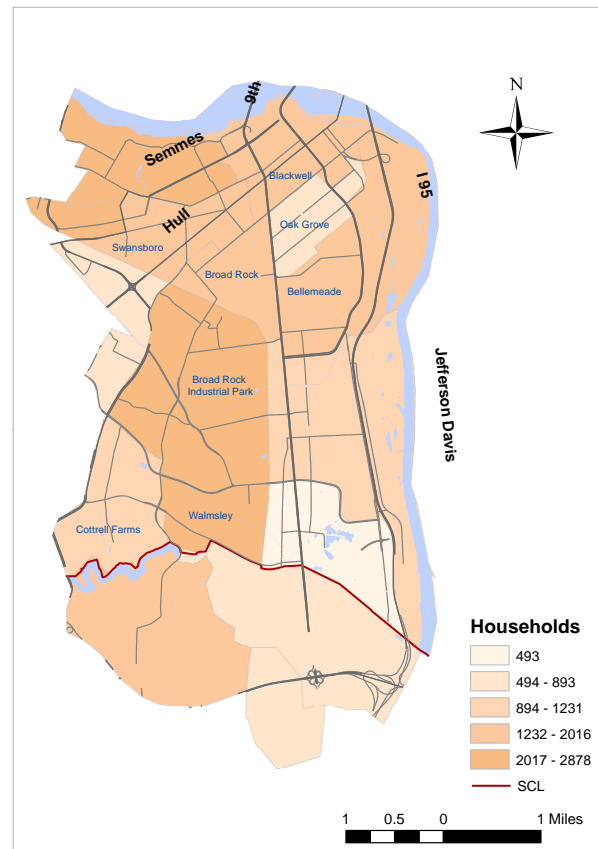
A-9: Potentially Suitable R-6 Parcels with Cluster Identification
 Source: Base parcel information provided by the City of Richmond

The large parcel with a total score of 12, located adjacent to the northern most identified cluster is not identified as a suitable parcel for R-6 zoning even though it is a vacant parcel currently located in R-5 zoning because it is currently owned by the City of Richmond Parks and Recreation Department, and would serve as added green and open space.

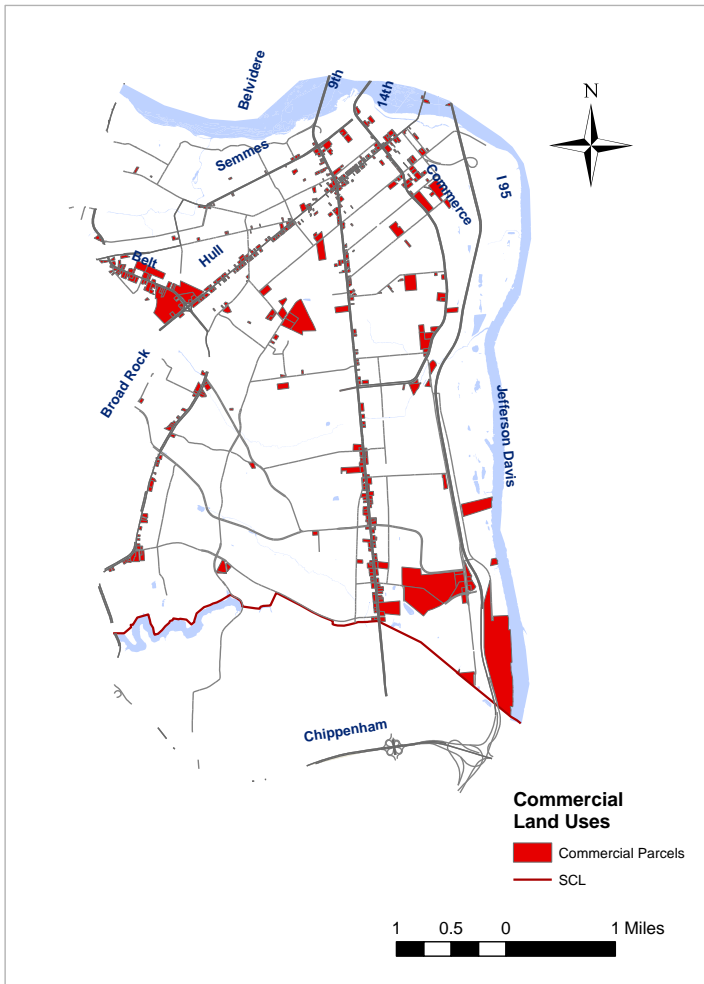
Additionally, it is notable to mention that there are several water features that traverse the study area, as identified in the Green & Open Space analysis that must be taken into consideration when adding additional development to the study area. While there is current development within existing Resource Protection Areas, this however may not automatically preclude development bans; but, rather necessary steps would need to be taken to ensure the control of storm water runoff and continued water quality standards throughout the study area. For example, if an adequate number of parcels can be amassed, the use of cluster development could be one method of limiting the impact of development on water quality as well as preserving beneficial open space near environmentally sensitive areas.

Appendix B: Commercial

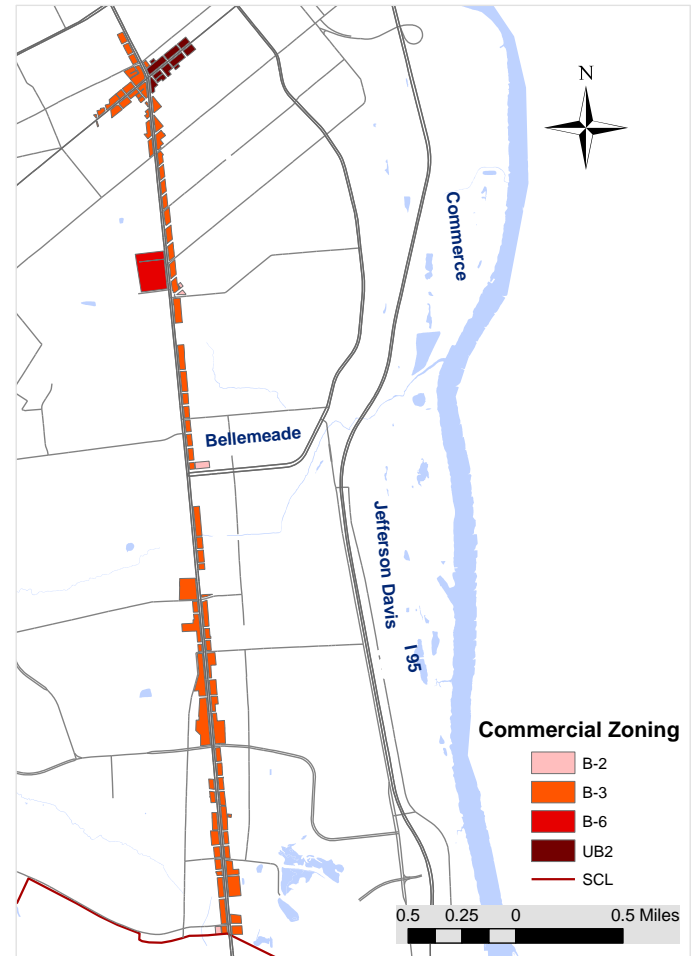
B-1: Existing Conditions



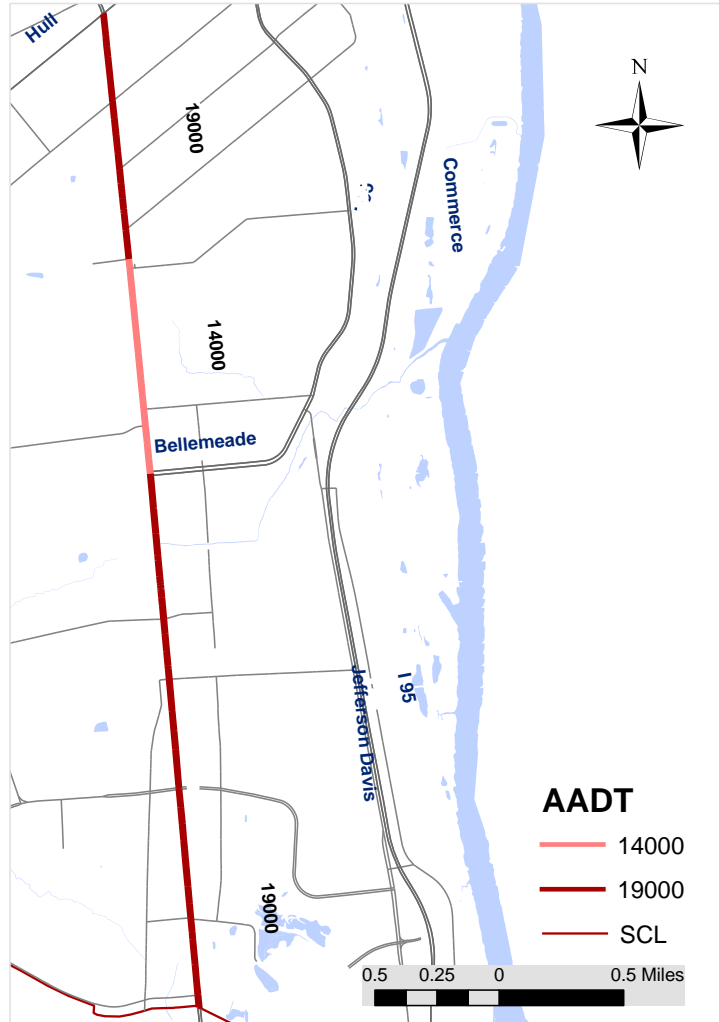
Map B-1.1: Study Area Households
Source: U.S. Census (2010 ACS - 5 yr. est.)



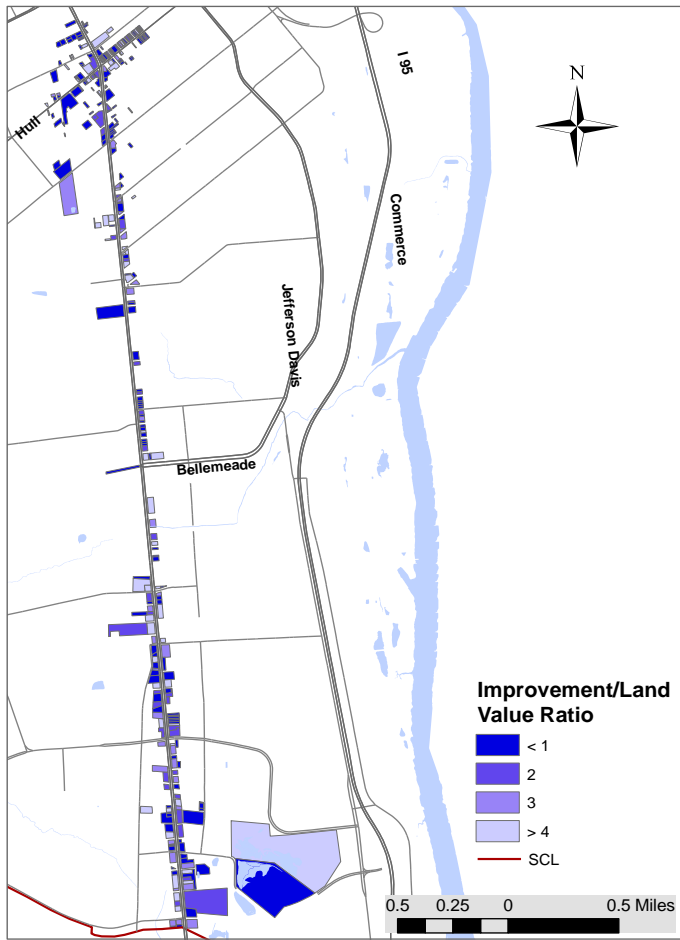
Map B-1.2: Study Area Current Commercial Land Uses
Source: City of Richmond



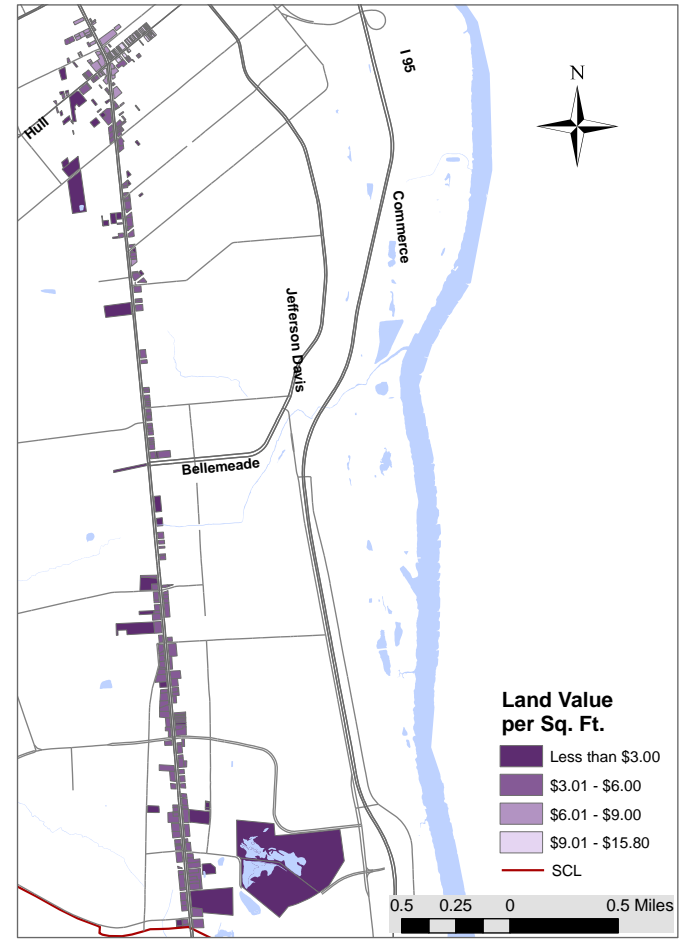
Map B-1.3: Parcels Zoned for Commercial Uses
Source: City of Richmond



Map B-1.4: Corridor Traffic Counts
 Source: Virginia Department of Transportation

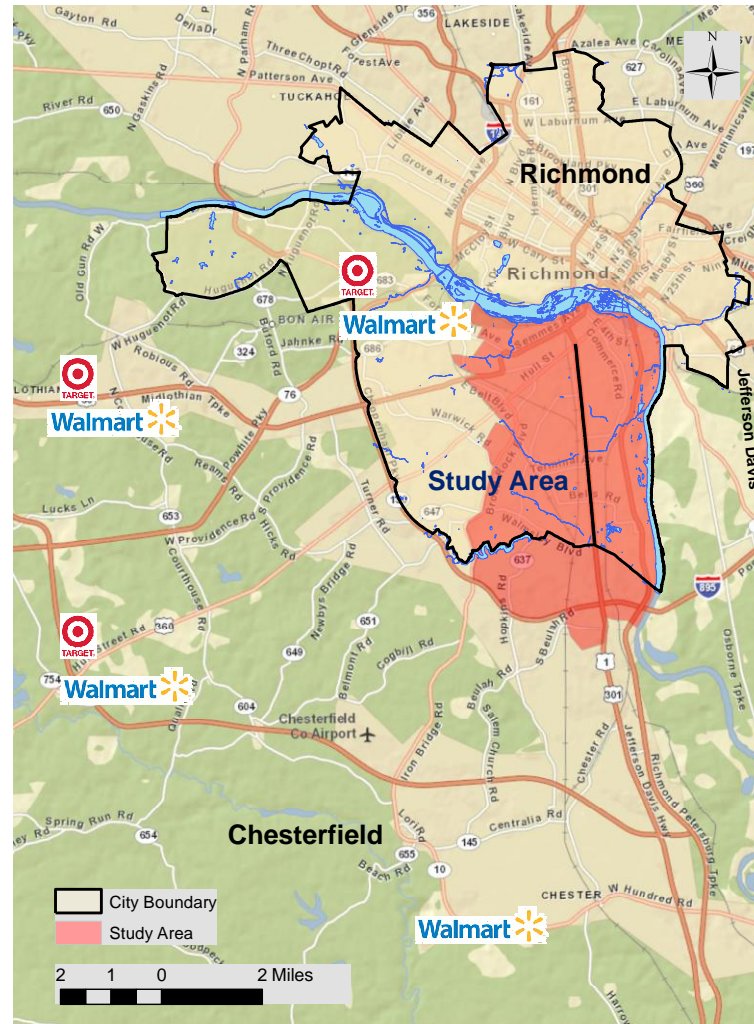


Map B-1.5: Improvement to Land Value Ratio
Source: City of Richmond



Map B-1.6: Corridor Land Value per Square Foot
Source: City of Richmond

B-2: Market Analysis



Map B-2.1: Big Box Retail Near Study Area

LARGE PARCEL USE ANALYSIS RESULTS: SUITABLE PARCELS

Parcel 1

Address: 2401 Maury St.
Owner: Philip Morris Inc.
Acreage: 2.45
Finished Square Footage: None
Use: Paved Surface Parking
Total Assessed Value: \$236,000
Improvement/Land Value Ratio: .48
Assessed Land Value/Sq. Ft.: \$1.50



Assessed Land Value/Sq. Ft.: \$.55

Parcel 2

Address: 2400 Maury St.
Owner: Bigge Crane and Rigging Co.
Acreage: 7.13
Finished Square Footage: 19,164
Use: Warehouse
Total Assessed Value: \$1,522,000
Improvement/Land Value Ratio: 2.27
Assessed Land Value/Sq. Ft.: \$1.50



Parcel 4

Address:
Owner: William Champion
Acreage: 5.37
Finished Square Footage: 4,800
Use: Vehicle Repair/Service
Total Assessed Value: \$159,000
Improvement/Land Value Ratio: .61
Assessed Land Value/Sq. Ft.: \$1.27



Parcel 3

Address: 1328 Jefferson Davis Hwy
Owner: International Paper Company
Acreage: 4.22
Finished Square Footage: None
Use: Paved Surface Parking (Google Maps shows that it appears to be vacant)
Total Assessed Value: \$159,000
Improvement/Land Value Ratio: .61



Parcel 5

Address: 4215 Lynhaven Avenue
Owner: James Brown
Acreage: 3.43
Finished Square Footage: 2,345
Use: Vehicle Repair/Service
Total Assessed Value: \$214,000
Improvement/Land Value Ratio: .20
Assessed Land Value/Sq. Ft.: \$1.20



Parcel 6

Address: 4601 Glasgow Street
Owner: Frank Regan
Acreage: 1.72
Finished Square Footage: None
Use: Commercial Vacant Land
Total Assessed Value: \$98,000



Improvement/Land Value Ratio: 0
Assessed Land Value/Sq. Ft.: \$1.31

Total Assessed Value: \$1,823,000
Improvement/Land Value Ratio: 1.16
Assessed Land Value/Sq. Ft.: \$1.47

Parcel 7

Address: 4737 Jefferson Davis Hwy
Owner: 4737 Jefferson Davis Hwy LLC
Acreage: 13.18
Finished Square Footage: 135,508
Use: Community Shopping Center



Table B-2.6: Suggested Large Use Commercial Parcels
Source: City of Richmond Real Estate Assessor

NICHE USE ANALYSIS RESULTS: SUITABLE PARCELS

Parcel 1

Address: 2012 Maury Street
Owner: Jamalh LLC
Finished Square Footage: 2,560
Use: Convenience Market
Assessed Land Value/Sq. Ft.: \$3.78



Parcel 2

Address: 701 Jefferson Davis Highway
Owner: Inyok Kim
Finished Square Footage: 3,072
Use: Convenience Market
Assessed Land Value/Sq. Ft.: \$4.03



Parcel 3

Address: 705 Jefferson Davis Hwy
Owner: 39 Forever LLC
Finished Square Footage: 3,150
Use: Mixed Retail
Assessed Land Value/Sq. Ft.: \$3.10



Parcel 4

Address: 803 Jefferson Davis Highway
Owner: Lawrence and Debra Tyson
Finished Square Footage: 2,310
Use: Commercial Shell
Assessed Land Value/Sq. Ft.: \$3.88



Parcel 5

Address: 817 Jefferson Davis Highway
Owner: Gordon Will
Finished Square Footage: 1,956
Use: Service Garage
Assessed Land Value/Sq. Ft.: \$4.06



Parcel 6

Address: 912 Jefferson Davis Highway
Owner: Omar and Hector Sanchez
Finished Square Footage: 4,068
Use: Service Garage
Assessed Land Value/Sq. Ft.: \$3.96



Parcel 7

Address: 1000 1/2 Jefferson Davis Hwy
Owner: Blue Real Estate LLC
Finished Square Footage: 1,912
Use: General Retail
Assessed Land Value/Sq. Ft.: \$3.70



Parcel 8

Address: 1017 Jefferson Davis Hwy
Owner: Byung and Um Lim
Finished Square Footage: 2,223
Use: Convenience Market
Assessed Land Value/Sq. Ft.: \$4.06



Parcel 9

Address: 2324 Gordon Avenue
Owner: Robert and Hattie Purnell
Finished Square Footage: 1,830
Use: General Retail
Assessed Land Value/Sq. Ft.: \$2.26



Parcel 10

Address: 1215 Jefferson Davis Hwy
Owner: Sovran Bank NA
Finished Square Footage: 3,572
Use: Bank
Assessed Land Value/Sq. Ft.: \$3.78



Parcel 11

Address: 1301 Jefferson Davis Hwy
Owner: Southland Corp
Finished Square Footage: 3,572
Use: Convenience Market
Assessed Land Value/Sq. Ft.: \$3.78



Parcel 12

Address: 2701 Jefferson Davis Hwy
Owner: Chong and Kim Chung
Finished Square Footage: 2,184
Use: Convenience Market
Assessed Land Value/Sq. Ft.: \$3.18



Parcel 13

Address: 2920 Jefferson Davis Hwy
Owner: 7 Eleven Inc.
Finished Square Footage: 2,542
Use: Convenience Market
Assessed Land Value/Sq. Ft.: \$3.03



Parcel 14

Address: 2915 Jefferson Davis Hwy
Owner: George Anderson
Finished Square Footage: 3,970
Use: Service Garage



Table B-2.7: Suggested Niche Use Commercial Parcels
Source: City of Richmond Real Estate Assessor

Appendix C: Industrial

Appendix Table C-1.1.A Jefferson Davis Highway Corridor Location Quotient Analysis						
	Employment	Employment	Employment Change	Percent Growth	National Employment	
	1999	2009		1999-2009	1999	2009
Total	31,985	26,054	-5,932	-0.228	109640075	114490355
Forestry, Fishing, etc.	0	0	0	0.000	192155	153829
Mining/Extraction Activities	109	49	-60	-1.224	456645	604653
Utilities	249	268	19	0.069	667062	641552
Construction	3,556	2,487	-1,069	-0.430	6201626	5967128
Manufacturing*	7,870	4,890	-2,980	-0.609	16659930	11632956
Wholesale Trade	2,176	2,178	2	0.001	5972022	5827769
Retail Trade	3,268	2,008	-1,260	-0.627	14476628	14802767
Transportation and Warehousing	2,541	2,443	-98	-0.040	3627057	4159604
Information	508	594	86	0.144	3234530	3288109
Finance and Insurance	1,816	2,617	801	0.306	5965174	6171240
Real Estate	554	348	-206	-0.592	1873792	2036590
Professional Services	312	517	205	0.396	6432422	7839965
Management	1,918	1,548	-370	-0.239	2788276	2853450
Administrative and Support	2,181	1,611	-570	-0.354	8366523	9060987
Education	8	19	11	0.579	2431718	3200553
Health Care and Social Assistance	1,839	1,569	-271	-0.172	13865014	17531142
Arts, Entertainment	118	127	9	0.071	1640030	2010339
Accommodation and Food	1,405	1,473	68	0.046	9638007	11443293
Other	1,557	1,310	-247	-0.189	5151464	5264429

Appendix Table C-1.1.B Jefferson Davis Highway Corridor Location Quotient Analysis Continued...

	Percent change	Nation		Location Quotient
		Local LQ 1999	Local LQ 2009	Percent change
Total	0.04	1.00	1.00	0.00
Forestry, Fishing, etc.	-0.25	0.00	0.00	0.00
Mining/Extraction Activities	0.24	1.94	1.40	-0.39
Utilities	-0.04	1.87	1.94	0.04
Construction	-0.04	18.27	17.04	-0.07
Manufacturing*	-0.43	4.35	3.60	-0.21
Wholesale Trade	-0.02	0.45	0.82	0.46
Retail Trade	0.02	1.88	1.51	-0.24
Transportation and Warehousing	0.13	0.60	0.73	0.17
Information	0.02	0.48	0.63	0.23
Finance and Insurance	0.03	1.92	3.50	0.45
Real Estate	0.08	0.32	0.25	-0.28
Professional Services	0.18	0.57	1.11	0.49
Management	0.02	1.02	0.87	-0.18
Administrative and Support	0.08	2.68	2.48	-0.08
Education	0.24	0.00	0.01	0.64
Health Care and Social Assistance	0.21	2.59	2.15	-0.20
Arts, Entertainment	0.18	0.03	0.03	0.08
Accommodation and Food	0.16	2.94	3.22	0.09
Other	0.02	0.55	0.50	-0.10

Appendix D: Green & Open Space

D-1: City of Richmond Park Classifications

The classifications of parks in the City of Richmond's Parks, Recreation and Community Facilities Master Plan are as follows:

- mini park/pocket park (1 acre or less; 0.25 mile service area)
- neighborhood park (1 to 15 acres; 0.5 mile service area)
- community park (10 to 50 acres; 2 mile service area)
- regional park (50 to 1,000 acres; 5 mile service area)
- greenway/corridor/linear park/linkage (12 feet or wider)

All park classifications include basic amenities such as a small playground, benches, and landscaping. (66) The Plan also describes other parkland areas, including special use areas for single purpose recreation activities, open space and natural areas, and conservation, preservation, and wilderness areas. Special use areas include recreation and community centers, senior centers, community gardens, or amphitheaters. (70)

D-2: City of Richmond *Parks, Recreation and Community Facilities Master Plan* Community Needs Assessment

In its facility Needs Assessment in the *Parks, Recreation and Community Facilities Master Plan*, the City use community surveys, focus group meetings, key leader interviews, and public forums to determine the top facility and amenity priorities for green and open space. (7) The top five priorities are as follows:

1. Walking and biking trails;
2. Small neighborhood parks;
3. Indoor fitness and exercise facilities;
4. Natural areas, wildlife habitats, and nature trails; and
5. Indoor swimming pools and leisure pools.

Additional community input revealed that perceived strengths of the City's park system are its abundant natural resources, great park staff members, programs offered, and volunteer community park friends groups. (34) Perceived weaknesses include the lack of funding the Department receives, the decline of maintenance, lack of information available to the public, an extreme amount of turnover in the Department, and lack of internal departmental communication and organization. (34-35)

The Department conducted a Community Attitude and Interest Survey in 2007 by mail and phone of 624 households in the City to establish priorities for the future improvement of parks and

recreation facilities, programs, and services with the community. (38) The results of this survey are as follows:

- 75% of respondent households have visited City of Richmond parks during the past year; over half of those households have visited the parks at least 6 times.
- 16% of respondent households have participated in recreation programs offered by the City during the past year.
- Restrooms, drinking fountains, picnic tables and benches, trash removal and trash cans, and park lighting received the highest rankings of potential improvements that respondents would like to have made in City parks.
- For all types of facilities, less than 35% of respondents indicated that the facility completely meets the needs of their household.
- The most frequently mentioned reasons that prevent respondent households from using parks, recreation facilities, and programs of the City include not knowing what is offered (38%), insufficient security (25%), not knowing locations of facilities (18%), and programs or facilities not being offered (16%).

The Plan also examined participation trends of various demographic groups in recreational activities. The authors found that men and women share a desire for most of the top recreational activities - including walking, biking, and jogging - but that women participate in recreational activities further into adulthood than men. (21-22) Also, technology advancements made in the past two decades have contributed to decreasing recreational participation by the youth population, but older groups are now much more active than

previous generations. (25) Particularly relevant to the Jefferson Davis Highway Corridor, the Plan made the following findings concerning recreational participation by race and ethnicity:

“The black population has historically been an ethnic group that participates in active team sports, most notably football, basketball, and baseball. The black populace exhibits a strong sense of neighborhood and local community through large special events and gathering with extended family and friends including sacred family reunions. Outdoor and water based activities, such as, hiking, water skiing, rafting, and mountain biking, are not much of a factor in the participatory recreational activities.” (27)

Also,

“Hispanic and Latino Americans have strong cultural and community traditions with an emphasis placed on the extended family, many times gathering in large recreational groups where multiple activities geared toward all age segments of the group may participate. Large group pavilions with picnicking amenities and multi-purpose fields are integral in the communal pastime shared by many Hispanics.” (27)

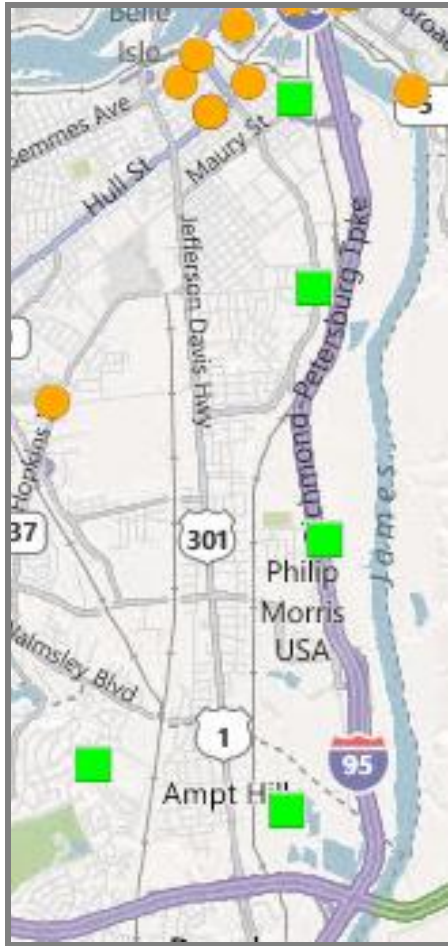
D-3: Environmental Conditions of the Corridor



Map D-3.1: Water and Wetlands of Corridor
 Source: City of Richmond

Management Areas, and those in purple are Chesapeake Bay Resource Protection Areas. Resource Protection Areas shall consist of lands adjacent to water bodies with perennial flow that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may cause significant degradation to the quality of state waters. Resource Management Areas shall include land types that, if improperly used or developed, have a potential for causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area. Pursuant to the Chesapeake Bay Preservation Act, land development may be allowed in the Resource Protection Area, subject to approval by the local government in which it lies, only if it is water dependent, constitutes redevelopment, or meets other conditions of the Act.

The map above shows various features of the waters in and around the study area. Areas highlighted in yellow are wetlands, those in light blue are Chesapeake Bay Resource



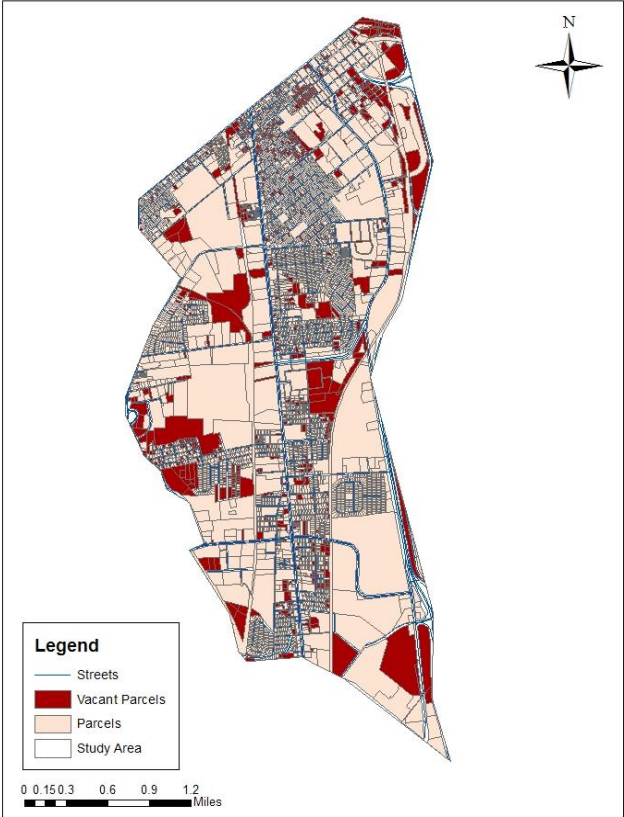
Map D-3.2: Hazardous Waste Sites of Corridor
Source: U.S. Environmental Protection Agency

The map above shows brownfields, symbolized by orange circles, and hazardous waste cleanup sites, symbolized by green squares, within and around the study area. Brownfields are “abandoned, idled, or underused industrial and commercial facilities or sites where expansion or

redevelopment is complicated by real or perceived environmental contamination.” Hazardous waste cleanups are sites at which there are “actions taken to deal with a release or threat of release of a hazardous substance that could affect humans and/or the environment.” These are also known as remedial actions, removal actions, response actions, or corrective actions. EPA tracks cleanup progress for all brownfields. Although they have all be assessed for contamination, none of the brownfield sites around the study area have received corrective action.

Each of the hazardous waste cleanup sites around the study area has been assessed for corrective action. Not all of the sites have a remediation action scheduled or completed, but none present a threat to human or ecological health. The site closest to Jefferson Davis Highway is Dupont’s Spruance Plant at 5401 Jefferson Davis Highway. Chemicals were found to be present in the groundwater in the western part of the facility, and in plumes extending offsite the south and northeast. This groundwater eventually discharges into surrounding water bodies, including the James River, Grindall Creek, and Falling Creek, but contaminants are not present at levels of concern for human or ecological receptors. Dupont’s Corrective Measures Study for the site was approved by EPA in 2011, and the company will continue to collect groundwater and surface water monitoring data.

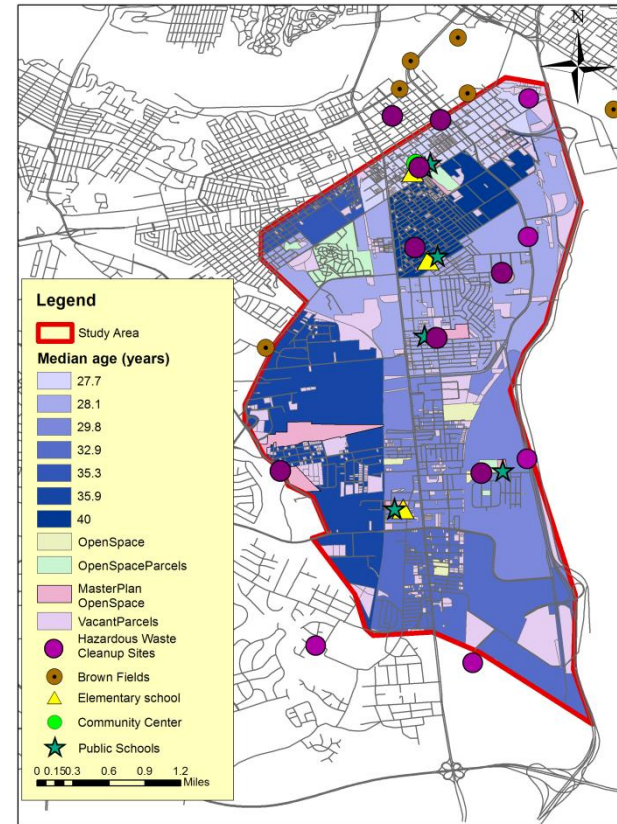
D-4: Size of Vacant Parcels



Map D-4.1: Size of Vacant Parcels
Source: City of Richmond

D-5: Demographic Analysis

We retrieved 2010 Census data from the American Fact Finder within the census tract level. The study area is comprised of census tract 602, 604, 607, 608, 609, 610 and 709. Although these census tracts combined form an area larger than our study area for green and open space purposes, we used this data to analyze demographic information. Parks and other open spaces tend to attract people from a wide range of areas. A boundary line drawn on the proceeding map shows the original study area.



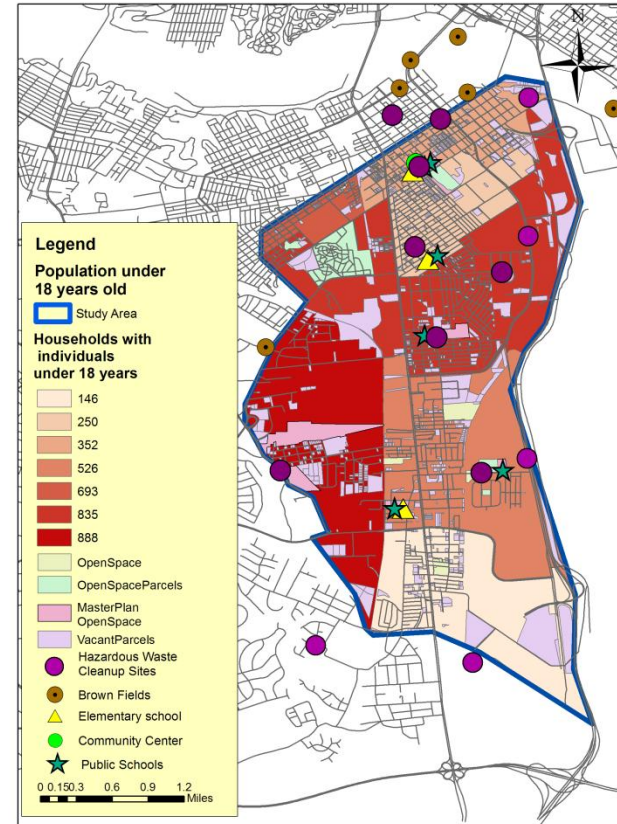
Map D-5.1: Median Age in Census Tracts of Study Area

Source: City of Richmond

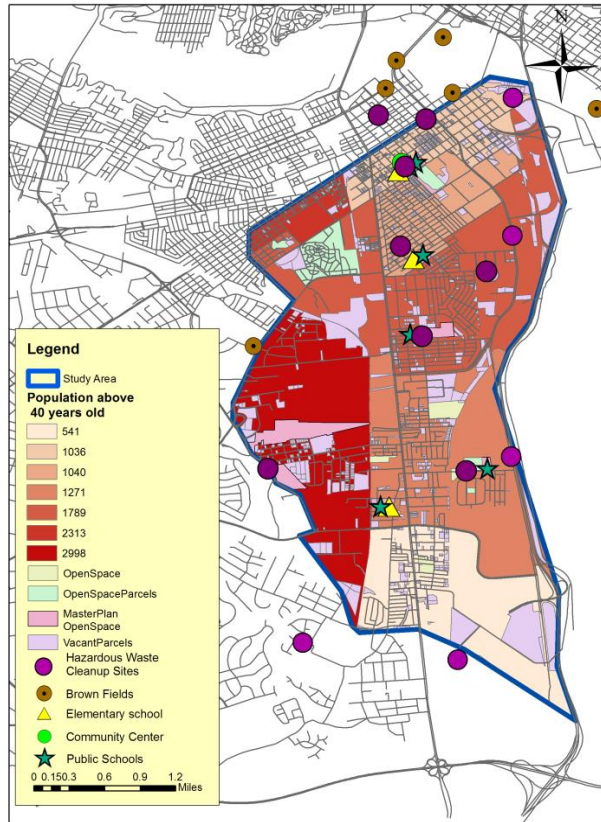
The population distribution map illustrates the population is least populated in census tract 609. Census tract 610 and 604 are the two most populated areas in the study area and they are also comparatively aging areas. In the south census tract 609, there are two big vacant parcels which draw attention.

They are good resources to be developed to green and open space. On one hand it can serve the area, on the other hand, it can attract more residents.

In the study area, the main age range (median age) is from 27.7 years old to 40 years old. On one hand, this indicates the population is mainly comprised of middle-aged people who are also the main composition of the labor force, this contributes to the solid base of the labor force. Geographically speaking, census tract 602 has a high elderly population, so aging could be an inevitable problem. The population in census tract 604 and 610 are comparatively old which are consist of people who are about 35 years old. The youngest two districts are census tract 610 and 607 which are both under 30 years old.



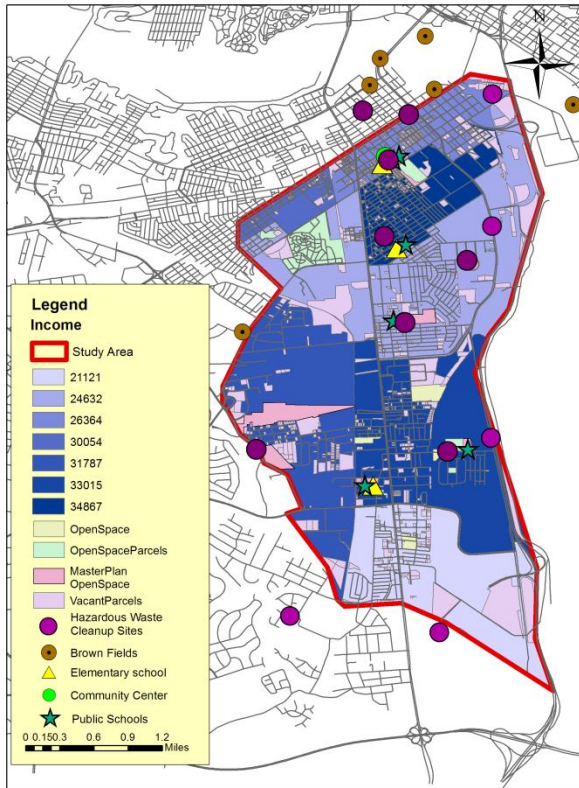
Map D-5.2: Density of Households with Children under 18 in Census Tracts of Study Area
Source: City of Richmond



locates in an area of a median age of 29.6. There are two community centers and three elementary schools. In the maps illustrating the population above 40 years old and the population under 18 years old, the community centers and elementary schools are not specifically located in the elderly and the young neighborhoods. At the same time, the similarity between age distribution of people above 40 years old and the people under 18 years old draws attention but it also make things easier. The highly required green and open space should be located in the census tract 610, 604 and 607.

Map D-5.3: Density of Population Over 40 in Census Tracts of Study Area
Source: City of Richmond

The map also shows the open space and the vacant parcels. The 1,076 vacant parcels comprise 16.6% of the entire study area which spread all over but concentrated in the middle to a degree. There is only one comparatively big current open space (about 8.8 acre) in the center where a big vacant land



Map D-5.4: Average Income in Census Tracts of Study Area
 Source: City of Richmond

Appendix D-7 shows a map of the average income of the study area census tracts. Compared to an annual income of \$38,266 in Richmond, poverty is a big issue in this area whose income range is from \$21,347 to \$34,867 dollars per year. Census tract 602 where elderly people reside has the highest income among all the areas; Census tract 609 where least people reside with

two big vacant parcels has the lowest income. Obviously more than half of the community centers and elementary schools are located in the richest area.

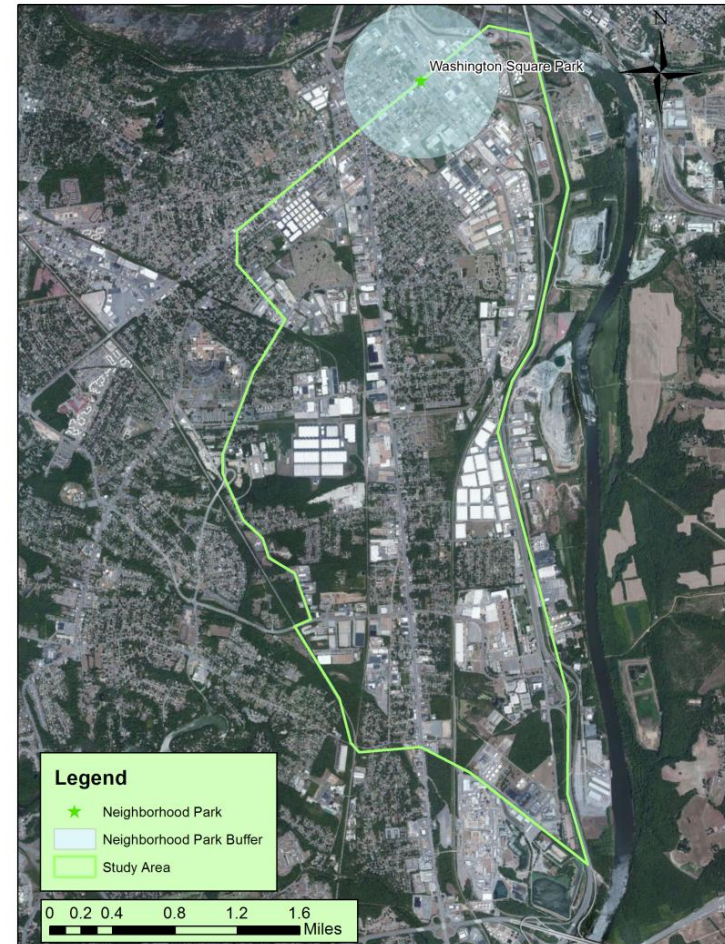
In the maps showing parks with demography, there is no particular relationship between parks and age and population distribution. There is only one pocket park in the study area which is located in the least populated area with a service radius of approximately 3 miles. There are many special use areas including play ground scattering all over the study area especially in the northwest. This makes sense compare to the population distribution because that's where most people live.

From this data, it is clear that there is a significantly lack of green and open space in census tract 610 where elderly and young people centralize.

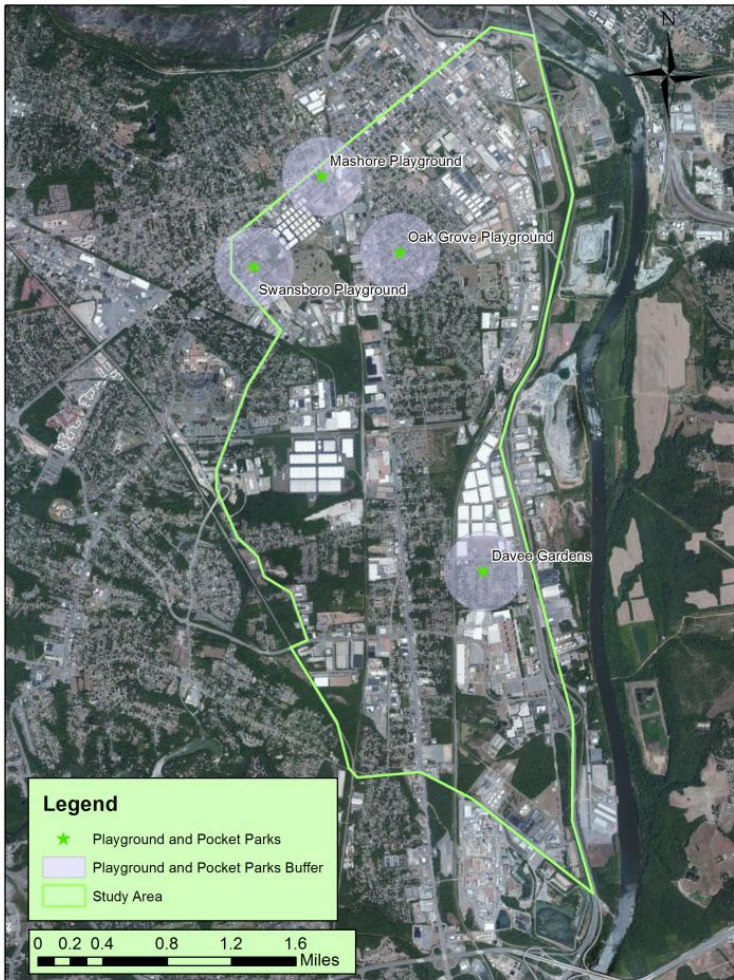
D-6: Service Areas of Existing Facilities and Parks



Map D-6.1: Community Center Service Areas
Source: City of Richmond

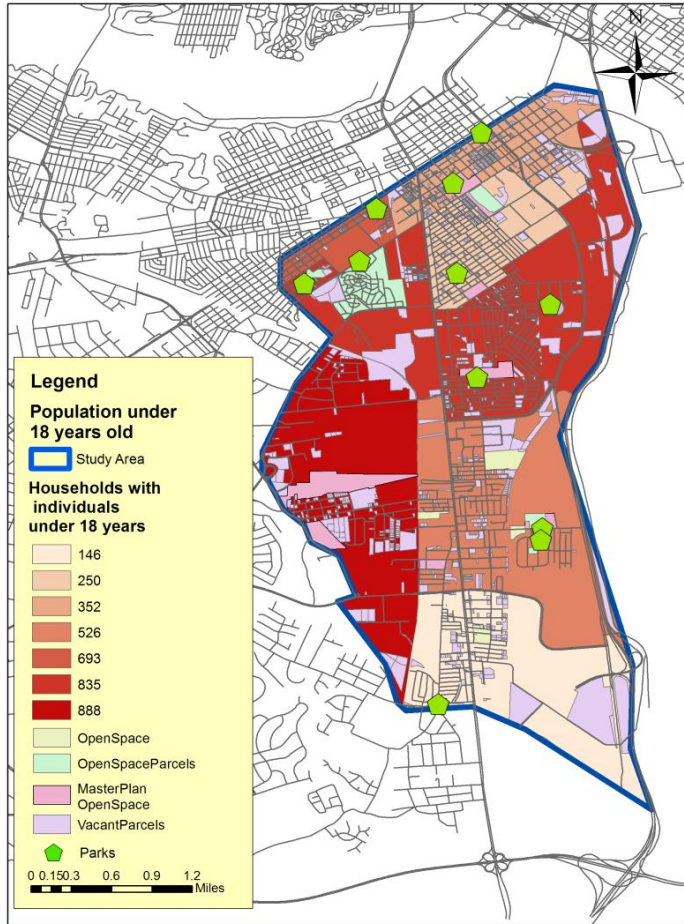


Map D-6.2: Neighborhood Park Service Area
Source: City of Richmond

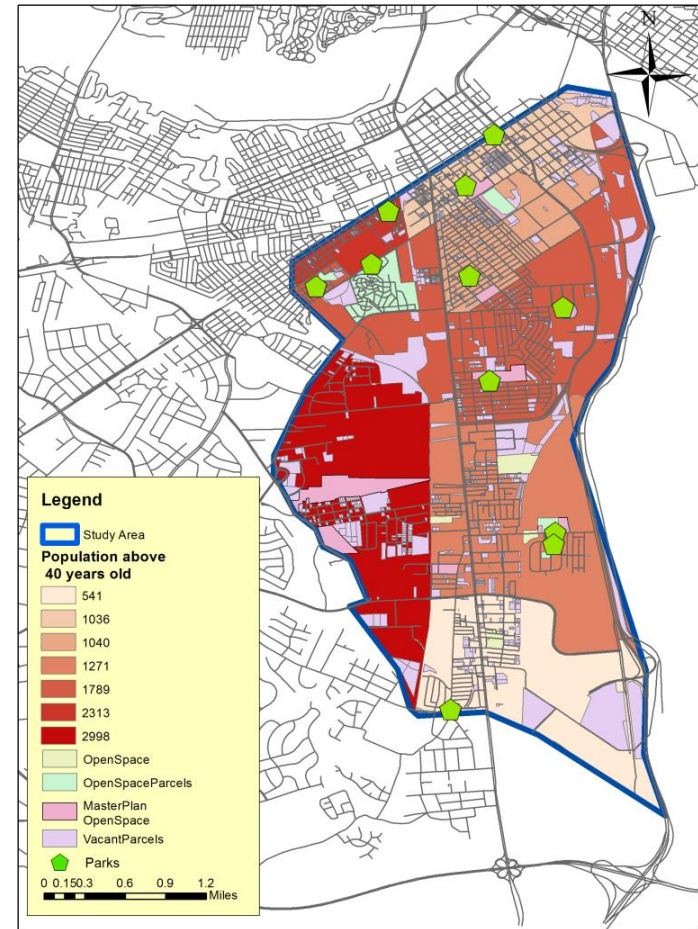


Map D-6.3: Playground and Pocket Park Service Areas
 Source: City of Richmond

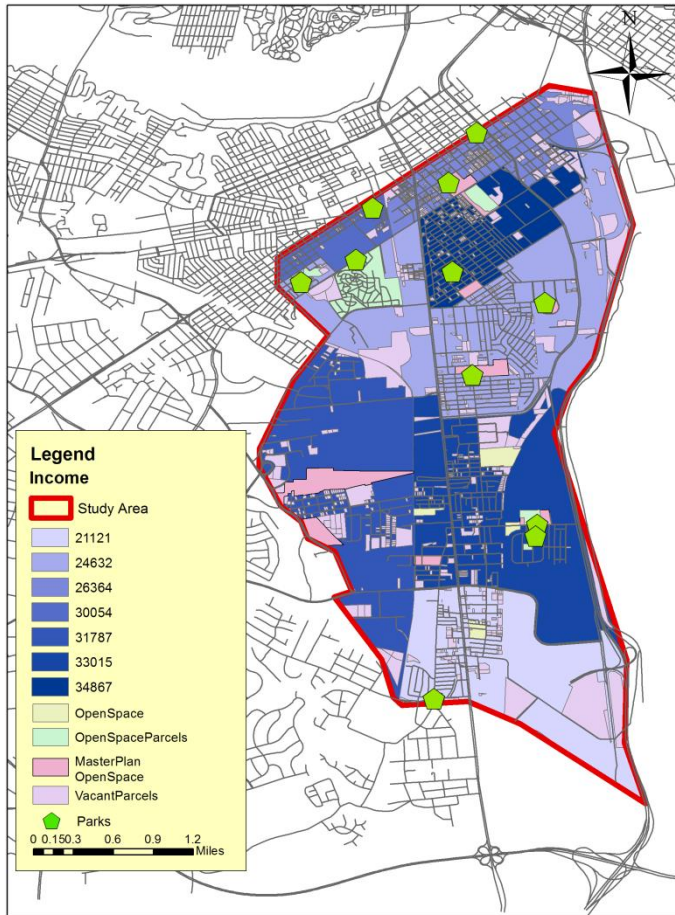
D-7: Park Location and Demographic Analysis



Map D-7.1: Park Location and Density of Population Under 18
Source: City of Richmond



Map D-7.2: Park Location and Density of Population Above 40
Source: City of Richmond



Map D-7.3: Park Location and Average Income of Census Tracts
 Source: City of Richmond

D-8: Literature Review of Open Spaces and Market Potential

Undoubtedly one of the most famous open spaces, New York City's Central Park is noted for its preservation of the environment in one of the world's most densely populated cities. Along with its scenic views and ample outdoor recreational opportunities in a city where development seems to exist nearly everywhere, Central Park is an undeniable asset to New York City residents, tourists, businesses, and government leaders. Certainly, it is a stretch to compare Central Park to anything that exists in Richmond, let alone within the study area. However, the positive impacts of Central Park on New York City indicates how green spaces can shape the economy of a community. In *Valuing Central Park's Contributions to New York City's Economy*, author Hugh O'Neill highlights the five primary mechanisms in which Central Park has helped to shape the economy and lifestyle of New York City:

1. Serving as a business enterprise, generating economic opportunities for small businesses and other merchants operating in and around Central Park
2. Acting as a premier outdoor venue attracting local, national, and international visitors
3. Functioning as a core resource for the local community, offering residents across the city with access to a first class open space where the urban and natural environment seemingly coexist

4. Enhancing real property values in parts of Manhattan with the most direct access to Central Park, and attracting further investment from developers seeking to capitalize on the popularity and desirability of such an asset

5. Impacting the revenues among various institutions operating in New York City, including the local businesses (which benefit from foot traffic and increased spending), and government coffers (the real increase in the property tax base surrounding Central Park, and the income taxes collected by employment generation)

Government leaders and city officials can take note of the positive economic impacts of Central Park on New York City. It cannot be expected that the magnitude of such impacts can be realized in Richmond, but there is the potential to spur development, increase land values, and generate business opportunities in association with the preservation of open space and development of recreational facilities. There is a general consensus that the closer homes are to open spaces, higher housing prices (and land values, accordingly) can be anticipated. For example, homes within 1,500 feet of specialty parks and facilities (community centers, for the purposes of this analysis) should witness a 8.5% gain in value, or a \$5,657 real increase in housing prices.

Communities are often confronted with the difficult decision of land use development. Often the assumption is that developing the land for residential homes offers more revenue

to the community then developing parks and open spaces. However it is not always true. After reviewing an article by John L. Crompton from the Department of Recreation, Park and Tourism Sciences at Texas A&M University, “The Impact Of Parks And Open Spaces On Property Values,” we believe that preserving open space can be a less expensive alternative to development. Actually, a number of communities have elected to purchase park and open space land, rather than allow it to be used for residential development, because this reduces the net tax deficit for their residents, which would occur if new homes were built on that land.

In the article, the author conducted the analysis by using the Proximate Principle, which is the market value of properties located proximate to a park or open space (POS), determining that land values are frequently higher than comparable properties located elsewhere. However, this theory that provided the empirical evidence verifying the principle were naïve, reflecting the underdeveloped nature of the statistical tools and research designs available in that era. A contemporary study suggested that a positive impact of 20% on property values abutting or fronting a passive park area is a reasonable point of departure for estimating the magnitude of the impact of parks on property values. The type of park also influences the premium with passive parks generating the

greatest premium, while properties adjacent to an active park may decline in value, in addition to the noise, congestion, et al. emanating from active use parks. The premiums that people are prepared to pay to be proximate to a park or open space is influenced by the available supply, if such amenities are relatively abundant, then the premiums will likely be relatively small or non-existent. The author also addressed that factors like green space, ambiance, and aesthetic appeal have a further attraction by analyzing the Golf Course Community which contained approximately 1,000 residents, while 70% of the residents don’t play golf. He stated at last that park and open space can help to reduce taxes as well.

In the study area, as aforementioned, there are no open space acreage areas, community parks, regional parks, or linear parks, leaving great deficits; most parts of the study area are out of the service radius. So we figured out the focus for park development for such a small place should be on pocket parks, neighborhood parks, and special use areas. Our suggestion for this part is to use the limited funding on preserving and developing the current parks, especially utilizing ample special use areas, such as to combine them with pocket parks, neighborhood parks, and community centers. This will contribute to the increasing of the housing value and general appeal in the study area.

D-9: National Recreation and Park Association Maintenance Standards

NRPA standards identify six levels of maintenance that vary from highest (1) to lowest (6). Level 2 is the “norm” one expects to see on a regular, recurring basis, and is the NRPA recommended level for most park areas. The City of Auburn, Indiana, published a guide to these standards which includes the following categories:

- Turf Care. Grass cut every 7 to 9 working days. Aeration as required and as time and resources permit. Athletic field irrigation.
- Weed control is applied to problematic areas only. Funding levels do not permit a system-wide herbicide program.
- Fertilizer. Adequate fertilizer level to ensure that all plant materials are healthy and growing vigorously.
- Litter Control. Minimum once per day, five days per week.
- Pruning. Usually done at least once per season unless species planted dictate more frequent attention.
- Disease and Insect Control. Usually done when disease or insects are inflicting noticeable damage, is reducing vigor of plant material, or could be considered a bother to the public. Some

preventative measures may be used, such as systematic chemical treatments.

- Snow Removal. Snow removed by noon the day following snowfall.
- Surfaces. Should be cleaned, repaired, repainted, or replaced when their appearances have noticeably deteriorated.
- Repairs. Should be done whenever safety, function, or appearance is in question.
- Inspections. Inspection should be conducted by some staff member at least once a day when regular staff is scheduled.

SECTION 7

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Action Plan: Residential

	2012				MONTH																																			
	F e b	M a r	A p r	M a y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
GOAL 1: Diversify housing type & tenure																																								
Objective 1.1: Increase R-6 zoning																																								
Action 1: Identify potential parcels																																								
Action 2: Public participation																																								
Action 3: Re-Zoning Process																																								
Objective 1.2: Housing opportunity area																																								
Action 1: Identify potential parcels																																								
Action 2: Public participation																																								
Action 3: Re-Zoning Process																																								
Objective 1.3: Neighborhood in bloom impact																																								
Action 1: Public participation																																								
Action 2: Recruit private investors																																								
Action 3: Homeownership program for vacant lots																																								
GOAL 2: Quality housing stock																																								
Objective 2.1: Improve/re-develop blighted areas																																								
Action 1: Identify clusters w/ extreme blight																																								
Action 2: Building code enforcement																																								
Action 3: Streamline & utilize delinquent tax sale																																								

Action Plan: Industrial Team

	2012				Month																																				
	F e b	M a r	A p r	M a y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
Goal 1: Create a Workforce Development Program catered to the needs of target industries																																									
Objective: Establish a technical school network in the corridor																																									
Apply for Federal Work Force Training Grants such as the Workforce Innovation Fund																																									
Establish an apprenticeship program with local institutions using company representatives in curriculum development and staffing																																									
Create a Technical Education Center focused on target industry labor needs																																									
Objective: Encourage enrollment in Technical School of local Richmond residents																																									
Market technical education center for Metro Richmond, Virginia residents																																									
Offer enrollment flexibility in regards to types of courses and scheduling																																									
Subsidize technical center tuition for Metro Richmond, Virginia residents																																									
Goal 2: Attract Advanced Manufacturing																																									
Objective: Increase access to Interstates, Airport and Port of Richmond																																									
Reduce Industrial Vehicle Toll Rate for Pocahontas Parkway																																									
Widen area of Bells Road between Jefferson Davis Highway and Commerce Road																																									
Improve Walmsley Blvd. connection to Jefferson Davis Highway																																									
Objective: Integrate high-tech infrastructure																																									
Increase availability of Broadband Access for business																																									

Action Plan: Green & Open Space

	2012				Month																																											
	F e b	M a r	A p r	M a y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36								
Goal 1: Improve quality and increase amount of green and open space.																																																
Objective: Foster relationship between community groups and City government to ensure that existing open spaces are maintained at NRPA Level 2 Care.																																																
Action: Inventory and evaluation of pocket and neighborhood parks.																																																
Action: Make necessary improvements to open space.																																																
Action: Develop bi-monthly plan for inspection and maintenance.																																																
Action: Develop marketing campaign and install signage for community awareness of open space standards.																																																
Objective: Increase the amount of pocket and neighborhood park space to account for deficits in the study area.																																																
Action: Install pocket park at 22nd & Fairfax; neighborhood park at Maury & 15th																																																
Action: Pocket parks at Ernest Road and Springs & Columbia; Neighborhood parks at Mimosa & Overlook, Colby Lane, and Castlewood & Lamberts																																																
Objective: Explore possibility of installing additional green and open spaces, such as regional parks, linear parks, and greenways, to establish connection with regional green and open spaces.																																																
Action: Coordinate research team to assess possible connections using trails, bike paths, or other linkages.																																																
Goal 2: Improve quality of existing park facilities and increase amount of facilities.																																																
Objective: Develop initiative to clean up and repair existing playgrounds, atheletic and other park amenities, and review damaged or inadequate facilities for possible removal.																																																
Action: Take an inventory and evaluate conditions of park facilities.																																																

