

# Appendices

## City of Harrisonburg

Comprehensive Housing  
Assessment and Market Study

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# Appendix A: Median Household Income, Area Median Income and ALICE Household Income

In the study, there are several references to income levels including median household income as defined by the American Community Survey, and the specialized definitions of area median income (AMI) and ALICE income threshold, determined by the Department of Housing and Urban Development (HUD) and the United Way, respectively.

## MEDIAN HOUSEHOLD INCOME

Median household income is determined by the American Community Survey (ACS) and is the household income of the median household. This means that half of households have higher incomes and half of households have incomes below the reported value. ACS data reports the median household income down to the nearest dollar (i.e. the ACS does not round the median household income to an even amount). The 2018 median household income for Harrisonburg was \$43,893. *Median household income is not dependent on household size.*

## AREA MEDIAN INCOME

The term Area Median Income (AMI) is used throughout the study. AMI for a jurisdiction is determined by HUD and *includes adjustments in income based on household size*. Throughout the study, 100% AMI refers to the area median income for a household of four. Per HUD methodology, AMI is rounded to the nearest \$100. Because HUD uses AMI to set income limits for income-restricted units, HUD updates each jurisdiction’s AMI on an annual basis. The AMI in Harrisonburg in 2017, 2018, 2019 and 2020 were:

Figure 1 Harrisonburg Area Median Income Since 2017

Year	Area Median Income (AMI)
2017	\$64,700
2018	\$62,500
2019	\$70,700
2020	\$71,900

Source: HUD

## ALICE INCOME THRESHOLDS

The United Way ALICE framework provides an estimate for the costs that families face to meet basic necessities such as housing, transportation, food, health care, childcare, and a basic smartphone plan. ALICE workers—who are Asset Limited, Income Constrained, Employed—earn more than the poverty level but less than a basic cost of living and are employed across industries such as construction, education, service, and caretaking. In 2018, the United Way estimates that the ALICE income threshold to meet basic expenses for a family of two adults and two children in Harrisonburg is \$60,000.

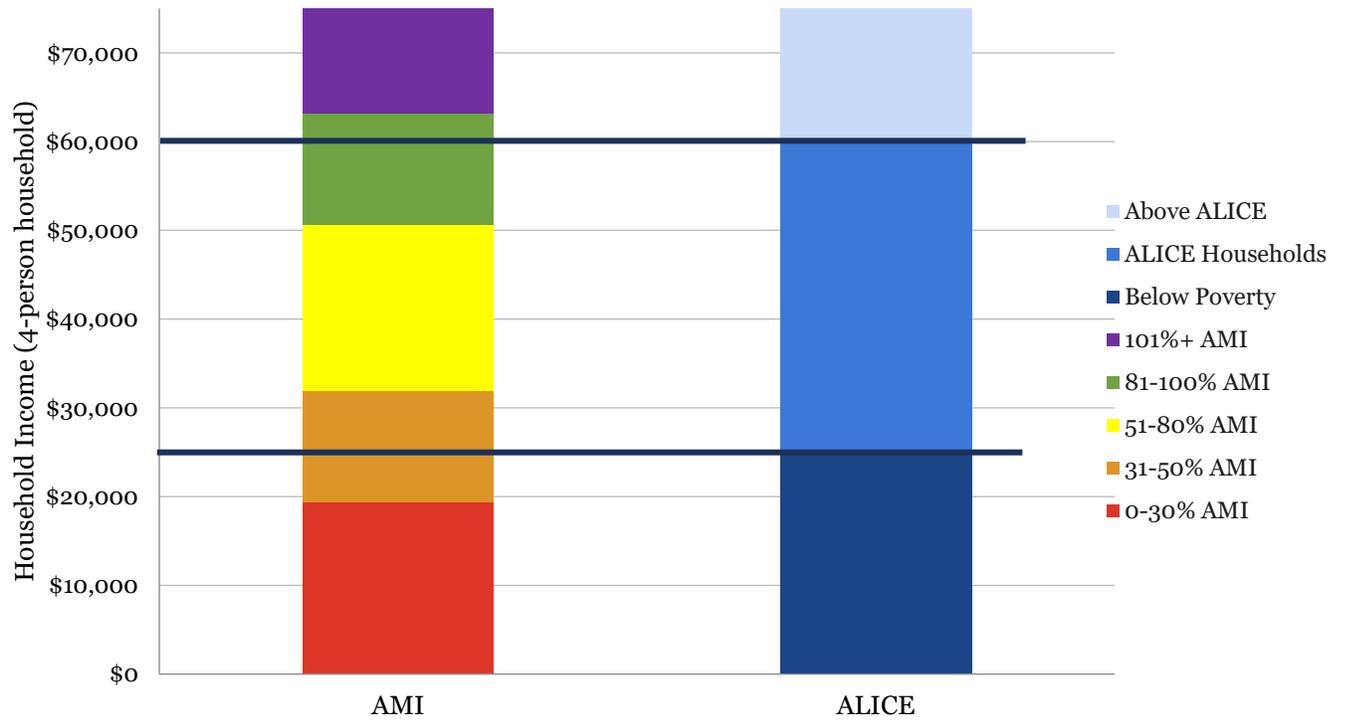
## COMPARISON OF AREA MEDIAN INCOME AND ALICE INCOME THRESHOLDS

The study makes use of the 2013-2017 Comprehensive Housing Affordability Strategy (CHAS) dataset, which is a custom tabulation of ACS data developed for use by HUD. CHAS data classifies owner and renter households by AMI tier (i.e. ranges of AMI). CHAS income thresholds in 2017 for Harrisonburg for a four-person household are as follows:

- 0-30% AMI: household income under \$19,410
- 31-50% AMI: \$19,411 to \$32,350
- 51-80% AMI: \$32,351 to \$51,760
- 81-100% AMI: \$51,761 to \$64,700
- 101%+ AMI: above \$64,700

The income breakpoints for households of four persons living below the poverty level and ALICE households do not align with AMI income tiers. The following graph compares the AMI tiers and the ALICE income range.

Figure 2 Comparison of AMI and ALICE Income Thresholds for 4-Person Households



Source: United Way; 2013-2017 CHAS

## Appendix B: Market Typologies

The Market Typologies are composed of two parts - the Access to Amenities Index and the Market Activity Index. Each of these two components themselves are composed of multiple elements as described below. In all cases, each block group in Harrisonburg is compared to all of Harrisonburg's other block groups and *not* the Commonwealth or the nation. Because of this, some areas will necessarily be below the median and other above the median because there are variations within Harrisonburg that are highlighted using the described methodology. For example, an area being labeled as "Lower Amenity Access" does not necessarily mean that there are no amenities in that location but rather that within the City itself, this block group was below the median. A block group labeled as "Lower Amenity Access" area might have access to one or two parks within walking distance whereas other block groups may have access to four or more parks or recreation facilities. Both block groups are "good" in that there is access to parks but some block groups will be above the median while others below the median. The same is true for other indices as related to jobs, transit and schools.

### ACCESS TO AMENITIES INDEX

The composite Access to Amenities Index is comprised of four parts:

1. Education Index
2. Jobs Proximity Index
3. Transit Index
4. Health Index

These measures were chosen because they are some of the primary factors that affect the short and long-term access to amenities and quality of life – access to jobs and transportation to get to employment opportunities in the present day, access to quality education to ensure future success, and access to parks, recreation and fresh food for movement and health, providing short- and long-term benefits.

The four individual scores are were weighted equally and averaged. These four individual scores are described below.

#### Education Index

The education score was determined using Great Schools data ([www.greatschools.org](http://www.greatschools.org)). It is acknowledged that there are many ways to measure the degree to which schools are successful in educating students. However, a full analysis of school performance is beyond the scope of this housing study.

The following data were included in the calculations:

1. Percentage of all students in the school who are proficient in math;
2. Percentage of all students in the school who are proficient in reading;
3. The difference in the percentage of non-low-income<sup>1</sup> students who are proficient in math and the percentage of low-income students and who are proficient in math; and

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<sup>1</sup> According to Great Schools, a low-income student is one who qualifies for free or reduced lunch.

4. The difference in the percentage of non-low-income students who are proficient in reading and the percentage of low-income students and who are proficient in reading.

Each of the four data points listed above were normalized between zero and one, with one being the preferred score. For example, it is preferable for a higher percentage of students to be proficient in math and reading but for the difference in proficiency to be small among low-income versus non-low-income students. A score of 0.5 would indicate that the school ranked exactly in the middle of the best and worst performing schools; a score of 0.5 does not indicate the median. The four normalized scores were averaged and then normalized again (between zero and one) for easier comparison among schools.

Note that the highest performing public elementary school in Harrisonburg has a Great Schools rank of 3 on a 1-10 scale, indicating that Harrisonburg public schools are performing below the state average according to Great Schools. Because all schools are rated the same overall score according to Great Schools, it indicates that all elementary schools are similar in performance, particularly when compared to all elementary schools in Virginia. *The Education Index used in this housing study is designed to highlight differences among schools, even when those schools are similar to each other.* This is why the map shows that there are Highest, Higher, Lower and Lowest performing schools even when all schools are similar as determined by Great Schools.

Figure 3 Great Schools Data for Harrisonburg Elementary Schools

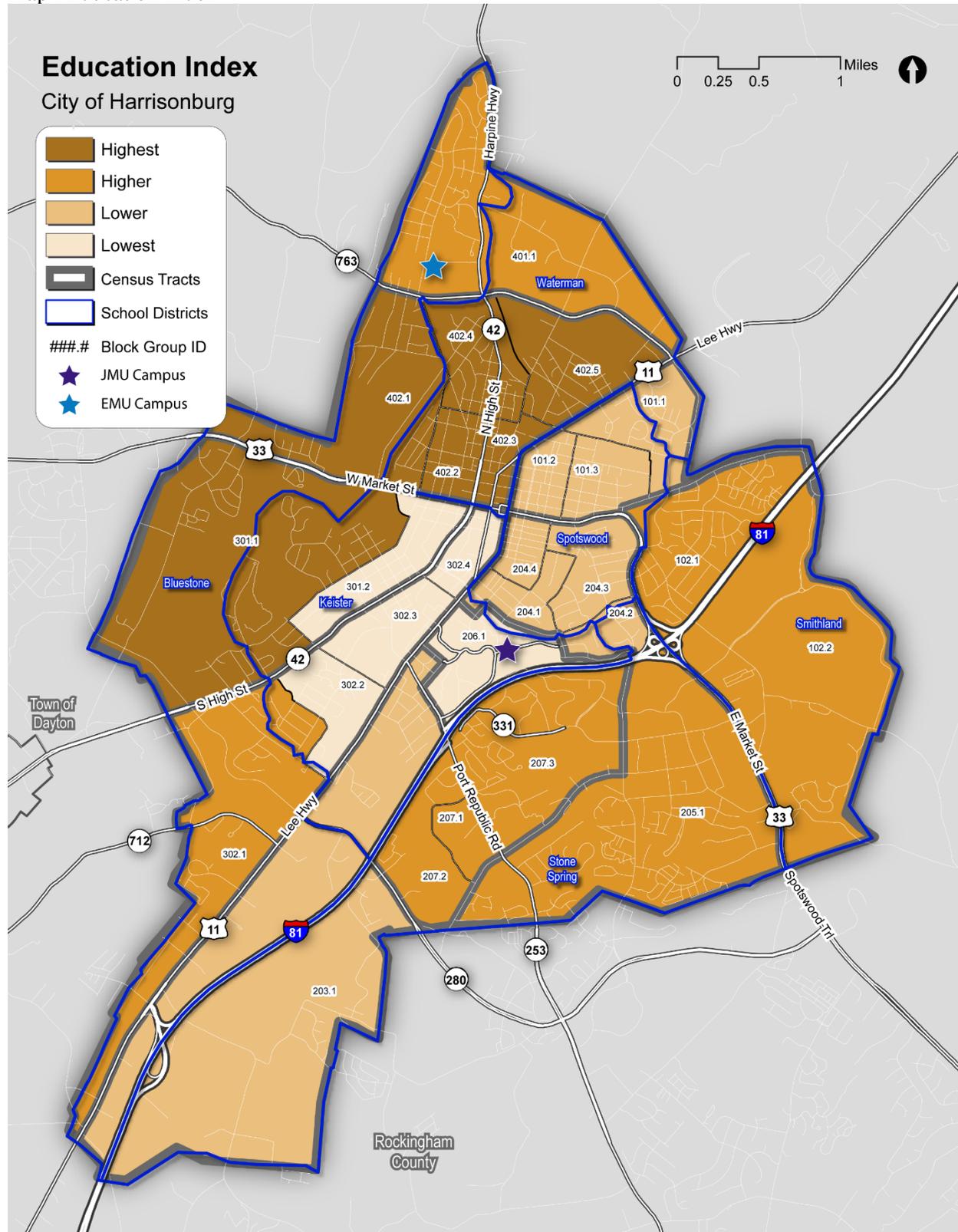
	Percentage of Students Proficient in Math				Percentage of Students Proficient in Reading			
	All Students	Low-Income Students	Not Low-Income Students	Difference between Low-Income and non-Low-Income Students	All Students	Low-Income Students	Not Low-Income Students	Difference between Low-Income and non-Low-Income Students
Bluestone Elementary	76	73	83	10	63	52	86	34
Keister Elementary	52	43	89	46	50	34	86	52
Smithland Elementary	71	67	83	16	56	48	79	31
Spotswood Elementary	58	56	75	19	42	38	83	45
Stone Spring Elementary	70	65	81	16	59	45	84	39
Waterman Elementary	73	70	83	13	62	58	78	20

Source: Great Schools

School district boundaries and block group boundaries do not align exactly. To align the school data to the block group level, the percentage of each block group's area that is located in each elementary school district boundary was determined. Using the score for each elementary school and the total area of each block group in each elementary school boundary, an education score for each block group was determined. This methodology assumes that elementary-aged children live uniformly throughout each block group, which is known to not be likely, but there is no data source available that would indicate where elementary-aged children live within a block group to be able to assign children to the proper school.

The data was mapped by quartile and indicate areas of highest, higher, lower and lowest access by block group.

Map 1 Education Index



Source: Great Schools

## Jobs Proximity Index

The Jobs Proximity Index was derived using HUD's methodology.<sup>2</sup> It quantifies the accessibility of a given block group as a function of its distance to all job locations within the area and factors in competition for those jobs (i.e. how many workers are nearby). The score is governed by the following equation:

$$A_i = \frac{\sum_{j=1}^n \frac{E_j}{d_{i,j}^2}}{\sum_{j=1}^n \frac{L_j}{d_{i,j}^2}}$$

Where  $A_i$  is the Jobs Proximity score for a given block group,  $E_j$  is the number of jobs in a block group,  $L_j$  is the number of workers in a block group, and  $d_{i,j}^2$  is the square of the distance between two block groups.

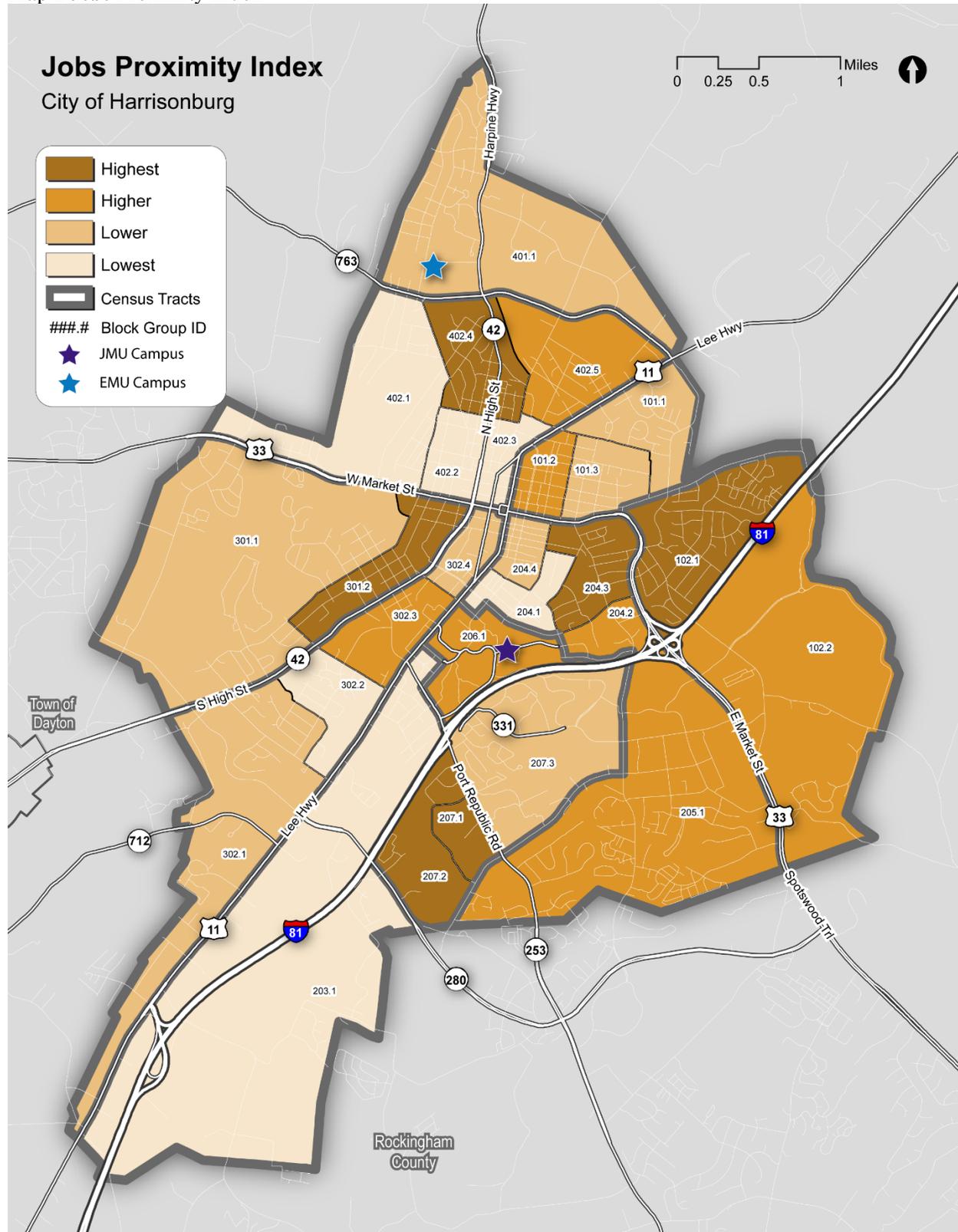
The data was mapped by quartile and indicate areas of highest, higher, lower and lowest access by block group.

The data sources used were Longitudinal Employer-Household Dynamics (LEHD) for 2017. This particular year does not include federal workers. Because of the proximity of Harrisonburg to Washington DC, table S0801 from the American Community Survey (ACS) was used to verify that only 1.1% of all workers commute to a job outside of the state. While some workers may commute to a federal job located within Virginia, there is no way to determine this with ACS or LEHD data. The 2015 LEHD data does include federal workers though 1) the data is outdated and 2) the data for federal workers was from a previous White House administration and there have been shifts in funding priorities for various federal government offices. Additionally, there has been a net gain of both workers in jobs on comparing the 2015 and 2017 data, which means that the increase is actually larger than the difference because the 2015 data includes federal works that are excluded in 2017.

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<sup>2</sup> [http://hudgis-hud.opendata.arcgis.com/datasets/4e2ef54b88084fb5a2554281b2d89a8b\\_o](http://hudgis-hud.opendata.arcgis.com/datasets/4e2ef54b88084fb5a2554281b2d89a8b_o)

Map 2 Jobs Proximity Index



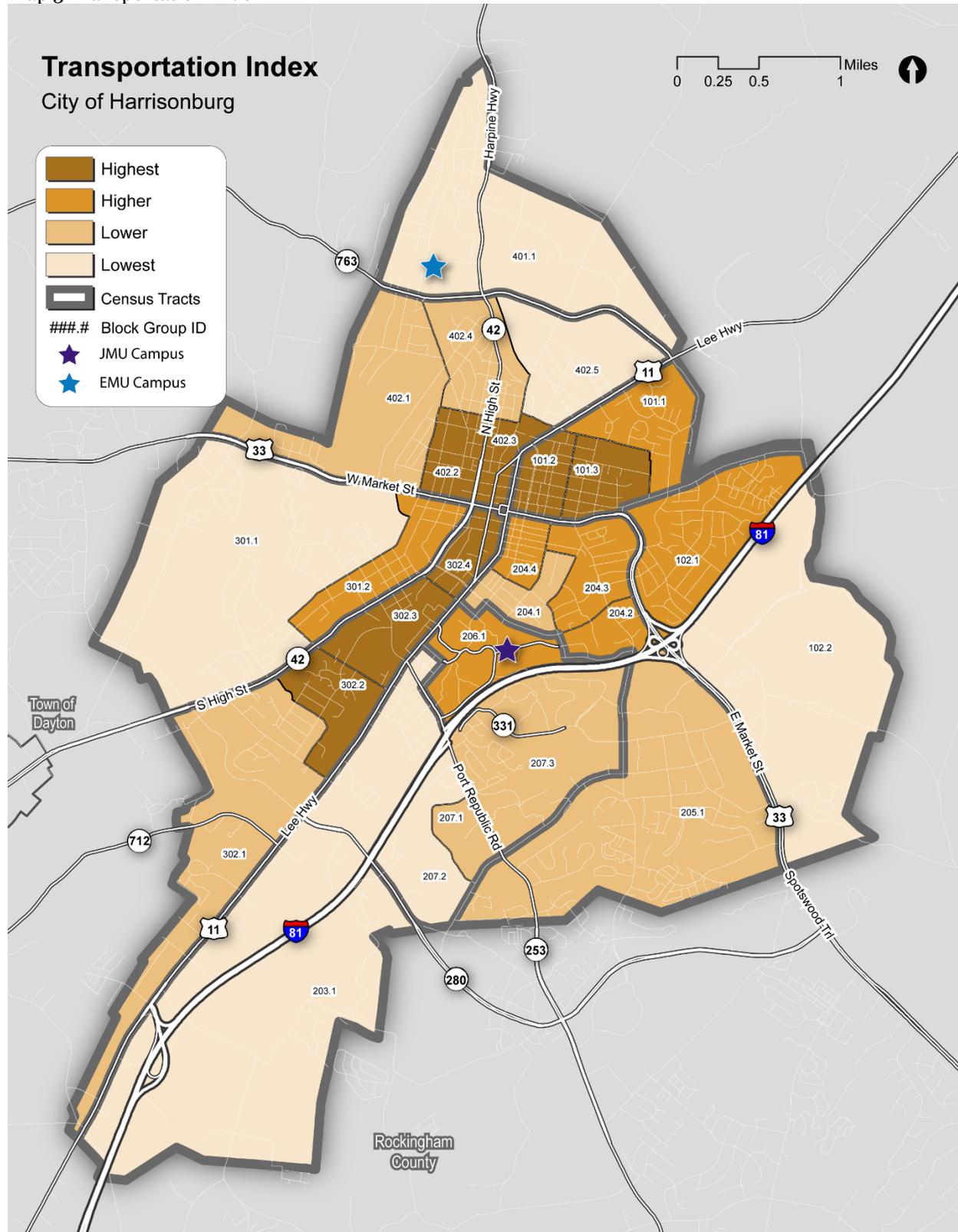
Source: Longitudinal Employer-Household Dynamics (LEHD), 2017

## Transit Index

The Transit Index is a measure of the percentage of the land area of each block group that is within a 1/4 mile buffer of any City bus stop and is used as a way to measure access to public transit. A quarter mile was chosen because this is the accepted distance that most people are willing to walk to access public transit. Block groups with a greater proportion of area that is located within a buffer scores higher on this index. Block groups were not awarded more points by having multiple bus stops for which the buffers overlap largely because there are few (four) transfer stops so having access to a different bus stop on the same bus route is not an appreciable benefit.

The data was mapped by quartile and indicate areas of highest, higher, lower and lowest access by block group.

Map 3 Transportation Index



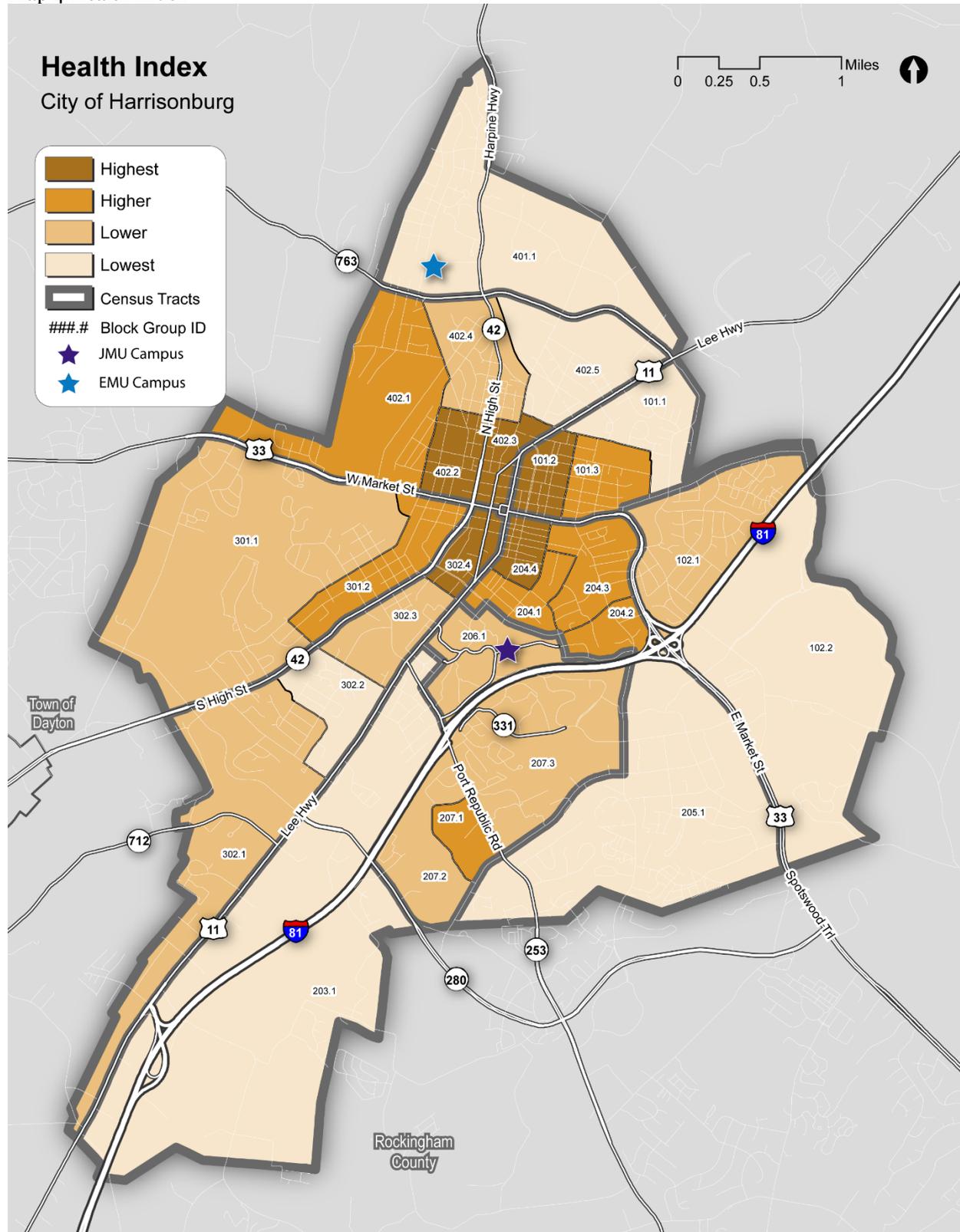
Source: City of Harrisonburg; Calculations by Mullin & Lonergan Associates, Inc. and EPR-PC

## Health Index

The Health Index is comprised of several components. A one-mile buffer was placed around all City parks, sports facilities, community centers and a ½ mile buffer around full service grocery stores that would provide access to fresh foods. In addition, one-mile buffers were placed around the EMU campus and all public elementary/middle schools because these campuses are utilized by the community as parks; residents ride bikes, use playground equipment and fields for recreation. These buffer distances were chosen because they are accepted distances that people are willing to walk to access these types of amenities. Like the transit score, the percentage of the block group's area that is located within the buffer was calculated. However, because there are appreciable benefits to having access to more than one park or grocery store or a park and a recreation center, the percentage of each block group's area that was within zero to seven buffers was calculated. Areas with greater access to more amenities score higher in each of the categories. The scores for parks, sports facilities and community centers accounted for half of the overall Health Score and access to fresh foods via full service grocery stores accounted for the balance of the score.

The data for parks and recreation facilities was provided by the City of Harrisonburg while the grocery store data was pulled from PolicyMap. The data was mapped by quartile and indicate areas of highest, higher, lower and lowest access by block group.

Map 4 Health Index



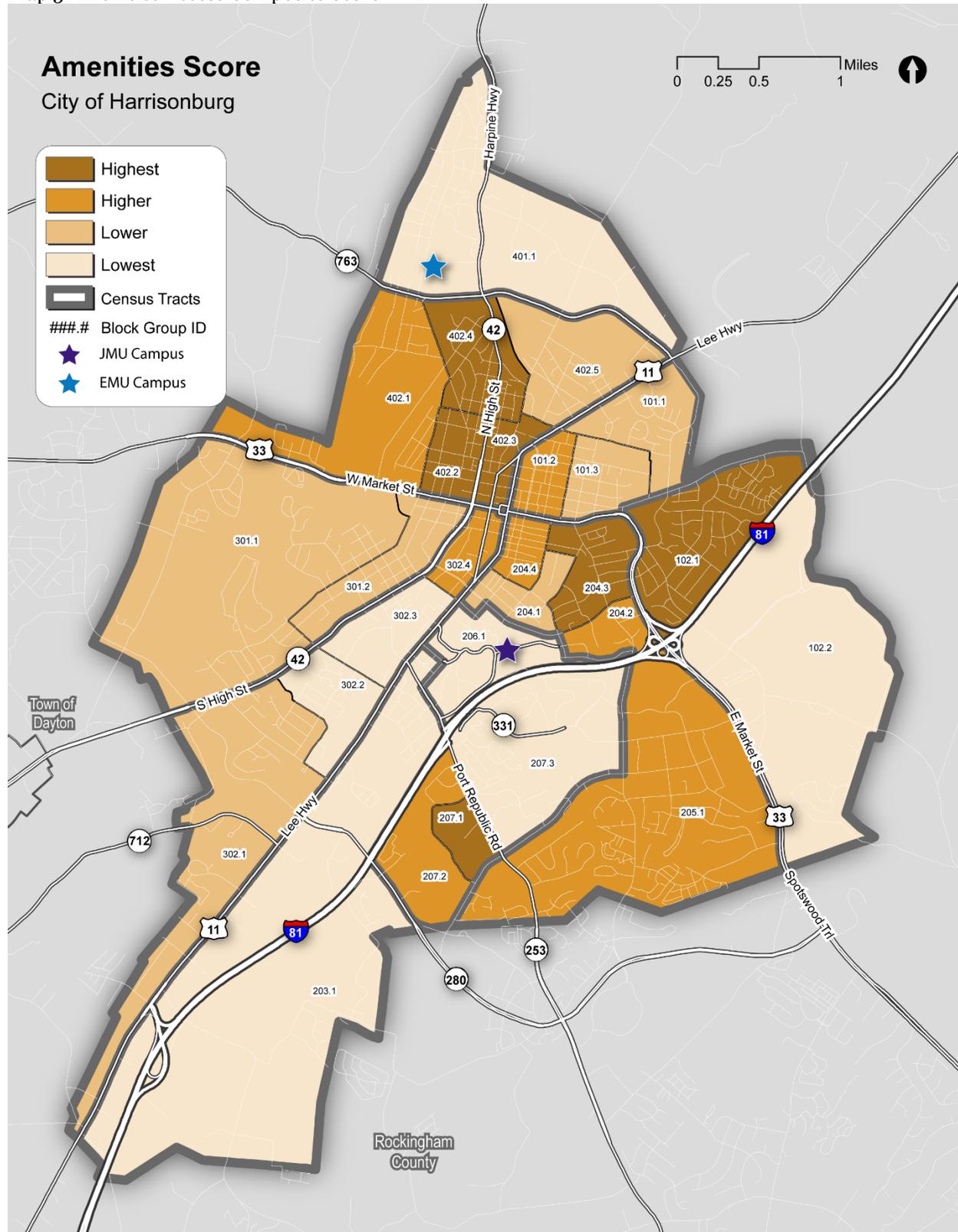
Source: City of Harrisonburg and PolicyMap; Calculations by Mullin & Lonergan Associates, Inc. and EPR-PC

## Access to Amenities Composite Index

Each of the four component indices – Education, Jobs Proximity, Transit Access and Health – were weighted equally to determine an Access to Amenities composite score for each block group. The resulting score was mapped by quartile and indicate areas of highest, higher, lower and lowest access by block group.

In the creation of the final market typologies, described below, the classifications will be simplified to Higher and Lower Access to Amenities scores; block groups that are above and below the median will be considered Higher and Lower Access to Amenities, respectively. The quartile maps are included to allow for nuance in discussions and understanding but the inclusion of quartiles would result in 16 market typologies, which would not be suitable for a housing study for a city the size of Harrisonburg.

Map 5 Amenities Access Composite Score



Source: Great Schools, City of Harrisonburg, PolicyMap, LEHD

## MARKET ACTIVITY INDEX

The Market Activity Index uses Multiple Listing Service (MLS) data, which is transaction level data for unit sales between January 2018 and a portion of July 2020.

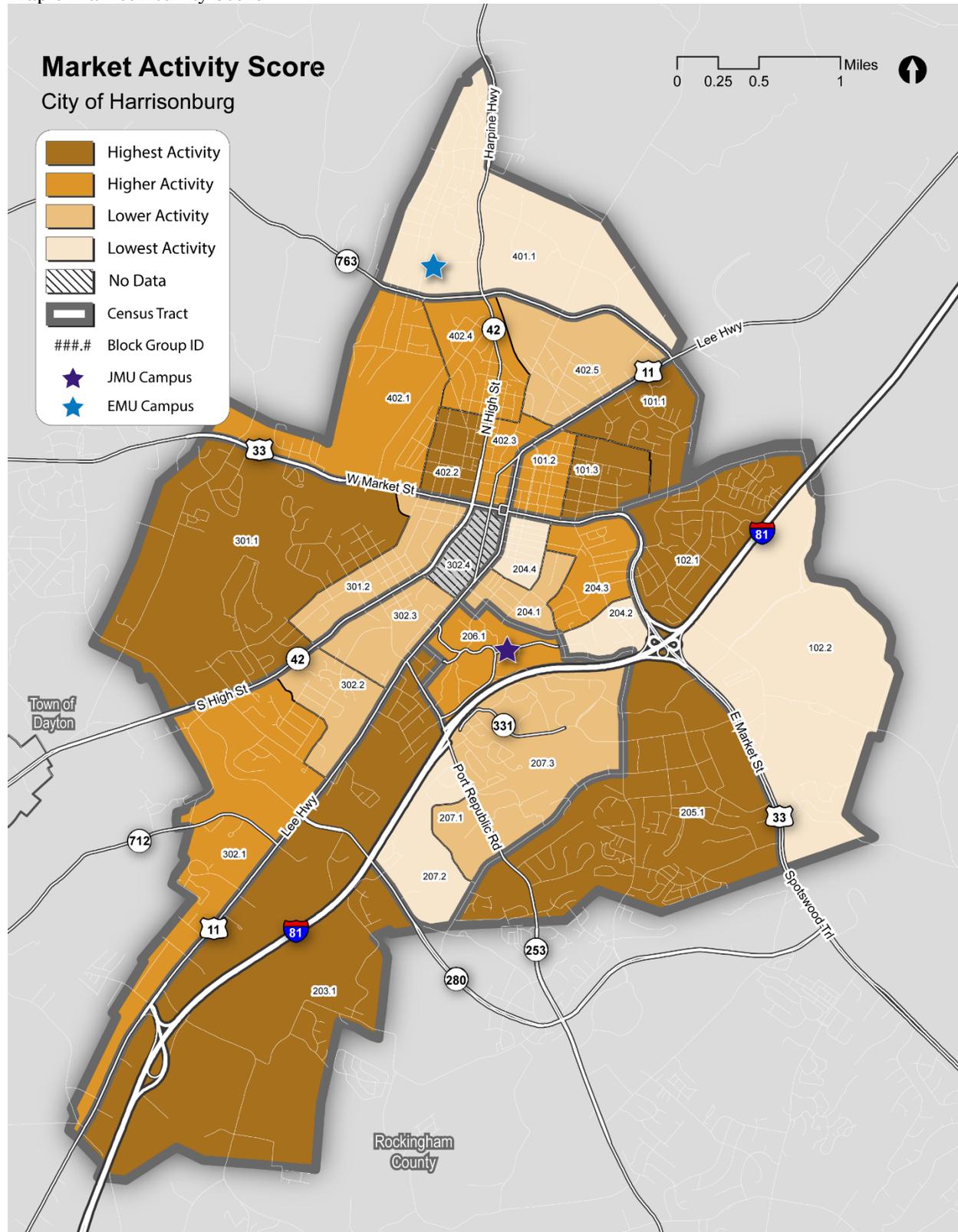
The variables used in calculating the Index includes:

1. Ratio of the sale price to the list price; higher ratios are scored higher.
2. Number of Days on Market; fewer days on the market are scored higher.
3. Percent change in the number of sales from 2018-2019; higher increases in sales are scored higher. The data from 2020 was not used for the following reasons: it is a partial year making direct comparisons difficult and Covid-19 was declared a pandemic in March, traditionally a busy time for home sales. For any block group that had fewer than five sales in either 2018 or 2019, that block group was assigned a percent change of zero, indicating status quo. For example, if there was one sale one year and no sales the following year, this indicates a 100% decrease which is not a reasonable assumption given the small sample size.
4. Percentage of the total sales from each block group; higher percentages scored higher.

All four variables were normalized from zero to one with one being highest and weighted equally to determine a Market Activity Index. One block group downtown did not have any sales data. The data was mapped by quartile.

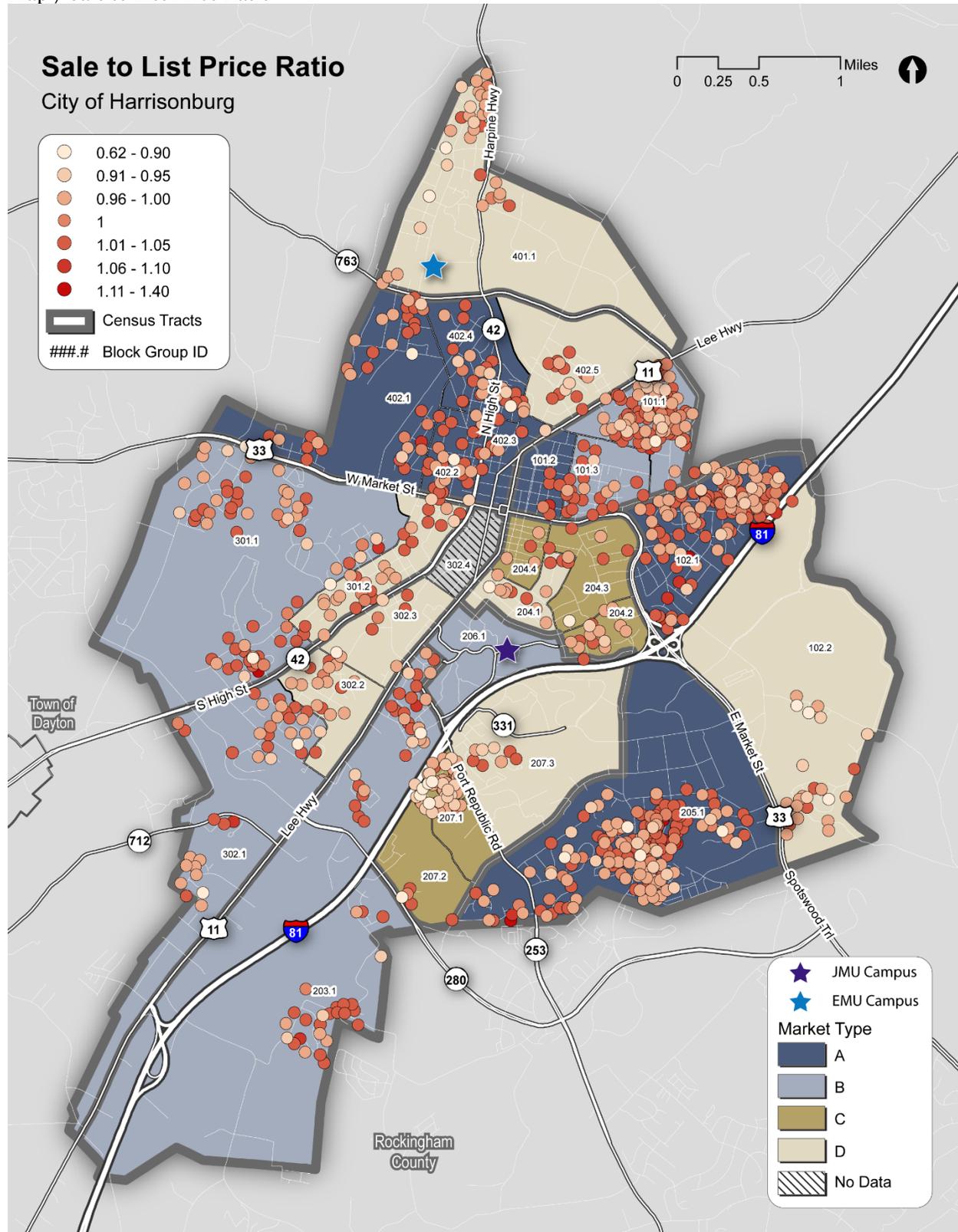
In the creation of the market typologies, the Market Activity was also simplified into two groups – those above and below the median – and are referred to as Higher or Lower Market Activity, respectively.

Map 6 Market Activity Score



Source: MLS (Jan 1, 2018 to July 13, 2020)

Map 7 Sale to List Price Ratio



Source: MLS (Jan 1, 2018 to July 13, 2020)

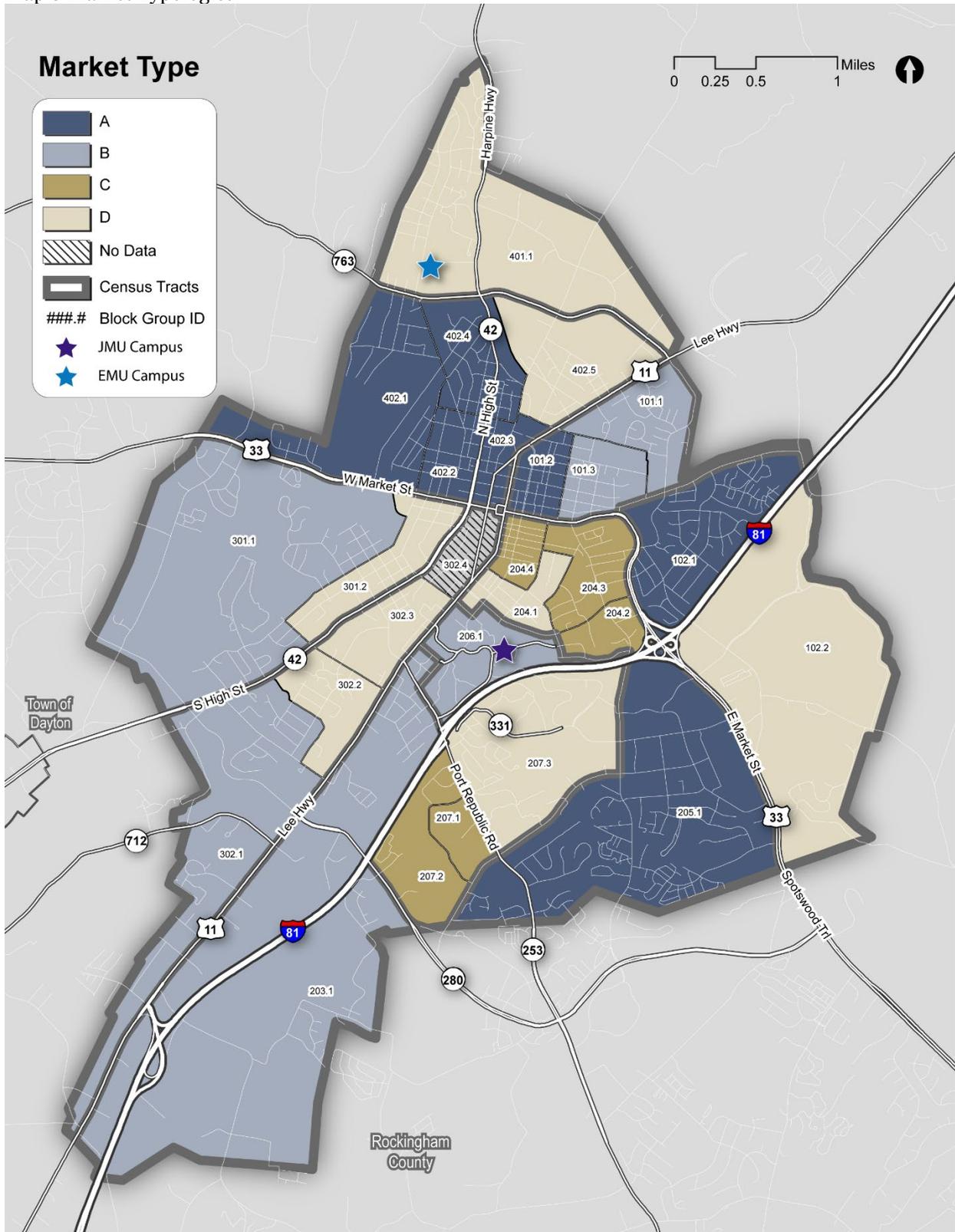
## MARKET TYPOLOGIES

There are four final market typologies based on each block group's score being above or below the median for the Market Activity Score and the Amenity Access Score:

1. Type A
2. Type B
3. Type C
4. Type D

There is also one block group with a No Data designation as there were no residential home sales in the study's time period. This block group is located downtown and is home to several government buildings.

Map 8 Market Typologies



Source: MLS, Great Schools, LEHD, City of Harrisonburg, PolicyMap

## Appendix C: American Community Survey

The following tables from the US Census Bureau were used throughout the analysis:

B25003 Tenure  
B25032 Tenure by Units in Structure  
B25037 Median Year Built by Tenure  
B25042 Tenure by Bedrooms  
B25077 Median Value  
B25088 Median Selected Monthly Owner Costs  
B01001 Sex by Age  
B01002 Median Age  
B01003 Total Population  
B02001 Race  
B11016 Household Type by Household Size  
B17001 Poverty by Age  
B19013 Median Household Income  
S1501 Educational Attainment  
S1701 Poverty Status

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# Appendix D: Cost Burden by Tenure and Among Elderly Households and Affordability by Number of Bedrooms

## OVERVIEW

Comprehensive Housing Affordability Strategy (CHAS) data was used to determine the rate of cost burden and severe cost burden by tenure among elderly households (family and non-family households). Because CHAS is a custom tabulation of ACS data for HUD, elderly is defined as age 62 and older.

## COST BURDEN BY TENURE

A household is considered cost burdened when more than 30% of household income is spent on housing costs. If a household spends more than 50% of household income on housing costs, then the household is said to be severely cost burdened. The following tables and graphs indicate the rates of cost burden, severe cost burden and no cost burden by tenure.

### Renters

In Harrisonburg, renters with incomes in the lower end of the income spectrum are not only more frequently cost burdened but also more severely cost burdened, which leaves these households less income for other necessities. Among cost burdened households, there is a peak among the 51-80% AMI households. These households may be housed in a unit that is within their tier but still be cost burdened (i.e. household income of 55% AMI but a unit that is affordable at 75% AMI).

Figure 4 Cost Burden Among Renters

Renters	Cost Burden	Severe Cost Burden	No Cost Burden	Total Households
0-30% AMI	219	2,060	331	2,610
31-50% AMI	620	755	470	1,845
51-80% AMI	980	200	905	2,085
81-100% AMI	229	0	881	1,110
101+% AMI	119	0	2,645	2,764

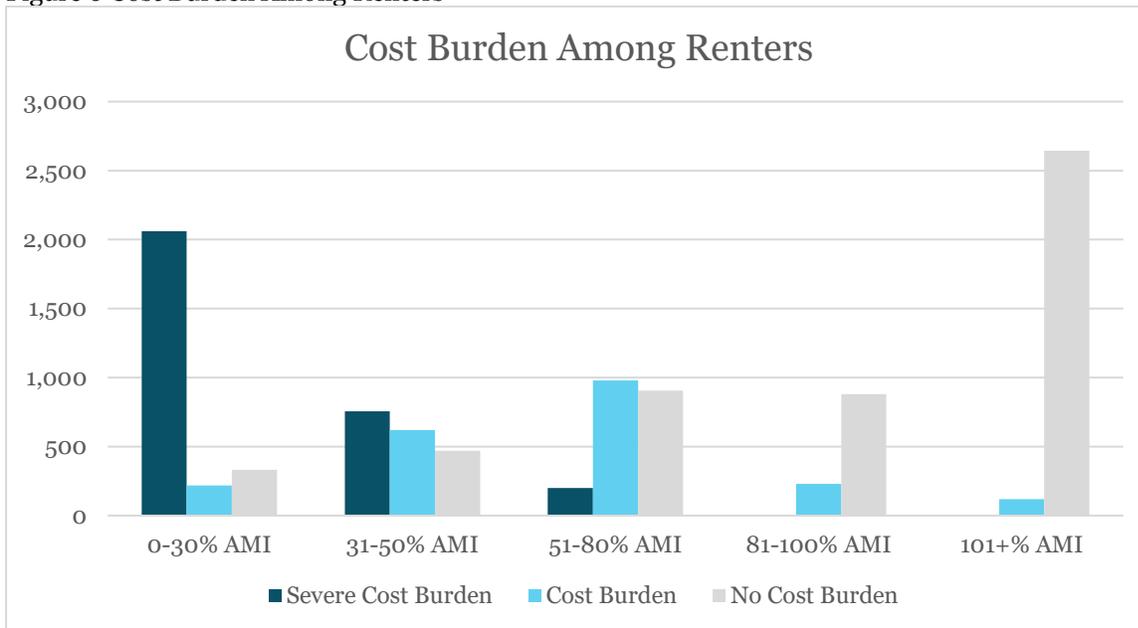
Source: 2013-2017 CHAS

Figure 5 Cost Burden Among Renters, Normalized

Renters	Cost Burden	Severe Cost Burden	No Cost Burden	Total Households
0-30% AMI	8%	79%	13%	100%
31-50% AMI	34%	41%	25%	100%
51-80% AMI	47%	10%	43%	100%
81-100% AMI	21%	0%	79%	100%
101+% AMI	4%	0%	96%	100%

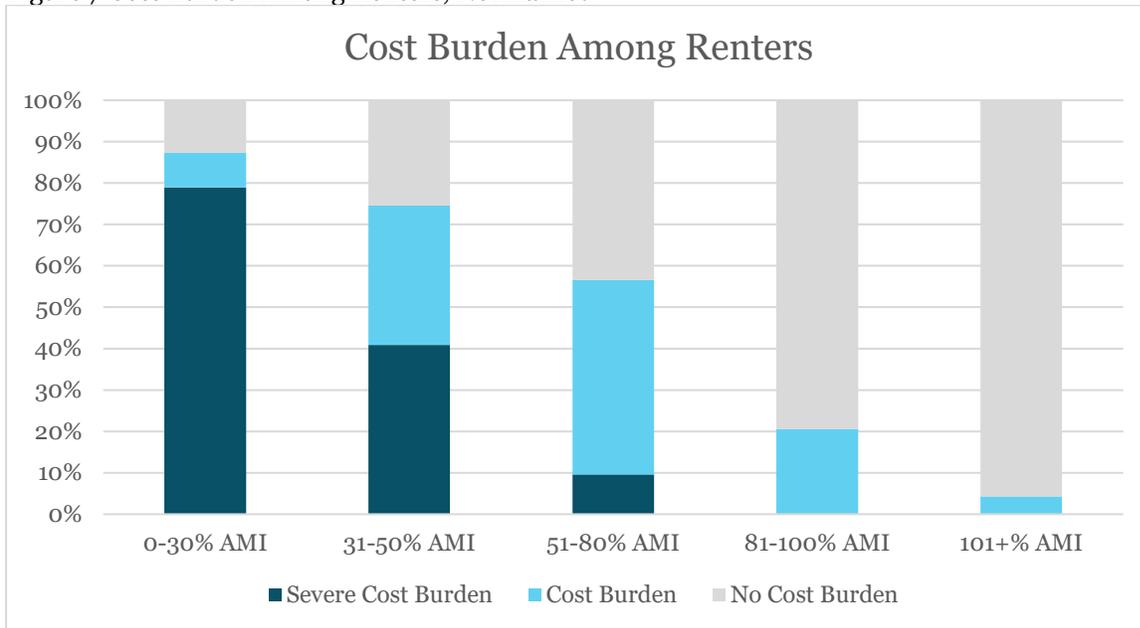
Source: 2013-2017 CHAS

Figure 6 Cost Burden Among Renters



Source: 2013-2017 CHAS

Figure 7 Cost Burden Among Renters, Normalized



Source: 2013-2017 CHAS

## Owners

The following tables and graphs illustrate cost burden and severe cost burden among owners. Limitations in the CHAS dataset do not allow for an analysis of cost burden status by mortgage status. As within the rental market, rates of severe cost burden are more prevalent among the lowest-income homeowners and cost burden peaks among households with incomes between 51-80% AMI.

Figure 8 Cost Burden Among Owners

Owners	Cost Burden	Severe Cost Burden	No Cost Burden	Total Households
0-30% AMI	60	133	87	280
31-50% AMI	95	79	210	384
51-80% AMI	294	130	440	864
81-100% AMI	169	24	471	664
101+% AMI	199	25	4,016	4,240

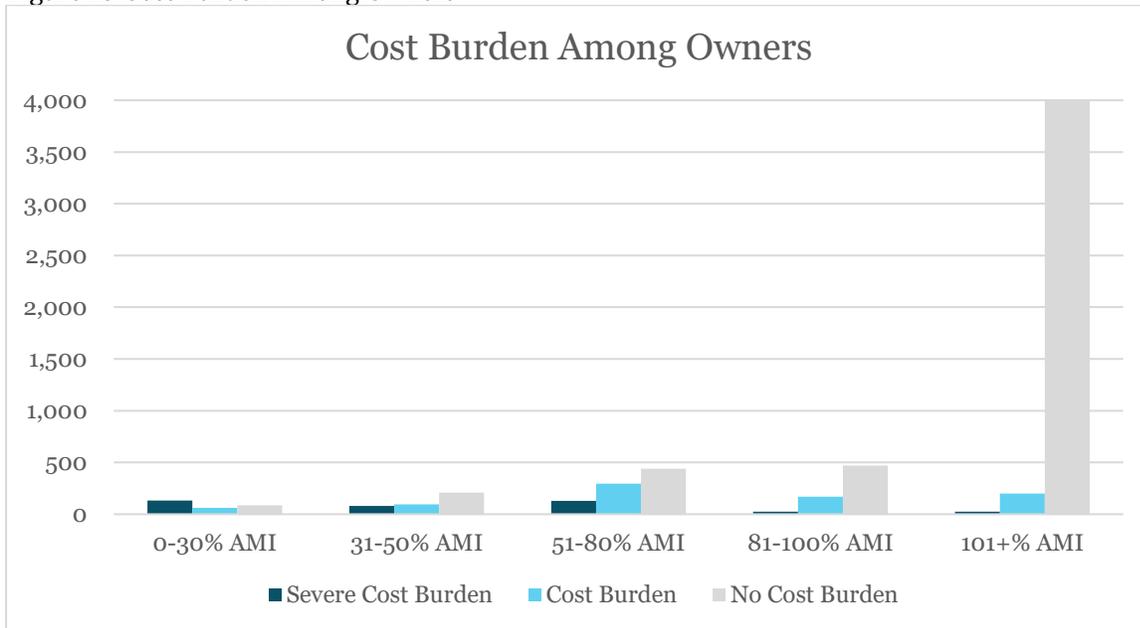
Source: 2013-2017 CHAS

Figure 9 Cost Burden Among Owners, Normalized

Owners	Cost Burden	Severe Cost Burden	No Cost Burden	Total Households
0-30% AMI	21%	48%	31%	100%
31-50% AMI	25%	21%	55%	100%
51-80% AMI	34%	15%	51%	100%
81-100% AMI	25%	4%	71%	100%
101+% AMI	5%	1%	95%	100%

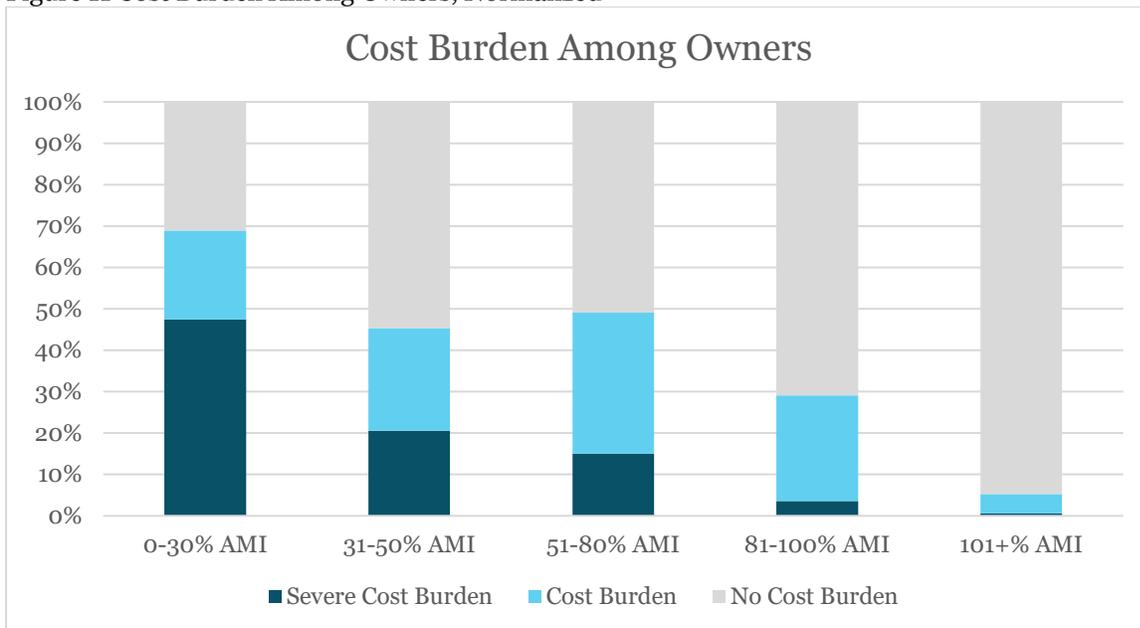
Source: 2013-2017 CHAS

Figure 10 Cost Burden Among Owners



Source: 2013-2017 CHAS

Figure 11 Cost Burden Among Owners, Normalized



Source: 2013-2017 CHAS

## COST BURDEN AMONG ELDERLY HOUSEHOLDS

CHAS includes data on cost burden status among elderly households. Cost burden status can be no cost burden, cost burden or severe cost burden.

### Renters

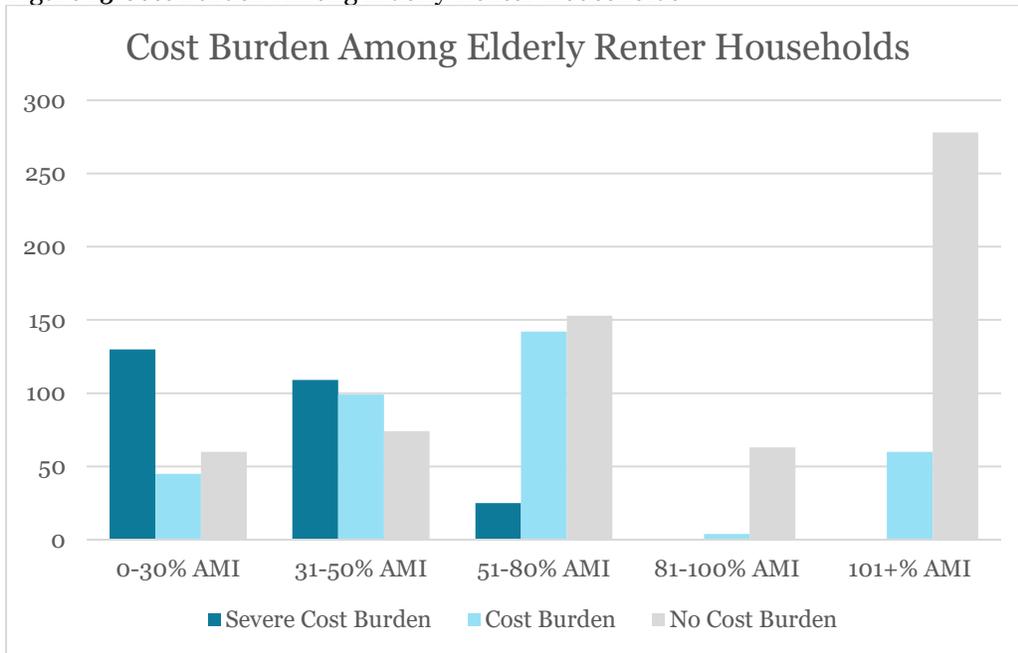
Elderly renter households, like renter households in the aggregate, experience severe cost burden at higher rates among the lowest-income households. Severe cost burden largely disappears above 50% AMI while 35% and 44% of households with income between 31-50% AMI and 51-80% AMI, respectively, remain cost burdened.

Figure 12 Cost Burden Among Elderly Renter Households

	No Cost Burden		Cost Burden		Severe Cost Burden		Total Households	
	#	%	#	%	#	%	#	%
0-30% AMI	60	26%	45	19%	130	55%	235	100%
31-50% AMI	74	26%	99	35%	109	39%	282	100%
51-80% AMI	153	48%	142	44%	25	8%	320	100%
81-100% AMI	63	94%	4	6%	0	0%	67	100%
101+% AMI	278	82%	60	18%	0	0%	338	100%

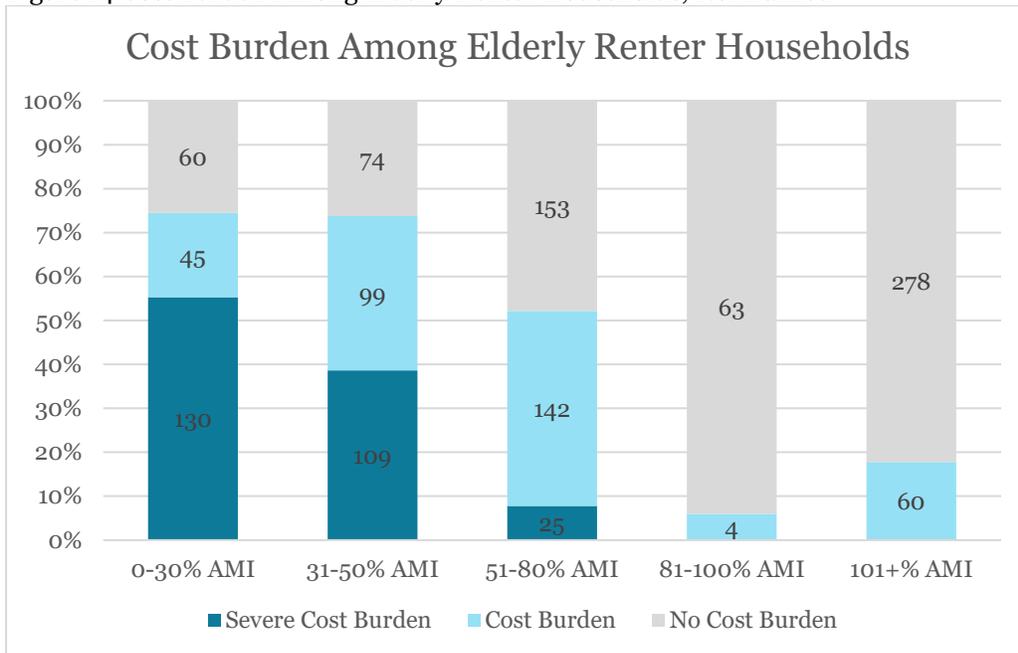
Source: CHAS 2013-2017

Figure 13 Cost Burden Among Elderly Renter Households



Source: CHAS 2013-2017

Figure 14 Cost Burden Among Elderly Renter Households, Normalized



Source: CHAS 2013-2017

## Owners

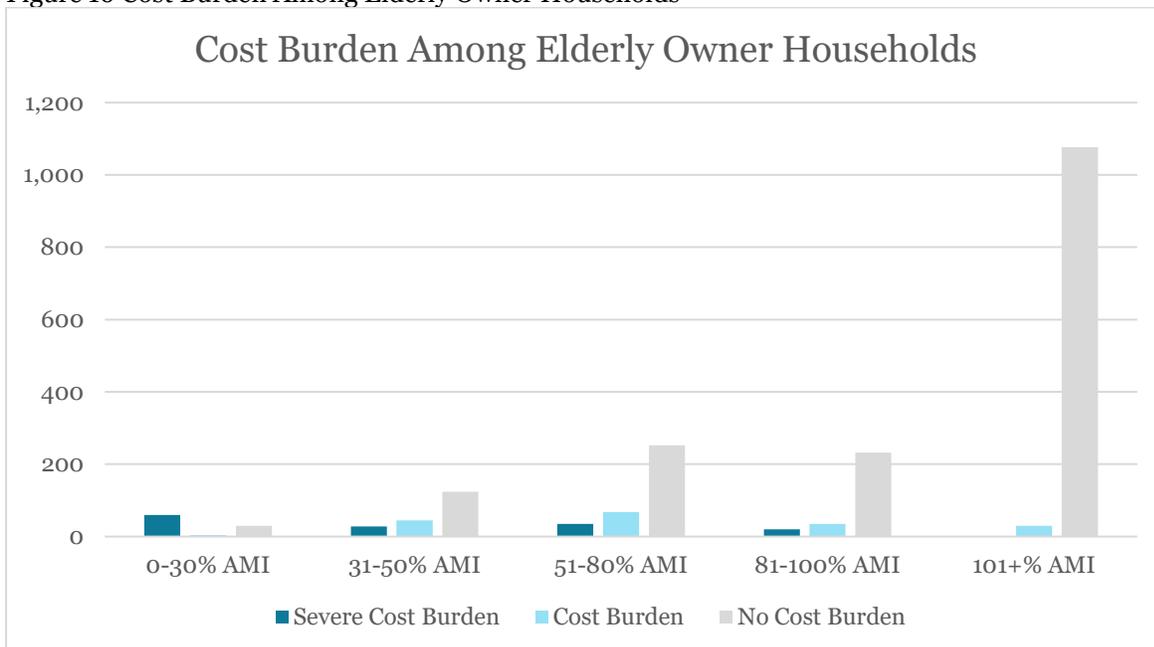
Elderly owner households, like elderly renter households, experience severe cost burden at higher rates among the lowest-income households. Severe cost burden largely disappears above 50% AMI while 23% of households with income between 31-50% AMI remain cost burdened.

Figure 15 Cost Burden Among Elderly Owner Households

	No Cost Burden		Cost Burden		Severe Cost Burden		Total Households	
	#	%	#	%	#	%	#	%
0-30% AMI	30	32%	4	4%	60	64%	94	100%
31-50% AMI	124	63%	45	23%	28	14%	197	100%
51-80% AMI	252	71%	68	19%	35	10%	355	100%
81-100% AMI	232	81%	35	12%	20	7%	287	100%
101+% AMI	1077	97%	30	3%	0	0%	1107	100%

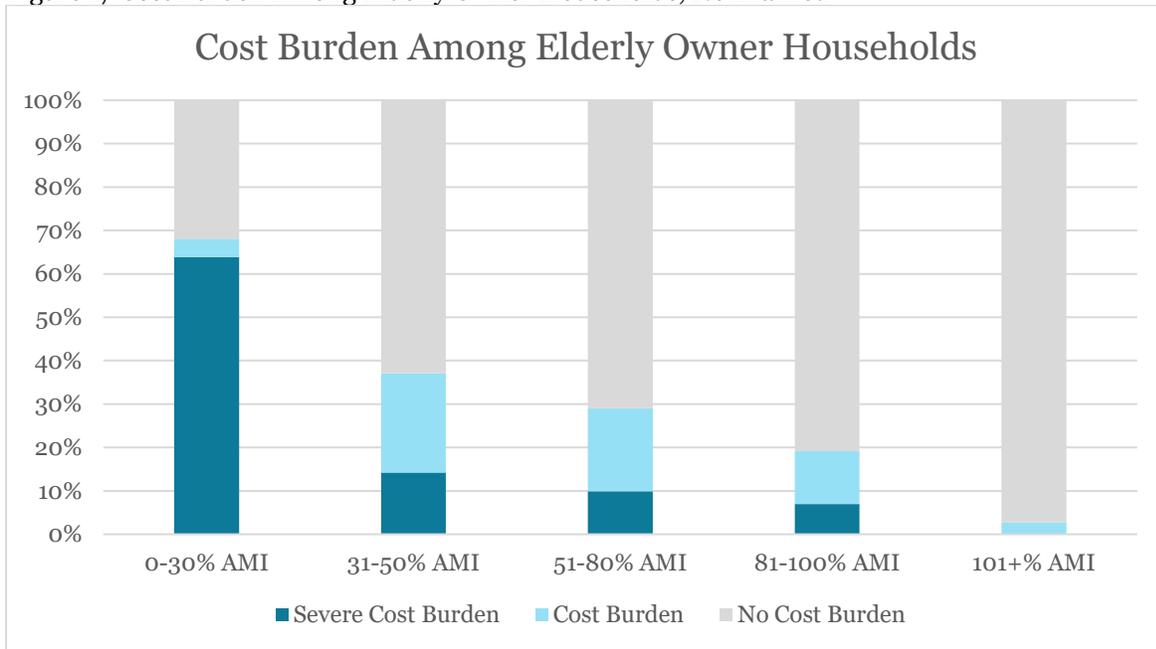
Source: CHAS 2013-2017

Figure 16 Cost Burden Among Elderly Owner Households



Source: CHAS 2013-2017

Figure 17 Cost Burden Among Elderly Owner Households, Normalized

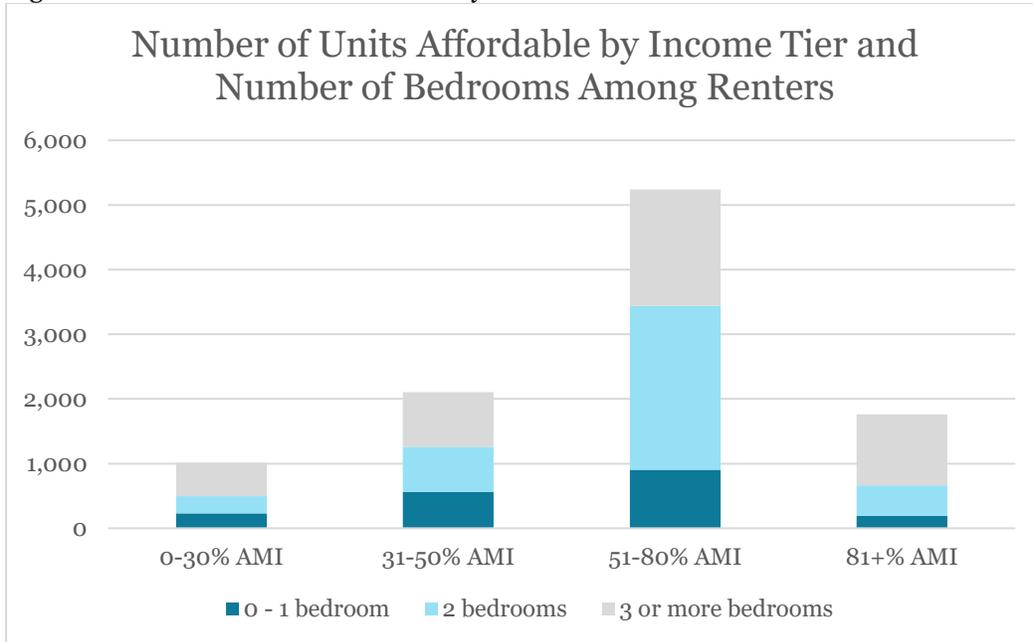


Source: CHAS 2013-2017

# AFFORDABILITY BY NUMBER OF BEDROOMS

## Renters

Figure 18 Number of Units Affordable by Income Tier and Number of Bedrooms



Source: CHAS 2013-2017

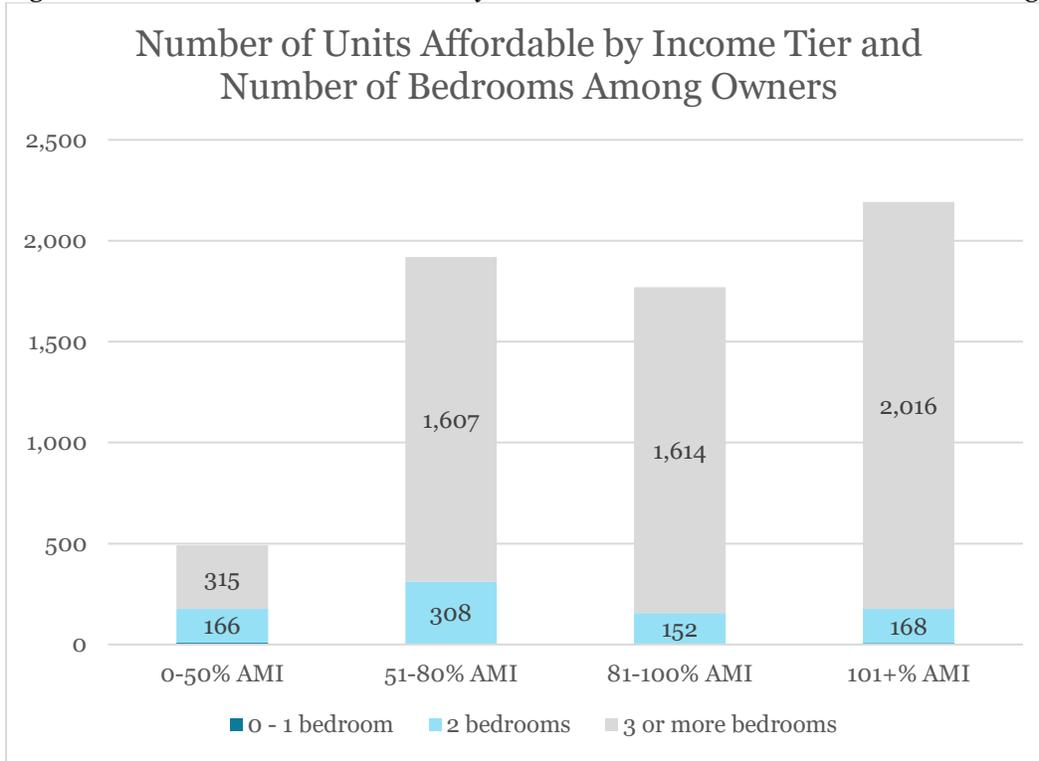
Figure 19 Table of Number of Units Affordable by Income Tier and Number of Bedrooms

	<b>0-30% AMI</b>	<b>31-50% AMI</b>	<b>51-80% AMI</b>	<b>81+% AMI</b>	<b>Percentage of All Units</b>
<b>0 - 1 bedroom</b>	230	564	905	192	19%
<b>2 bedrooms</b>	267	696	2,532	470	39%
<b>3 or more bedrooms</b>	514	846	1,801	1,101	42%
<b>Percentage of All Units</b>	10%	21%	52%	17%	

Source: CHAS 2013-2017

## Owners

Figure 20 Number of Units Affordable by Income Tier and Number of Bedrooms Among Owners



Source: CHAS 2013-2017

Figure 21 Table of Number of Units Affordable by Income Tier and Number of Bedrooms Among Owners

	<b>0-50% AMI</b>	<b>51-80% AMI</b>	<b>81-100% AMI</b>	<b>101+% AMI</b>	<b>Percentage of All Units</b>
<b>0 - 1 bedroom</b>	10	4	4	8	0%
<b>2 bedrooms</b>	166	308	152	168	12%
<b>3 or more bedrooms</b>	315	1,607	1,614	2,016	87%
<b>Percentage of All Units</b>	8%	30%	28%	34%	

Source: CHAS 2013-2017

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# Appendix E: Housing Mismatch in 2020 and 2025

## OVERVIEW

The following pages describe the methodology used in determining the Housing Mismatch in 2020 and 2025. The housing mismatch was calculated using 2013-2017 CHAS data and is determined for both renter and homeowner households in 2020 and, using projection data, for 2025. Students were also accounted for in the analysis as described in a separate appendix.

CHAS data was used to determine the number of households within an income tier and tenure (and their cost burden status) and are shown in the blue bars at right in the following bar charts. The dark blue portions indicate household cost burden while the light blue portions indicate that the household is not cost burdened. Cost burden means that the household spends more than 30% of household income on housing costs.

The height of the rainbow-colored bars in the bar charts indicate the number of units that are affordable within the specified income tier while the individual colors indicate the household income of the households that occupy those units.

## HOUSING MISMATCH

### Definition and Limitation of Housing Mismatch

There are two contributors to housing mismatch: 1) a mismatch in the number of units available in Harrisonburg and the number of households that need units affordable in that tier (i.e. the difference in height of the blue bar versus the rainbow-colored bar for each income tier and tenure); and 2) the units that are affordable in a particular tier are occupied by households outside of the tier (i.e. a 51-80% household living in a 31-50% AMI unit). The housing mismatch provides an understanding of the residency patterns that exist within Harrisonburg. **The housing mismatch is *not* to be interpreted as a production number** (if a number of units equal to the mismatches were produced, vacancy would be extraordinarily high).

This definition of housing mismatch is being used because it will allow an analysis of the potential impacts of students on housing as will be discussed below in the analysis for the rental market. The limitation of this definition is that households that occupy units that are below their income tier (i.e. a 31-50% AMI household in a 0-30% AMI unit) contribute to the mismatch despite that this household is not cost burdened. Despite this limitation, this approach was selected because it will allow for an analysis of the impacts of students living off-campus in Harrisonburg's housing market.

## How to Read the Residency Pattern Graphs (i.e. Housing Mismatch)

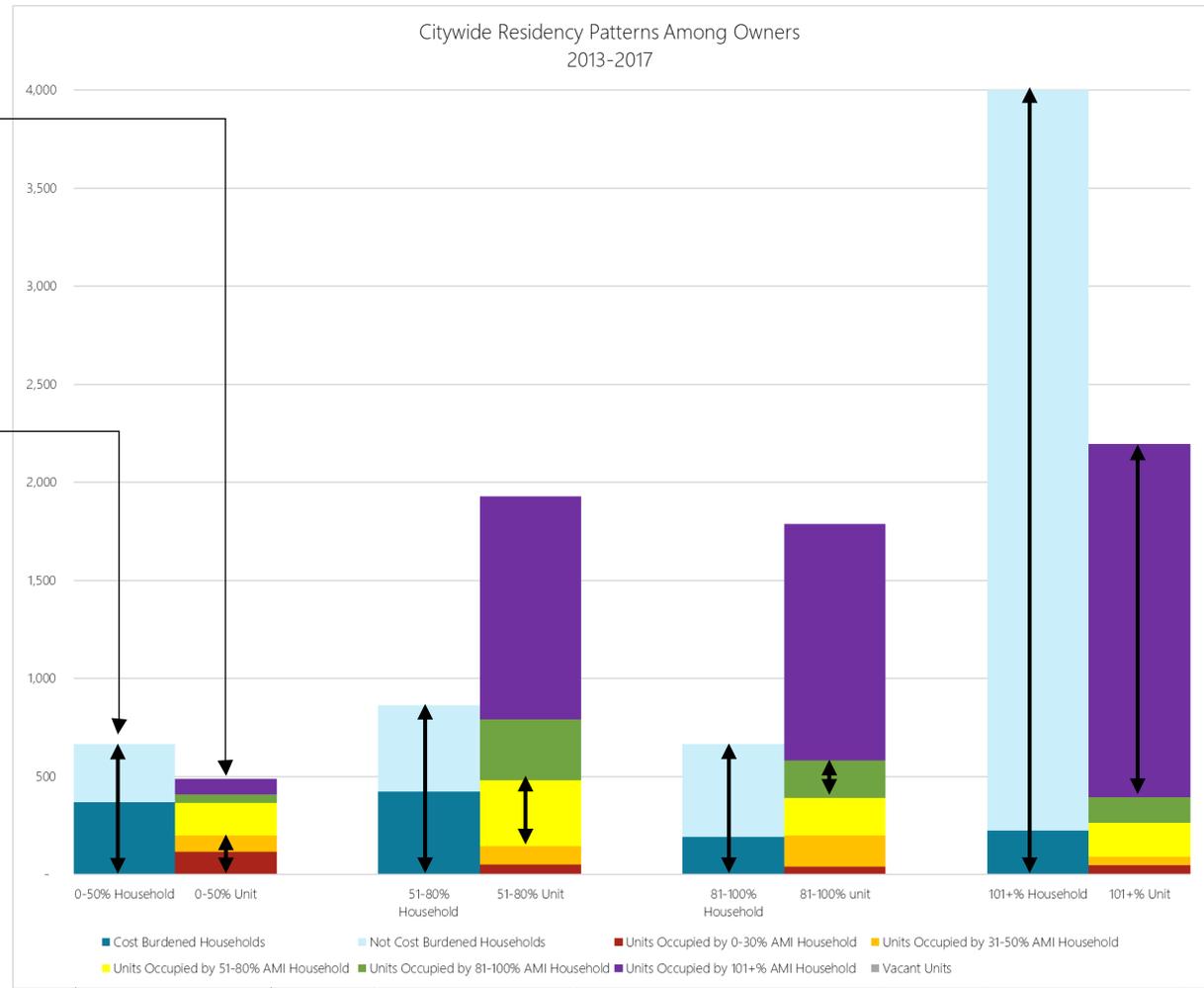
These graphs are rich with data and can provide insights into the housing market. There are several factors to pay attention to in interpreting the graphs as described in list form below. To illustrate how to read the graphs, each listed point will correspond to a labeled point on the Owner-Occupied Housing Mismatch graph. A clean copy of the graph will be provided following the explanation of how to read the graphs.

1. Each income tier has two bars: a) a blue bar at left showing the number of households in an income tier and b) rainbow-colored bar at right showing the number of units affordable in that income tier.
2. The blue bar has a dark and a light blue section. The dark blue shows households that are cost burdened (paying more than 30% of household income on housing costs) and the light blue portion indicates households that are not cost burdened.
3. The height of the blue bar as compared to the height of the rainbow-colored bar. If the height of the blue bar is greater than the height of the rainbow-colored bar, then there is a shortage of units affordable in that income tier. If the rainbow bar is taller than the blue bar, then there are more units than households in that income tier. Having more units than households in a tier does not guarantee availability of units for households in that tier because households outside of the tier may occupy the units. A taller rainbow bar simply indicates that there are more units in that tier than there are households.
4. The colors in the rainbow correspond to the incomes of the households that occupy those units. For example, red indicates a 0-30% AMI household, orange a 31-50% AMI household, etc.
5. The mismatch for a particular income tier is determined by finding the difference in the total height of the blue bar (i.e. all the households in that income tier) with the colored segment that aligns with that particular income tier. For example, among the 51-80% income tier (the yellow part of the rainbow bar), compare the height of the blue bar for the 51-80% households and *only* the yellow part of the rainbow bar. The households in yellow are in the “appropriate” unit for their income and therefore do not contribute to the mismatch whereas all the other colors indicate households in the “inappropriate” unit and are part of the mismatch.

The colored segments indicate the income of the households that live in the units. Red mean 0-30% AMI, orange 31-50% AMI, yellow 51-80% AMI, etc.

Blue bars show the number of households in an income tier.  
  
Dark blue indicates cost burdened households and light blue indicates households that are not cost burdened.

Each set of bars, indicated by the brackets, indicates a particular income tier. Per CHAS data, the owner tiers are 0-50%, 51-80%, 81-100% and 101+% AMI. Renter graphs will show 0-30% AMI, 31-50% AMI, 51-80% AMI and above 80% AMI.



0-50% AMI (red and orange)      51-80% AMI (yellow)      81-100% AMI (green)      101+% AMI (purple)

If the blue bar is taller than the rainbow bar, then there is a lack of units in that tier (see 0-50% AMI and 101+% AMI)

If the rainbow bar is higher than the blue bar, then there are more units than households in that tier (see 51-80% AMI and 81-100% AMI).

The mismatch for any income tier is the difference in length of the arrows for each set of bars. Even when there are more units than households (i.e. in 51-80% AMI and 81-100% AMI), there is still a mismatch because of households in different income tiers residing in the units.

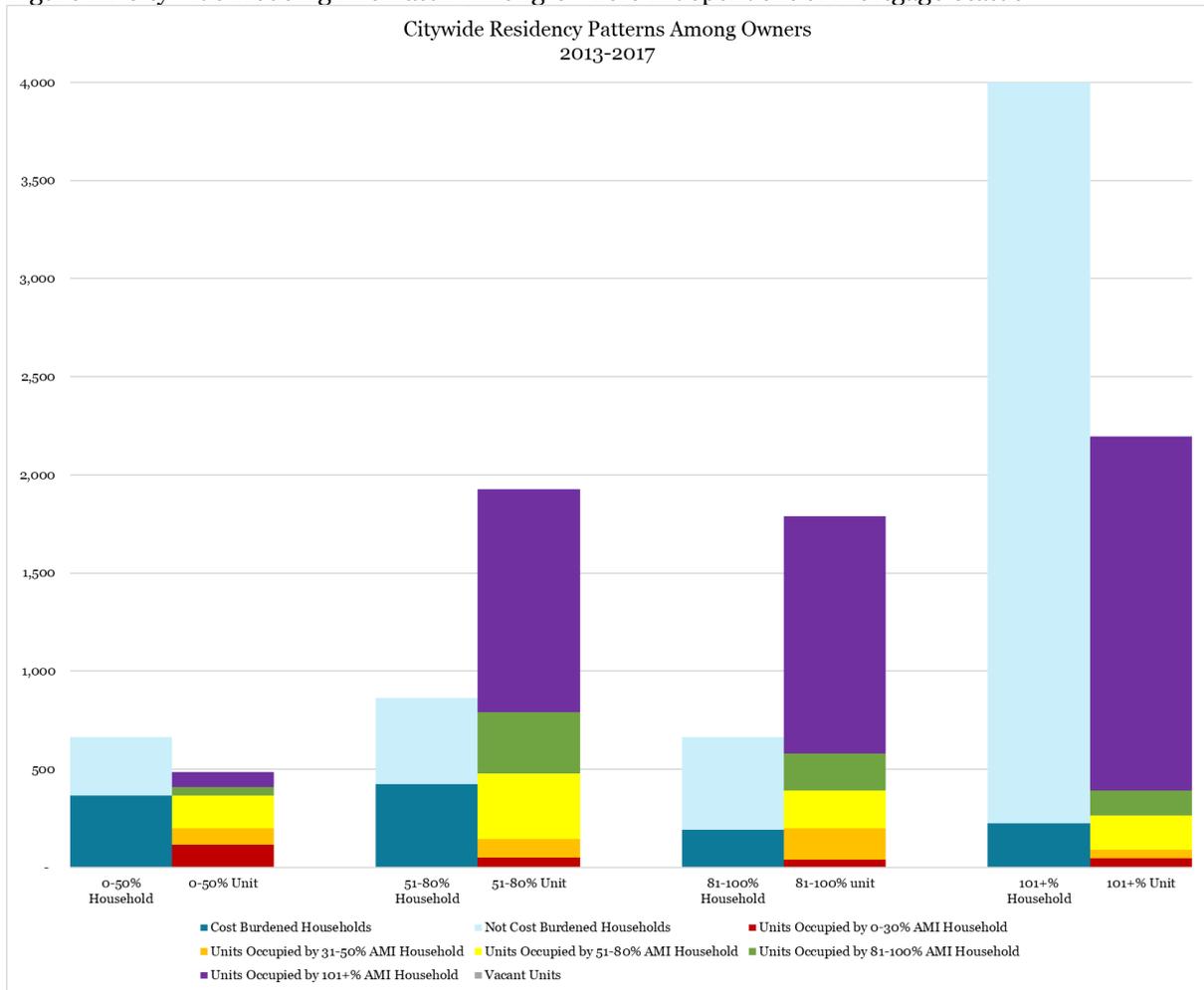
## Owner-Occupied Housing Mismatch

### *Overall Mismatch among Owners*

There are several key take-aways of the housing mismatch among homeowners independent of mortgage status:

- The majority of homeowners have incomes that are above 100% AMI.
- There are nearly twice as many owner households with incomes above 100% AMI than there are units affordable to households with incomes above 100% AMI.
- Of all owner-occupied units, 8% are affordable to 0-50% AMI households; the remaining 92% of the housing stock is fairly evenly distributed in the 51-80%, 81-100% and 101+% income tiers.
- Potentially by choice but also potentially due to lack of inventory, higher-income households occupy units that are affordable to households with lower incomes. There is no way to predict with any certainty the reasons that a particular household would buy a home that is affordable below their “expected” income tier but the reasons could include not wanting to have high housing costs, having other debt obligations such as car loans and student loans, obligations in caring for an aging parent or adult child, lack of availability of units in the homebuyer’s tier, etc.
- Higher income owners tend to have lower rates of cost burden.
- Cost burden among homeowners can be due in part to lending practices that allow borrowers to finance up to having a 42% debt-to-income ratio. Homeowners may choose to purchase a home that would leave them cost burdened because of the perception of a home being a lasting investment that will presumably appreciate over time, for example.

Figure 22 Citywide Housing Mismatch Among Owners Independent of Mortgage Status



Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

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Figure 23 Citywide Housing Mismatch Among Owners Independent of Mortgage Status

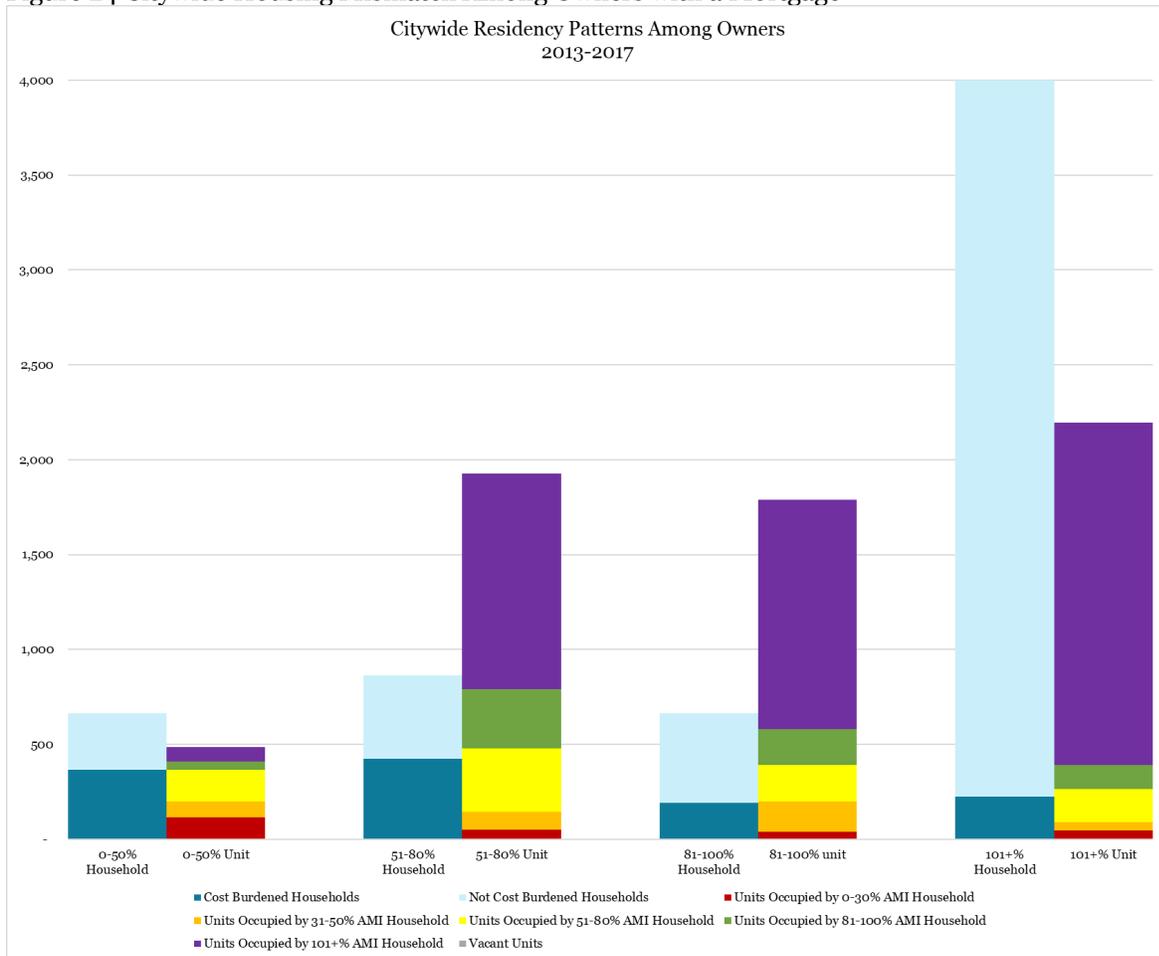
Income Tier	Cost Burdened Households	Not Cost Burdened Households	Units Occupied by 0-30% AMI Household	Units Occupied by 31-50% AMI Household	Units Occupied by 51-80% AMI Household	Units Occupied by 81-100% AMI Household	Units Occupied by 101+% AMI Household	Vacant Units	Housing Mismatch
0-50% AMI	367	297	114	84	168	43	78	0	466
51-80% AMI	424	440	51	93	335	311	1,139	0	529
81-100% AMI	193	471	39	159	192	190	1,209	0	474
101+% AMI	224	4,016	46	43	175	128	1,805	0	2,435

Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

## Residency Patterns Among Owners with a Mortgage

Residency patterns, and therefore the housing mismatch, among homeowners can be further examined by mortgage status. Among homeowners with a mortgage, the vast majority are households with incomes above 100% AMI. As with homeowners in the aggregate, there are far more households than units in this tier, requiring that higher-income household purchase units that are affordable to households with lower incomes, including units that could be considered naturally occurring affordable housing.

Figure 24 Citywide Housing Mismatch Among Owners with a Mortgage



Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

Figure 25 Citywide Housing Mismatch Among Owners with a Mortgage

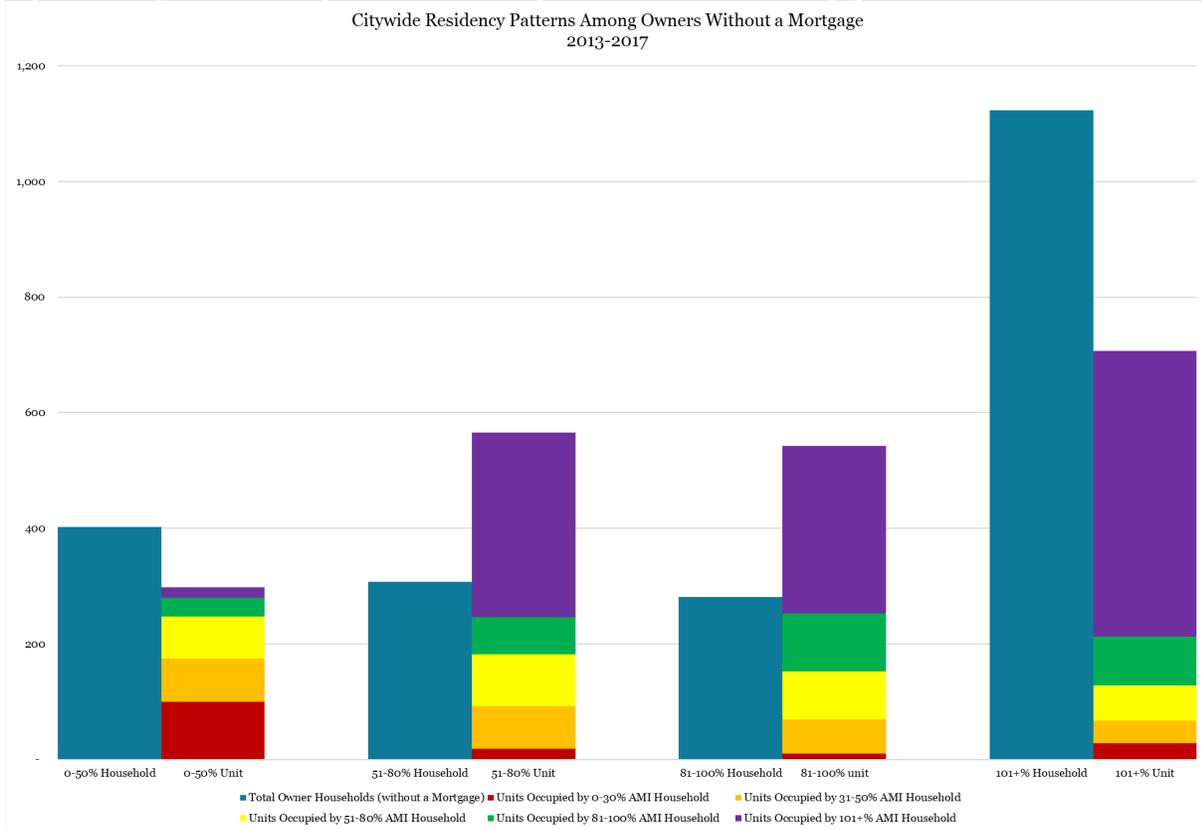
Income Tier	Households	Units Occupied by 0-30% AMI Household	Units Occupied by 31-50% AMI Household	Units Occupied by 51-80% AMI Household	Units Occupied by 81-100% AMI Household	Units Occupied by 101+% AMI Household	Housing Mismatch
0-50% AMI	402	100	74	73	33	18	228
51-80% AMI	307	18	74	90	64	320	217
81-100% AMI	281	10	59	83	100	290	181
101+% AMI	1,123	28	39	61	84	495	628

Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

## Residency Patterns Among Owners without a Mortgage

Among homeowners without a mortgage, which could include elderly households that have paid off their mortgages from decades prior. While the largest number of owner households without a mortgage are households with incomes above 101% AMI, the second highest number of owner households without a mortgage have incomes from 0-50% AMI (refer to the blue bars).

Figure 26 Citywide Housing Mismatch Among Owners without a Mortgage



Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

Figure 27 Citywide Housing Mismatch Among Owners without a Mortgage

Income Tier	Households	Units Occupied by 0-30% AMI Household	Units Occupied by 31-50% AMI Household	Units Occupied by 51-80% AMI Household	Units Occupied by 81-100% AMI Household	Units Occupied by 101+% AMI Household	Housing Mismatch
0-50% AMI	227	14	10	95	10	60	203
51-80% AMI	563	33	19	245	247	819	318
81-100% AMI	391	29	100	109	90	919	301
101+% AMI	3,108	18	4	114	44	1,310	1,798

Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

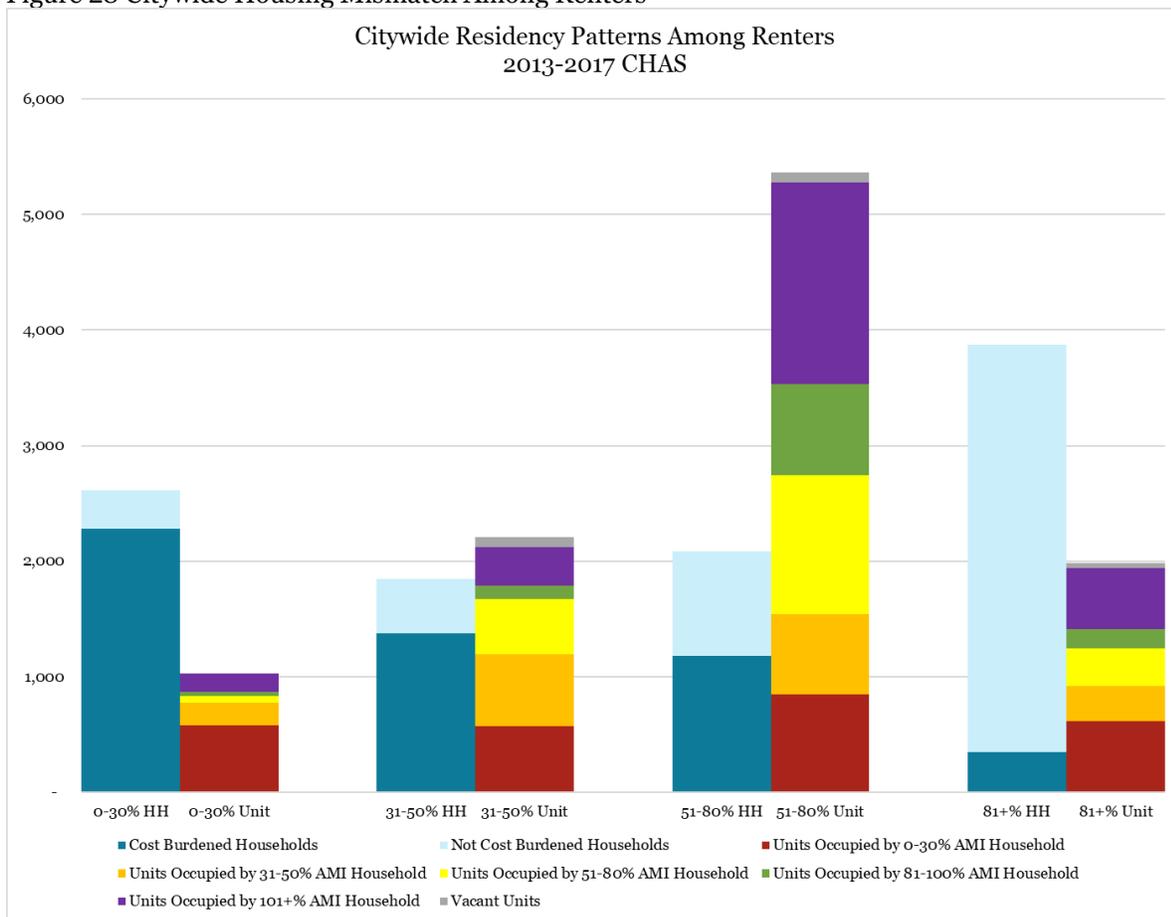
## Renter-Occupied Housing Mismatch

### Residency Patterns among Renters (Including Student Households)

Among renter-occupied units, there are several key takeaways:

- There are significantly more households than units in the 0-30% AMI tier. This tier includes most student households (including dependent and independent students); persons needing supportive housing; elderly households; and other household types that are non-student, non-elderly households. Student households will be explored further.
- The vast majority of rental units are naturally occurring affordable housing; only 19% of all rental units are affordable to households with incomes above 80% AMI.
- Because there are many more households with incomes above 80% AMI but few units for this income tier, these higher-income households occupy more affordable units, which increases competition for the affordable units.
- The vacancy rate is low; CHAS data identified that only 2% of rental units were vacant.

Figure 28 Citywide Housing Mismatch Among Renters



Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

## Impacts of Students Living Off-Campus on the Rental Market Residency Patterns

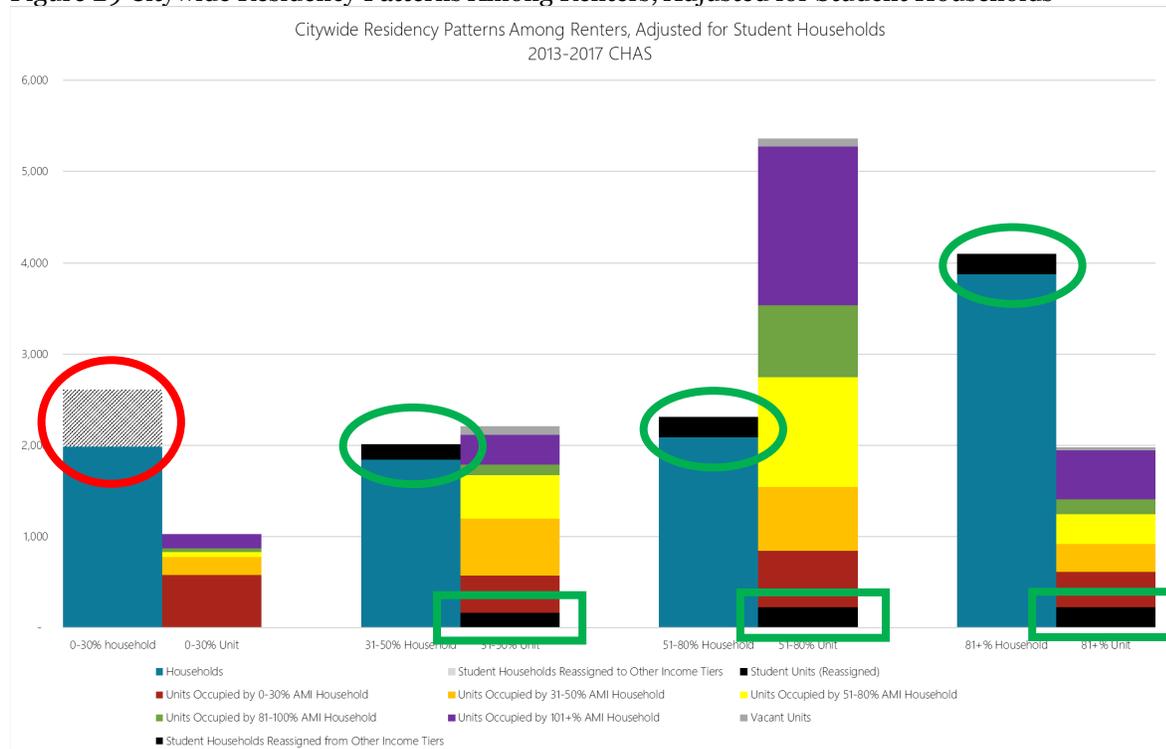
See Appendix F for more details of the methodology employed to account for students living in off-campus housing.

This methodology provides only an estimate of how the mismatch is altered when removing dependent students from the analysis as there is no dataset available that will identify precisely which units are occupied by student households versus non-student households. Based on the analysis that accounts for students, the citywide renter residency patterns are likely altered as shown below. The hashed grey portion (shown with a red circle) of the blue 0-30% AMI household bar indicates the estimated student households that are likely being supported by higher-income parents and are therefore reassigned to other income tiers (shown in black and with a green oval).

Additionally, the rainbow bar can be altered to provide an estimate of how student households impact the mismatch assuming that all reassigned student households are reassigned to income tiers that align with parents' incomes ensuring that the student households are not mismatched.

Reallocated student households with 0-30% AMI incomes would be accounted for in the red portions of the rainbow bars; the red segment has been converted to a black segment with a green rectangle in the rainbow bar. These student households would be "appropriately" housed and therefore do not contribute to the mismatch. The mismatch numbers are therefore shifted downward for all income tiers once student households are reassigned *if all students reside in units that correspond to parental income*. If students do not live in units that correspond to parental income, then the mismatch would increase. For this reason, a range is provided for the mismatch when considering student households.

Figure 29 Citywide Residency Patterns Among Renters, Adjusted for Student Households



Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc. and Fourth Economy Consulting.

Figure 30 Citywide Housing Mismatch Among Renters, 2020

Income Tier	Households, Unadjusted for Students	Households, Adjusted for Students	Units Occupied by 0-30% AMI Household	Units Occupied by 31-50% AMI Household	Units Occupied by 51-80% AMI Household	Units Occupied by 81-100% AMI Household	Units Occupied by 101+% AMI Household	Vacant Units	Housing Mismatch (without Student Correction)	Housing Mismatch Range (with Student Correction)
0-30% AMI	2,610	1,986	579	199	56	35	158	0	2,031	1,407
31-50% AMI	1,845	2,014	570	625	480	114	329	90	1,130	961 to 1,299
51-80% AMI	2,085	2,313	845	700	1199	790	1740	85	801	573 to 1,029
81+% AMI	3,874	4,102	614	309	320	169	530	40	3,135	2,907 to 3,363

Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc

# HOUSEHOLD PROJECTIONS

## Overview

Projection data from Ribbon Demographics, LLC. were utilized. Ribbon Demographics specializes in demographic projections and includes data related to the number of households by income, size, tenure and age (HISTA). Projections are inherently subject to uncertainty as they are based on assumptions that may or may not bear out over time. While projections can be useful for overall planning purposes at a macro level, they should be used with caution when applied on a micro level.

## Estimating the Projected Number of Households by Income

Because the HISTA data provides the number of households in income brackets from \$0 to \$10,000, \$10,001 to 20,000, etc., it was necessary to regroup households into income levels used in the study. It was assumed that households are uniformly distributed among the HISTA income levels. For example, if the income tier cutoff was 30% above the bottom of a HISTA income band, 30% of households identified by HISTA were assigned to the lower AMI band and 70% to the upper AMI band.

To determine the number of households in each income level and tenure in 2025, a similar procedure was used. However, it was assumed that the current median income remained the same when adjusted for inflation; inflation was assumed to be 2% annually.

## Using Projection Data to Estimate the Future Mismatch

### Assumptions

To apply projection data and keep this definition of the mismatch, the following assumptions are made:

1. The number of units affordable in each income tier and tenure will remain the same (i.e. the height of the rainbow bar is the same indicating that there are no new units brought online).
2. The occupancy characteristics remain the same (i.e. the proportion of 0-30% AMI households in 0-30% units remains the same, as does the percentage of 31-50% AMI households in the 0-30% units, etc. such that the rainbow bar remains unchanged).
3. Any changes in the number of households for a tier and tenure will be attributed to the mismatch in that tier and tenure (i.e. if there are projected to be more households in a tier and tenure, then the mismatch will increase; the mismatch will decrease if there are expected to be fewer households in a tier and tenure).
4. The percent change in households for each tier and tenure is accurate (as determined by HISTA projection data) even if the number of households in the tier and tenure varies from what is reported in CHAS. *It is the percent change in number of households that will be applied to the mismatch.*

## *Estimating the Projected Housing Mismatch*

The following methodology was used in determining the projected housing mismatch in 2025:

1. The projections from HISTA will yield the estimated number of households in a tier and tenure in 2020 and 2025. The percent change in the number of households in each income tier and tenure was determined.
2. Apply the percent change in the number of households in a tier and tenure (as determined by HISTA 2020-2025) to the existing mismatch (as determined by CHAS) to get the mismatch for 2025. For example, assume that CHAS showed that there are 16,000 0-30% AMI renters and a mismatch of 11,000. Assume then that HISTA projections showed there was a 25% increase in the number of households in this tier and tenure. Apply that 25% increase to the 16,000 households that CHAS identified (4,000 additional households because 25% of 16,000 is 4,000). Assume that all 4,000 households do not have housing in their tier and tenure bringing the mismatch to 16,000 households for 0-30% renters (11,000 + 4,000 = 15,000) in 2025.
3. Among student households, JMU's Office of Institutional Research estimates that there will be an additional 150 students in 2025. If student households remain the same at three persons, this increase of 150 students will correspond to 50 off-campus student households, 92% of which will be dependent students with incomes classified as 0-30% AMI (46 households).
4. If student households are redistributed in the same proportions as in the 2020 mismatch adjustment, then (in addition to the student households that are reassigned based on current enrollment) there will be:
  - i. 46 0-30% AMI households that are reassigned from the 0-30% AMI tier into other tiers.
  - ii. 12 student households potentially in the 31-5% AMI tier
  - iii. 17 student households potentially in the 51-80% and 81+% AMI tiers.

## *Limitations*

There are some inherent limitations to the proposed methodology including:

1. The number of units probably will actually change as units are built (probably mostly higher end) and units are lost (probably mostly lower end) due to deterioration (i.e. the height of the rainbow bar will probably change).
2. Households do move around and the occupancy patterns will likely change (i.e. the rainbow bar will probably change a bit in addition to becoming taller or shorter as units are brought online and/or monthly rent paid changes and moves a unit into a different tier).

## Household Projections in 2025

Using the HISTA projections, the changes in number of households by income tier and tenure were calculated as follows. The HISTA projections estimate that the total number of households will grow by 949 households in the next five years; growth is expected among both renters (589 households) and owners (360 households) and is not expected to be evenly distributed among the various income tiers. HISTA data does not indicate why there are projected increases or decreases by tenure or income tier.

### Renters

Figure 31 Citywide Projected Number of Renters by Income Tier

	2020	2025	Change (#)	Change (%)
0-30% AMI	3,480	3,594	114	3%
31-50% AMI	2,066	2,177	111	5%
51-80% AMI	2,633	2,710	77	3%
81+% AMI	3,191	3,477	287	9%

Source: HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

Figure 32 Citywide Projected Number of Renters Age 62 and Older by Income Tier

	2020	2025	Change (#)	Change (%)
0-30% AMI	385	432	47	12%
31-50% AMI	207	215	7	3%
51-80% AMI	327	392	65	20%
81+% AMI	579	678	99	17%

Source: HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

## Owners

Figure 33 Citywide Projected Number of Owners by Income Tier

	2020	2025	Change (#)	Change (%)
0-30% AMI	511	537	26	5%
31-50% AMI	579	653	74	13%
51-80% AMI	1,001	1,033	32	3%
81-100% AMI	690	790	100	15%
101+% AMI	3,846	3,974	128	3%

Source: HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

Figure 34 Citywide Projected Number of Owners Age 62 and Older by Income Tier

	2020	2025	Change (#)	Change (%)
0-30% AMI	347	381	34	10%
31-50% AMI	344	421	77	22%
51-80% AMI	443	460	17	4%
81-100% AMI	251	284	33	13%
101+% AMI	972	1,002	30	3%

Source: HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

## HOUSING MISMATCH IN 2025

Applying the projected changes in the number of households in each income tier and tenure to the 2020 mismatch results in an estimate of the mismatch in 2025. As stated above, there are an estimated 46 student households in the 0-30% AMI tier for 2025 that were reassigned to other income tiers.

### Renters

Figure 35 Housing Mismatch Among Renters, 2020 and 2025

	2020 Housing Mismatch (no student adjustment)	2020 Housing Mismatch (with student adjustment)	2025 Housing Mismatch (no student adjustment)	2025 Housing Mismatch (with student adjustment)
0-30% AMI	2,031	1,407	2,098	1,427
31-50% AMI	1,130	961 to 1,299	1,191	1,010 to 1,372
51-80% AMI	801	573 to 1,029	824	579 to 1,069
81+% AMI	3,135	2,907 to 3,363	3,417	3,172 to 3,662

Source: CHAS 2013-2017, HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

### Owners

Figure 36 Housing Mismatch Among Owners, 2020 and 2025

	2020 Housing Mismatch	2025 Housing Mismatch
0-50% AMI	466	508
51-80% AMI	529	545
81-100% AMI	474	545
101+% AMI	2,435	2,508

Source: CHAS 2013-2017, HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

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# Appendix F: Student Housing Demand and Unit Adjustment Methodology

## STUDENTS DRIVE DEMAND IN THE RENTAL MARKET

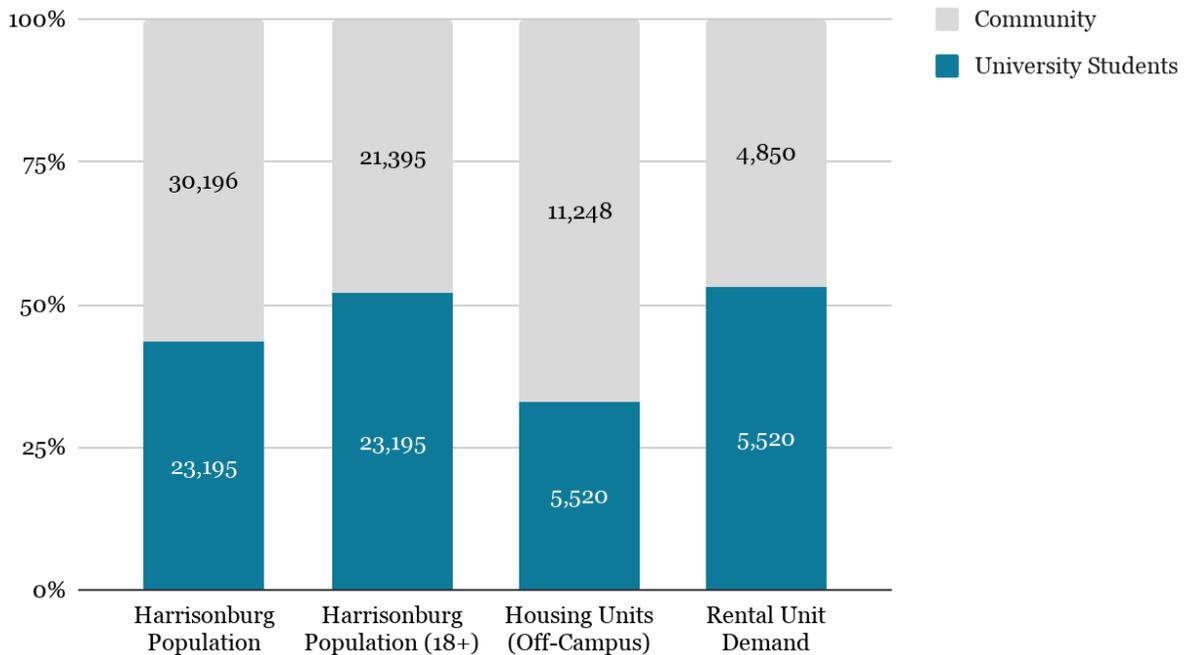
Students are the demand drivers of the rental market. In 2018, postsecondary student enrollment at James Madison University and Eastern Mennonite University totaled 23,195, according to the National Center for Education Statistics.

To determine off-campus housing demand for students, data from the Census American Community Survey, National Center for Education Statistics, and department of student housing data for James Madison University and Eastern Mennonite University was analyzed.

Some undergraduates are housed on campus. According to student housing information provided by the universities, James Madison University provides housing for 6,700 undergraduates and Eastern Mennonite University provides housing for 1,040 undergraduates. All graduate students find housing in the community. In total, 15,455 students must find rental housing in the community.

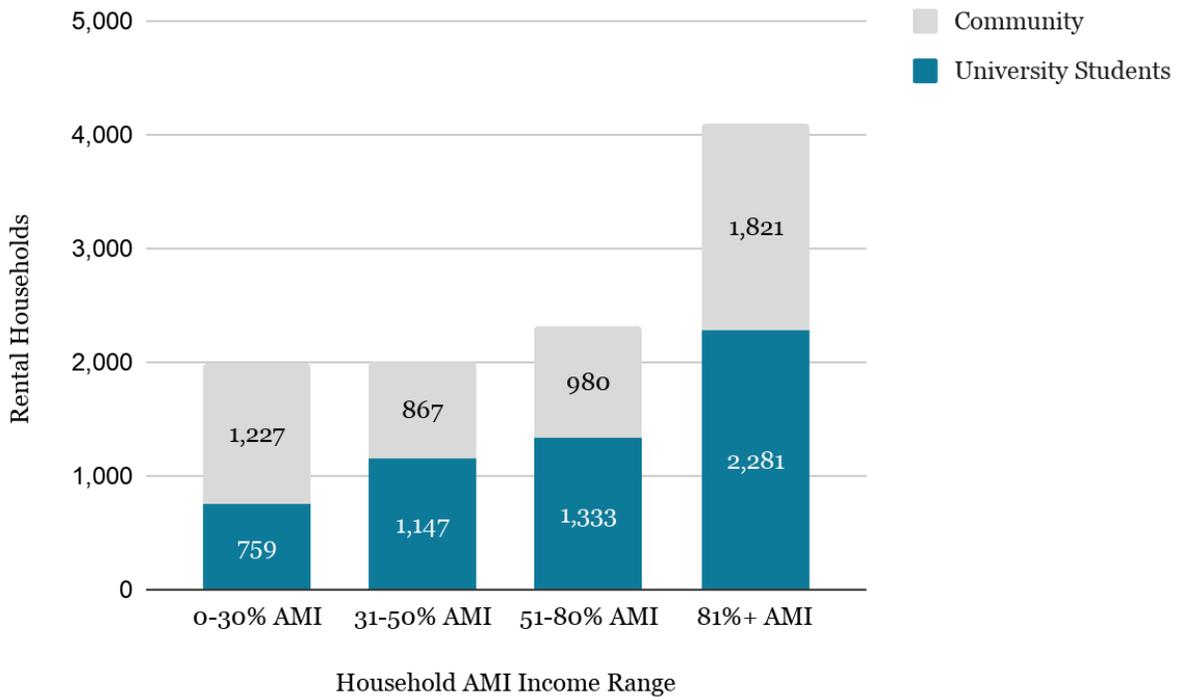
At the Harrisonburg occupation rate of 2.8 people per rental household, 15,455 students demand a total of 5,520 rental units in Harrisonburg. 5,520 units represents 34% of all off-campus housing units (owner and renter units). In this study, we assume that students occupy rental units and are not owners. Thus, the 5,520 rental units demanded by students represents 53% of total off-campus rental demand in Harrisonburg.

Figure 37 Student Population and Housing Demand



Source: Fourth Economy analysis of Census American Community Survey, National Center for Education Statistics, James Madison University and Eastern Mennonite University Departments of Student Housing data.

Figure 38 Student and Community Rental Housing Unit Demand



Source: Mullin & Lonergan and Fourth Economy analysis of HUD Comprehensive Housing Affordability Strategy data set with adjustments based on FAFSA and Urban Institute data.

Students represent 53% of all rental housing in Harrisonburg. Comprehensive Housing Affordability Strategy (CHAS) data classifies owner and renter households by area median income (AMI) tier, as measured by household income. Within each AMI income tier, students in Harrisonburg represent:

- 38% of 0-30% AMI rental households, totaling 759 households
- 57% of 31-51% AMI rental households, totaling 1,147 households
- 58% of 51-80% AMI rental households, totaling 1,333 households
- 56% of 81%+ AMI rental households, totaling 2,281 households

We adjusted household income classifications for students based on their dependency status, poverty rate classification, and potential for rental support from their families. See chart and methodology below.

Figure 39 Student Rental Housing Unit Adjustment and Estimates

	Initial Student Unit Demand Estimate (CHAS)	Unit Adjustment (Described Below)	Final Student Unit Demand Estimate
0-30% AMI	1,387	-625	762
31-50% AMI	978	+169	1,147
51-80% AMI	1,105	+228	1,333
81+% AMI	2,053	+228	2,281

Source: Mullin & Lonergan and Fourth Economy analysis of HUD Comprehensive Housing Affordability Strategy data set with adjustments based on FAFSA and Urban Institute data.

In total, 625 0-30% AMI student rental households were reclassified to higher AMI income tiers. 169 student households moved to 31-50% AMI, 228 to 51-80% AMI, and 228 to 81%+ AMI. This reclassification of student rental households to higher AMI tiers provides a more accurate and conservative estimate of the overall housing gaps need for the 0-30% AMI rental market in Harrisonburg.

Many students either work low-paying part time jobs or are unemployed. These students will report low household incomes and are classified in low AMI tiers. Some students are correctly classified by CHAS data and show up in their correct AMI income tier, but other students need to be reclassified based on receiving rental support from their parents and higher income families.

According to FAFSA data compiled since 2010, 92% of James Madison University and Eastern Mennonite University students were claimed as dependents by their parents, with many likely receiving rental support from their families. The majority of postsecondary students in Harrisonburg come from high income backgrounds. FAFSA tracks family income levels of dependent students in three broad earnings categories: less than \$30,000, \$30,000 to \$75,000, or \$75,000 or more in income. Families earning above \$75,000 are in the highest income category tracked for dependent students. Of postsecondary students attending universities in Harrisonburg:

- 15% of students come from families with incomes below \$30,000
- 23% of students come from families with incomes between \$30,000 and \$75,000
- 61% of students come from families with incomes above \$75,000

Independent students represent 8% of all off campus households, based on FAFSA data for James Madison University and Eastern Mennonite University compiled since 2010. We assume that independent students do not receive rental assistance from their families and are correctly classified within the CHAS data. According to national data from the Urban Institute, 72% of independent students fall into 0-30% AMI income limits for Harrisonburg, and 28% fall into 31-50% AMI income limits for Harrisonburg. Independent student households do not need to be

reclassified, resulting in estimates that 5.8% of all student households are independent student households at the 0-30% AMI tier, and 2.2% of all student households are independent student households at the 31-50% AMI tier.

Dependent students represent 92% of all off campus student households based on FAFSA data for James Madison University and Eastern Mennonite University compiled since 2010. Many dependent students are correctly classified in 31-50% AMI, 51-80% AMI, and 81%+ AMI households. However, some of the dependent student households that fall within the 0-30% AMI tier need to be reclassified.

Of the dependent students who fall within 0-30% AMI households, two thirds of those whose households are classified as in poverty, need to be reclassified based on receiving family rental support. The student poverty rate in Harrisonburg is tabulated as 45%, while the non-student poverty rate is 14%. The student poverty rate does not take into account family income support and the majority of students attending university in Harrisonburg come from high income backgrounds. To match the non-student poverty rate, two thirds of students who are classified as in poverty need to be reclassified.

Renter support for dependent students is based on the income of their families. The supporting family is not supporting an entire additional household, the supporting family is supporting an additional fraction of a household. The average rental household in Harrisonburg houses 2.8 people. A family that supports a college student's rental payments would thus be taking on an additional approximate 1/3 of a household. Of families claiming students as dependents:

- 15% of families with a dependent student earn less than \$30,000 in income. These students are assumed to not receive rental support and remain 0-30% AMI households.
- 23% of families with a dependent student earn \$30,000 to \$75,000 in income. These students receive rental support from their families. The adjusted rental support results in reclassifying these students from 0-30% AMI households to 31-50% AMI households.
- 61% of families with a dependent student earn \$75,000 or more in income. These students receive rental support from their families. The adjusted rental support results in reclassifying these students from 0-30% AMI households to 51-80% AMI and 81%+ AMI households.

In total, 625 0-30% AMI student rental households were reclassified to higher AMI income tiers. 169 student households moved to 31-50% AMI, 228 to 51-80% AMI, and 228 to 81%+ AMI.

# Appendix G: Multiple Listing Service Methodology and Analysis

## OVERVIEW

The Multiple Listing Service (MLS) data provides transaction level data for the 933 units sold between January 1, 2018 and July 13, 2020. MLS data does not include transactions that were not listed with a listing agent (i.e. units that were for sale by owner, sold to a family member without the aid of a real estate agent, etc.).

## METHODOLOGY

The following steps were taken to conduct the analysis:

### Alignment of Data with Market Types

Each transaction was geocoded to align with the established Market Types using ArcGIS to allow for comparison of housing stock and market characteristics by Market Type.

### Determination of the Maximum Affordability by Income Tier

The maximum housing affordability was determined using the following assumptions:

1. Borrowers have a 30-year conventional mortgage with an interest rate of 4%;
2. Borrowers have a down payment of 5%;
3. Borrowers have a credit score of 620, which allows for a conventional mortgage and an average private mortgage insurance (PMI) of 1.2% of the original loan amount each year;
4. Homeowners insurance costs \$1,000 annually; and
5. Taxes are \$0.86 per \$100 of assessed value and units are taxes on full market value (i.e. sale price).

The HUD Area Median Income (AMI) was recorded for 2018, 2019 and 2020. Maximum affordability for a household with income of 100% AMI was assumed to be 30% of AMI, a HUD-established norm that prevents a household from being cost burdened (paying more than 30% of income on housing costs). Because the AMI varies from year to year, the maximum loan amount was calculated for 2018, 2019 and 2020 using the same set of assumptions. The calculated maximum loan amounts for a 100% AMI household will be used to classify each transaction into its affordability tier.

### *Limitation of this Methodology*

This methodology of bucketing according to the maximum affordability based on the HUD-defined AMI requires making the assumption that a household of four purchases the unit; this is not always the case. However, no household size characteristics are available in MLS data to be able to adjust affordability based on household size.

Another limitation of the approach is that it assumes the household would want to allocate 30% of household income to housing when, in fact, households may not be able to afford this level of spending given other debts such as student loans, car payments or other consumer debt. Other

households may be willing to finance the greatest amount possible, which, by lending standards would allow a household to be cost burdened.

### Other Calculated Values

Additional calculated values include:

1. The ratio of the sale price to the list price
2. A simplification of the mechanism of the sale (i.e. conventional mortgage, cash, etc.) to create four categories: cash, conventional, government-backed (i.e.VA, FHA, USDA, etc.), or unknown/not specified.
3. A determination of a price point and unit tier for each transaction. For example, a home that sold for \$230,000 in 2018 would be classified by price point (i.e. \$200k - \$250k) as well as a 51-80% AMI unit because a 71% AMI household could afford the unit based on the set of assumptions made.

## RESULTS OF THE ANALYSIS

### Income Needed to Afford the Median-Priced Unit

Among home sales captured in MLS data, the median home sales price varied by year. The income needed to afford a median unit, therefore, is dependent upon the year. The results are summarized below.

Figure 40 Income Needed to Afford the Median-Priced Unit

Year	Median sale Price	Annual Income Needed
2018	\$ 185,913	\$ 49,455
2019	\$ 199,900	\$ 52,925
2020	\$ 198,700	\$ 52,628

Source: MLS; Calculations by Mullin & Lonergan Associates, Inc.

## Affordability by Income Tier by Year

The following table indicates the maximum purchase price by income tier by year.

Figure 41 Maximum Purchase Price by Income Tier by Year

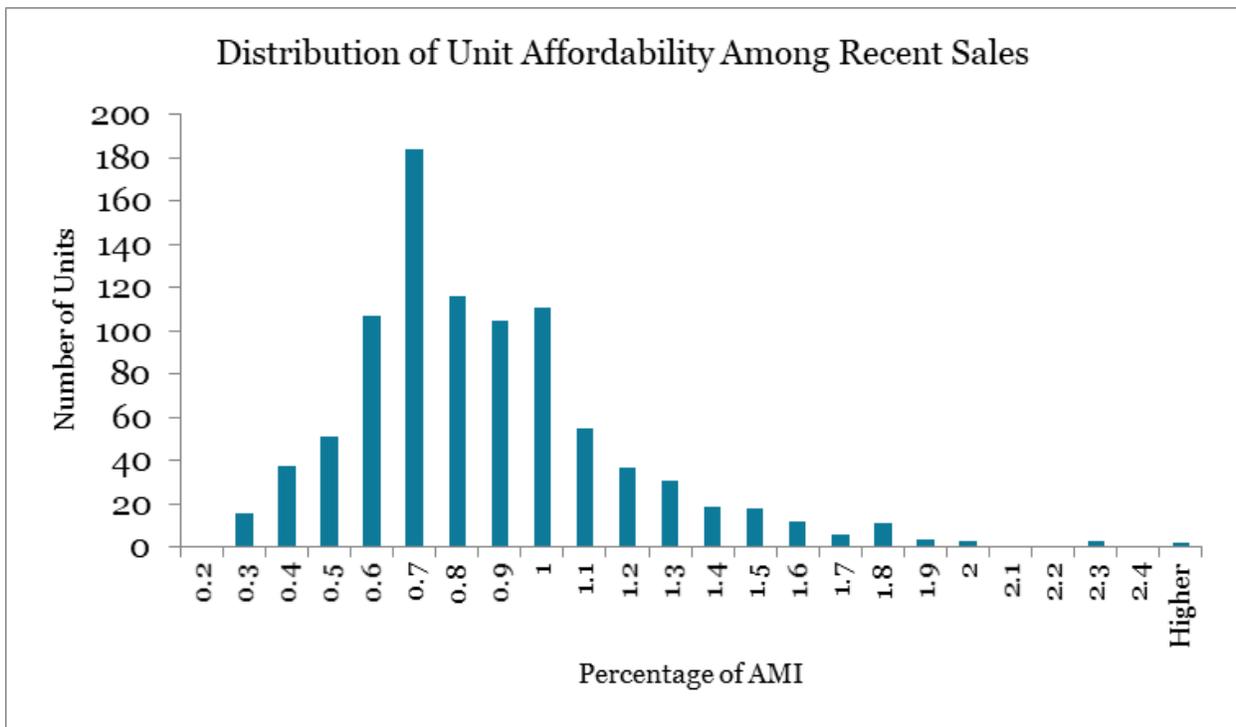
	Maximum purchase price for 30% AMI Household	Maximum purchase price for 50% AMI Household	Maximum purchase price for 80% AMI Household	Maximum purchase price for 100% AMI Household
2018	\$ 71,548	\$ 119,247	\$ 190,795	\$ 238,494
2019	\$ 81,464	\$ 135,774	\$ 217,238	\$ 271,547
2020	\$ 82,915	\$ 138,192	\$ 221,107	\$ 276,384

Source: Calculations by Mullin & Lonergan Associates, Inc.

## Distribution of Units Among the Various Income Tiers

The following histogram shows the distribution of the units sold based on affordability at different AMI points. The largest percentage of units (45%) are affordable within the 51-80% AMI range. Among all transactions, 7% of units were affordable only to households with incomes above 100% AMI meaning that 93% of units are affordable to those households with incomes below 100% AMI. A lack of inventory among higher priced units (units affordable to those with incomes above 100% AMI) could cause higher earning homebuyers wishing to live in the city to buy units down market. This, in turn, makes it more difficult for lower income homebuyers to purchase units, particular in a market in which the median days on market is nine days and the sale price is within one percent of the list price.

Figure 42 Distribution of Unit Affordability Based on MLS

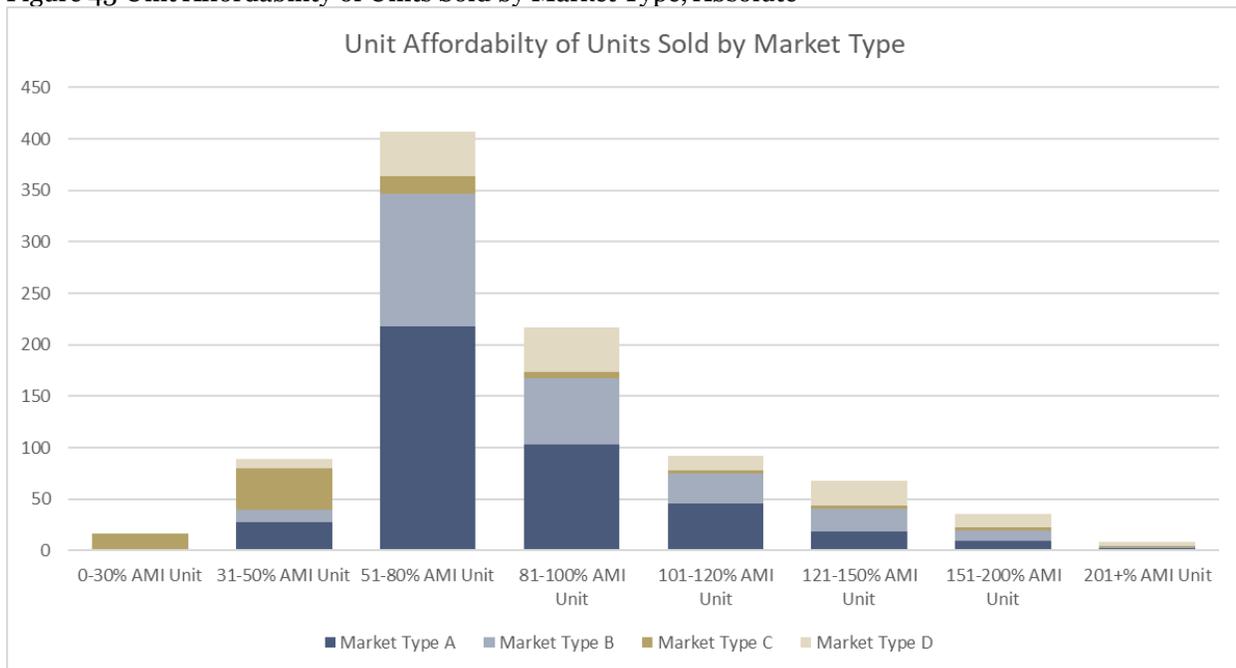


Source: MLS (Jan 1, 2018 to July 13, 2020); Calculations by Mullin & Lonergan Associates, Inc.

## Unit Affordability by AMI Tier by Market Type

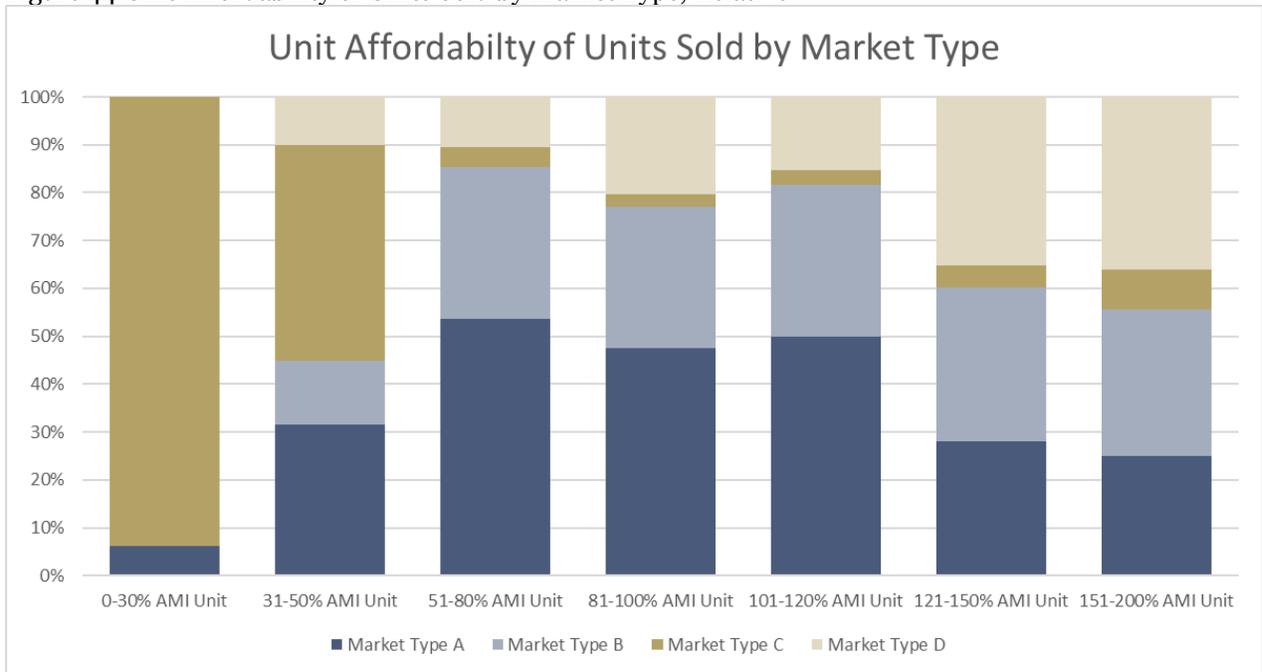
The following two graphs illustrate the same set of data but in slightly different forms. The first graph indicates that the distribution of unit affordability by market types while the second graph standardizes the data to compare relative affordability by market types. Market activity is driven in large part by affordability as there are greater numbers and percentages of affordable units being sold in High Market Activity areas (both shades of blue). The most affordable units, those affordable for households with incomes between 0-30% AMI, are found largely in Lower Market Activity/Higher Amenity Access areas indicating that these units may be in more need or repair than a slightly more expensive units. These units have slightly longer (but not long) days on market (14 days instead of 7 or 8 days as in High Market Activity areas) and sell at 97% of list price as opposed to 100% of list price.

Figure 43 Unit Affordability of Units Sold by Market Type, Absolute



Source: MLS (Jan 1, 2018 to July 13, 2020); Calculations by Mullin & Lonergan Associates, Inc.

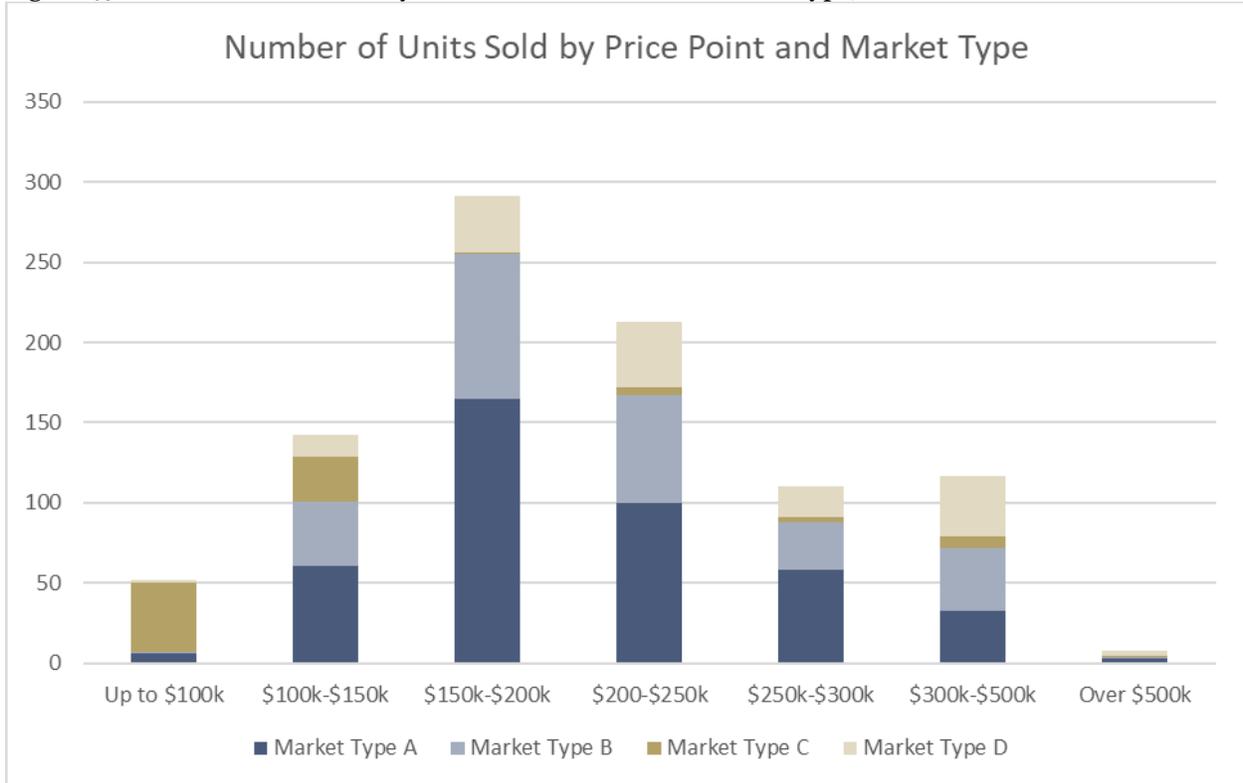
Figure 44 Unit Affordability of Units Sold by Market Type, Relative



Source: MLS (Jan 1, 2018 to July 13, 2020); Calculations by Mullin & Lonergan Associates, Inc.

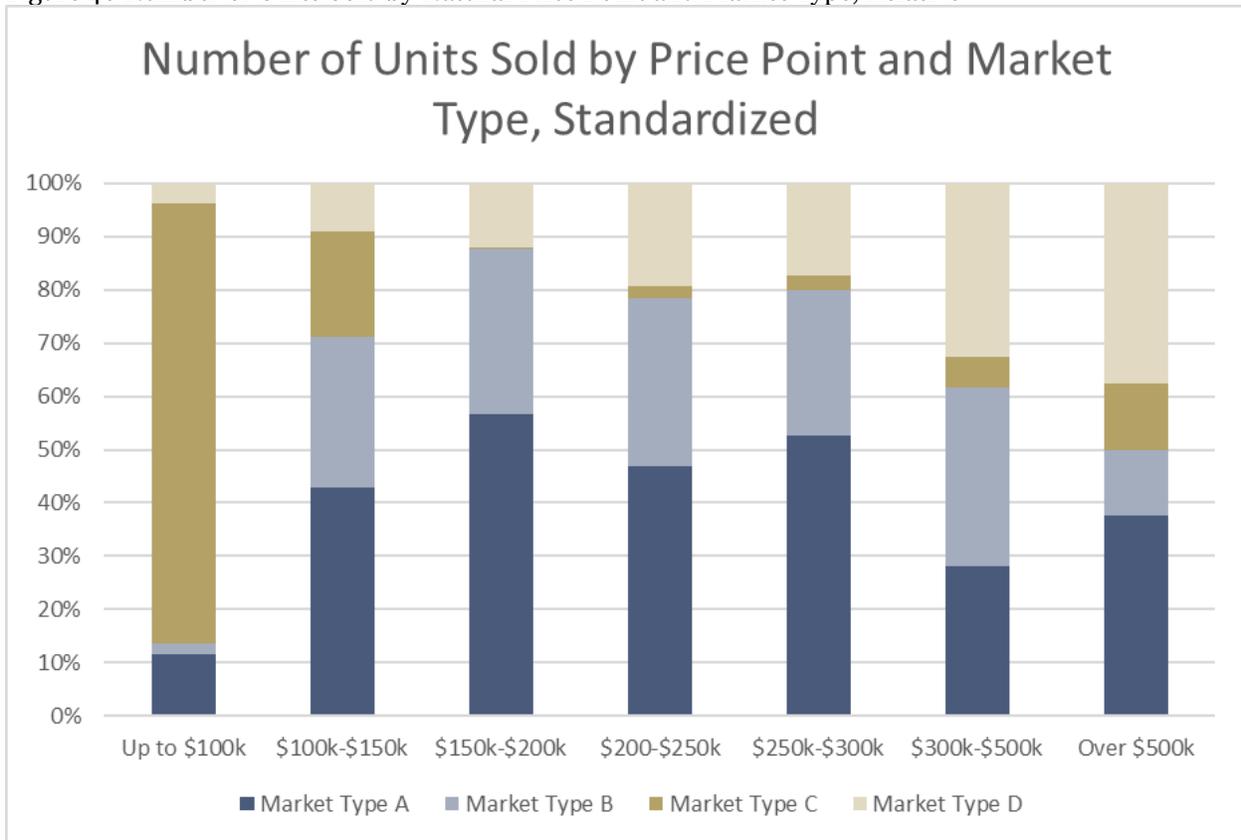
Another way to view unit affordability is via natural price points instead of AMI income tiers as a typical homebuyer thinks about buying a home that costs up to a certain price (i.e. up to \$200,000) as opposed to thinking about buying a home that costs up to \$119,247 if household income was 50% AMI in 2018.

Figure 45 Number of Units Sold by Natural Price Point and Market Type, Absolute



Source: MLS (Jan 1, 2018 to July 13, 2020); Calculations by Mullin & Lonergan Associates, Inc.

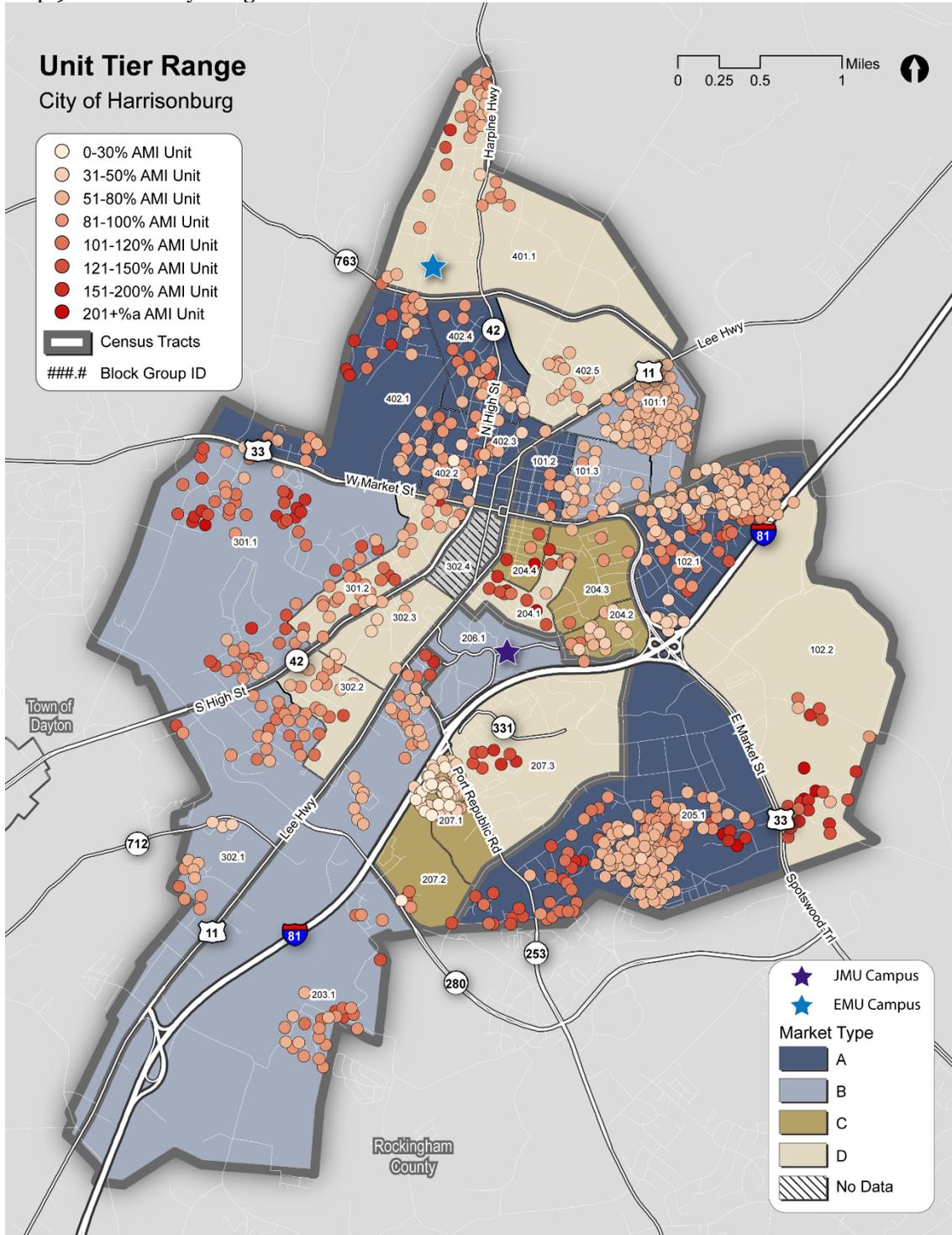
Figure 46 Number of Units Sold by Natural Price Point and Market Type, Relative



Source: MLS (Jan 1, 2018 to July 13, 2020); Calculations by Mullin & Lonergan Associates, Inc.

The following map illustrates the locations of units sold throughout Harrisonburg by affordability range. There have been lower-cost units sold throughout the City, though there are areas in which there are greater concentrations of affordable units including in the northeast and in clusters located around JMU's campus.

Map 9 Affordability Range of Units Sold



Source: MLS (Jan 1, 2018 to July 13, 2020); Calculations by Mullin & Lonergan Associates, Inc.

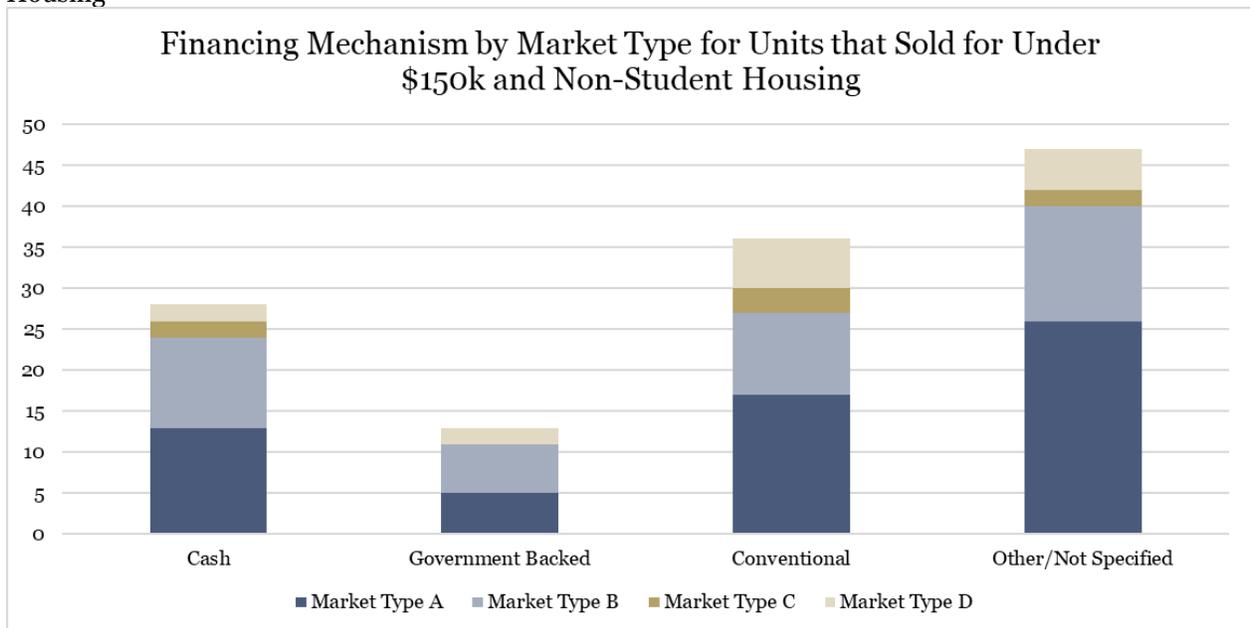
## Homes Sold for up to \$150,000 and Cash Sales

Of the 933 units sold during the study period, 194 were sold for less than \$150,000, indicating that 21% of units sold were within reach for 0-50% AMI households by HUD affordability standards (i.e. the household would not be cost burdened).

However, 70 of these units are located in Camden Townes, Campus View Condos, College Station, Hunters Ridge, Madison Manor, Pheasant Run and University Court; all of these developments tend to be renter-occupied and frequently occupied by student households. These 70 units, while technically available to a potential homebuyer, are probably not locations that a homebuyer would seek out as a primary residence.

The remaining 124 units were sold in all market types and via all financing mechanisms (i.e. cash, government backed loans such as VH or FHA, and conventional loans).

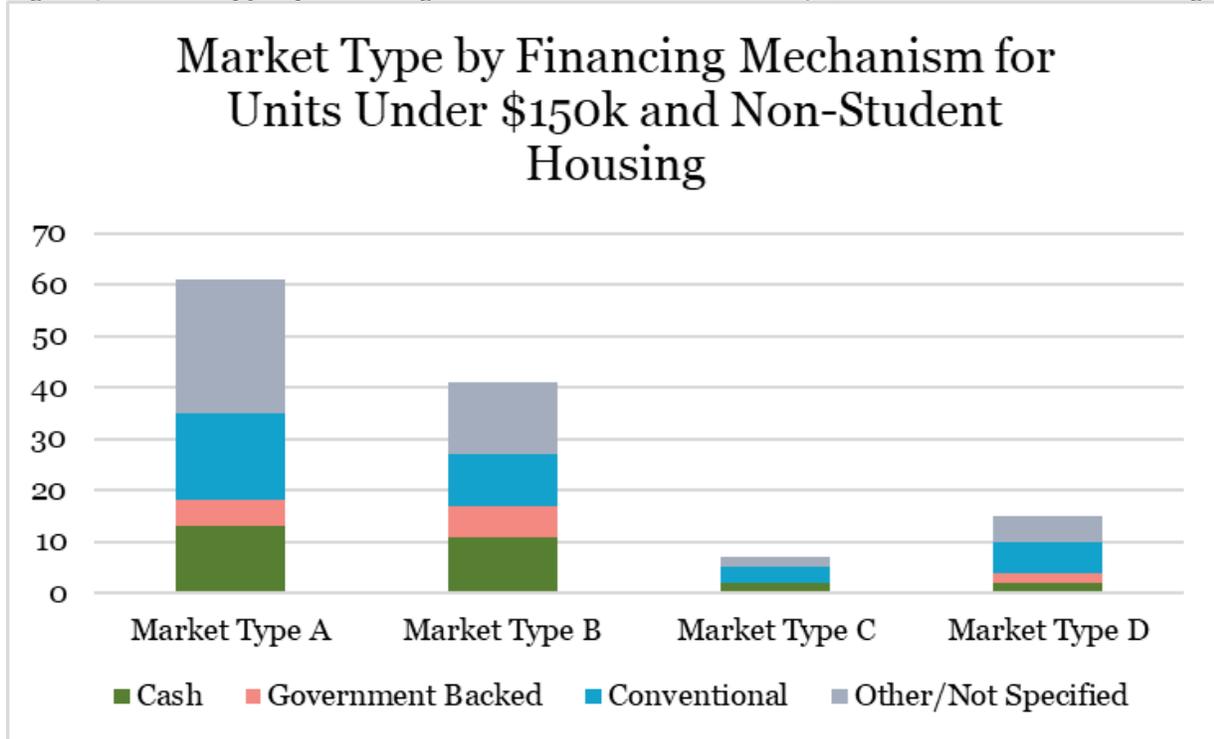
Figure 47 Financing Mechanism by Market Type for Units that Sold for Under \$150,000 and Non-Student Housing



Source: MLS (Jan 1, 2018 to July 13, 2020); Calculations by Mullin & Lonergan Associates, Inc.

The graph below allows one to view the same data in another way, which reveals that the highest number of the most affordable units were sold in Market Type A block groups and that many of these units were cash sales. Because low- and moderate-income households are unlikely to have cash reserves to pay cash for a home, units sold for cash are likely investment properties. This is not known for certain because MLS data does not indicate whether the unit is a primary residence, second home or an investment property.

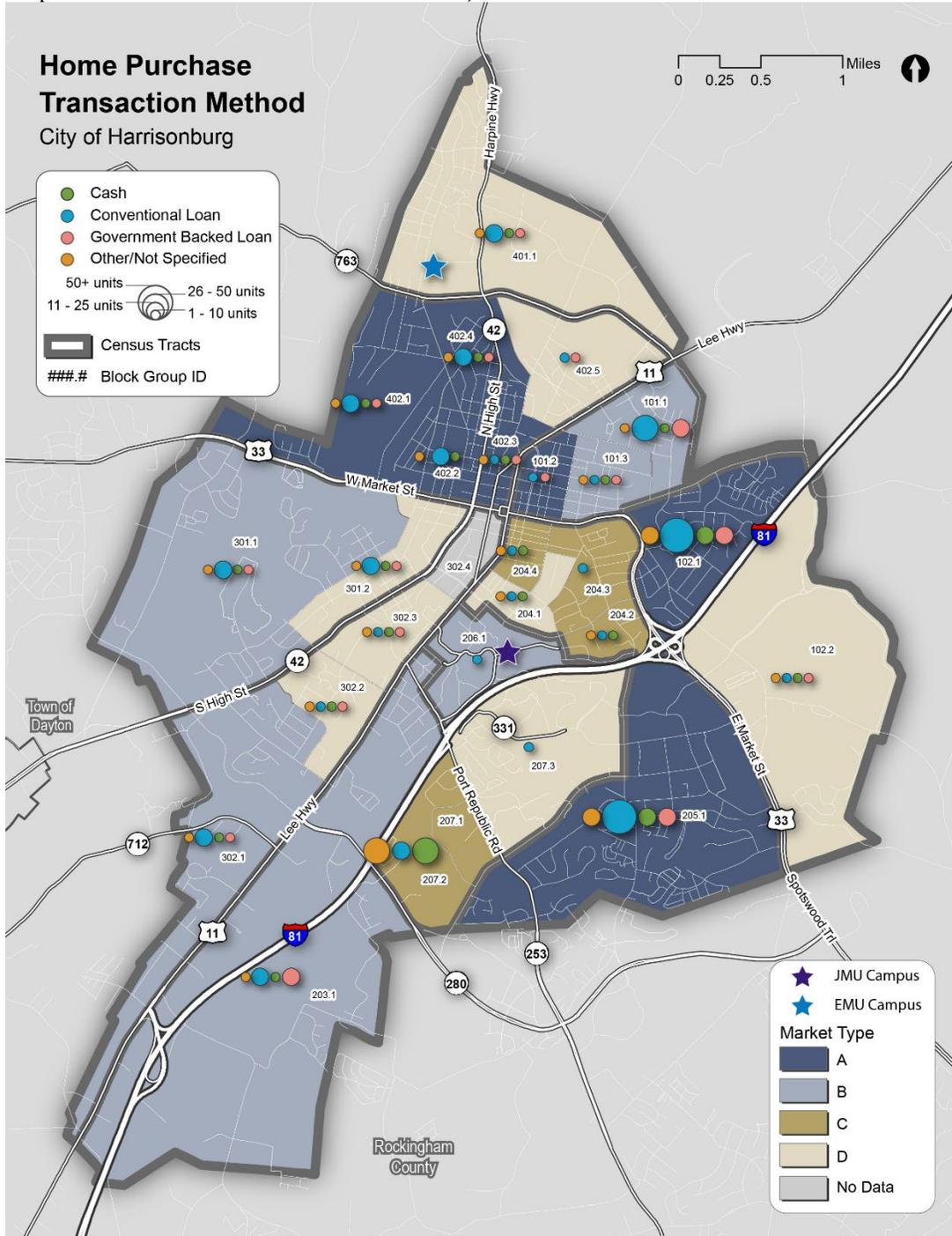
Figure 48 Market Type by Financing Mechanism for Units Under \$150,000 and Non-Student Housing



Source: MLS (Jan 1, 2018 to July 13, 2020); Calculations by Mullin & Lonergan Associates, Inc.

Because the method of financing is not publicly available information, the following map was created to illustrate the locations of the unit sales by financing mechanism summarized at the block group level. The following map shows locations and financing mechanisms for all units sold, including those that were excluded from the analysis of units up to \$150,000. The JMU bus routes are shown in black on the following map; many of the block groups with high cash sales are along the JMU bus route.

Map 10 Home Purchase Transaction Method, all sales



Source: MLS (Jan 1, 2018 to July 13, 2020); Calculations by Mullin & Lonergan Associates, Inc.

## Appendix H: Analysis of City of Harrisonburg’s Real Estate Division Data

The following analysis makes use of the City of Harrisonburg’s Real Estate Division data. The dataset is used to supplement the findings in the MLS data (see Appendix G) because this data source will include all property transactions including those that did not involve the services of a real estate agent and therefore were not listed in the MLS database.

### ASSUMPTIONS

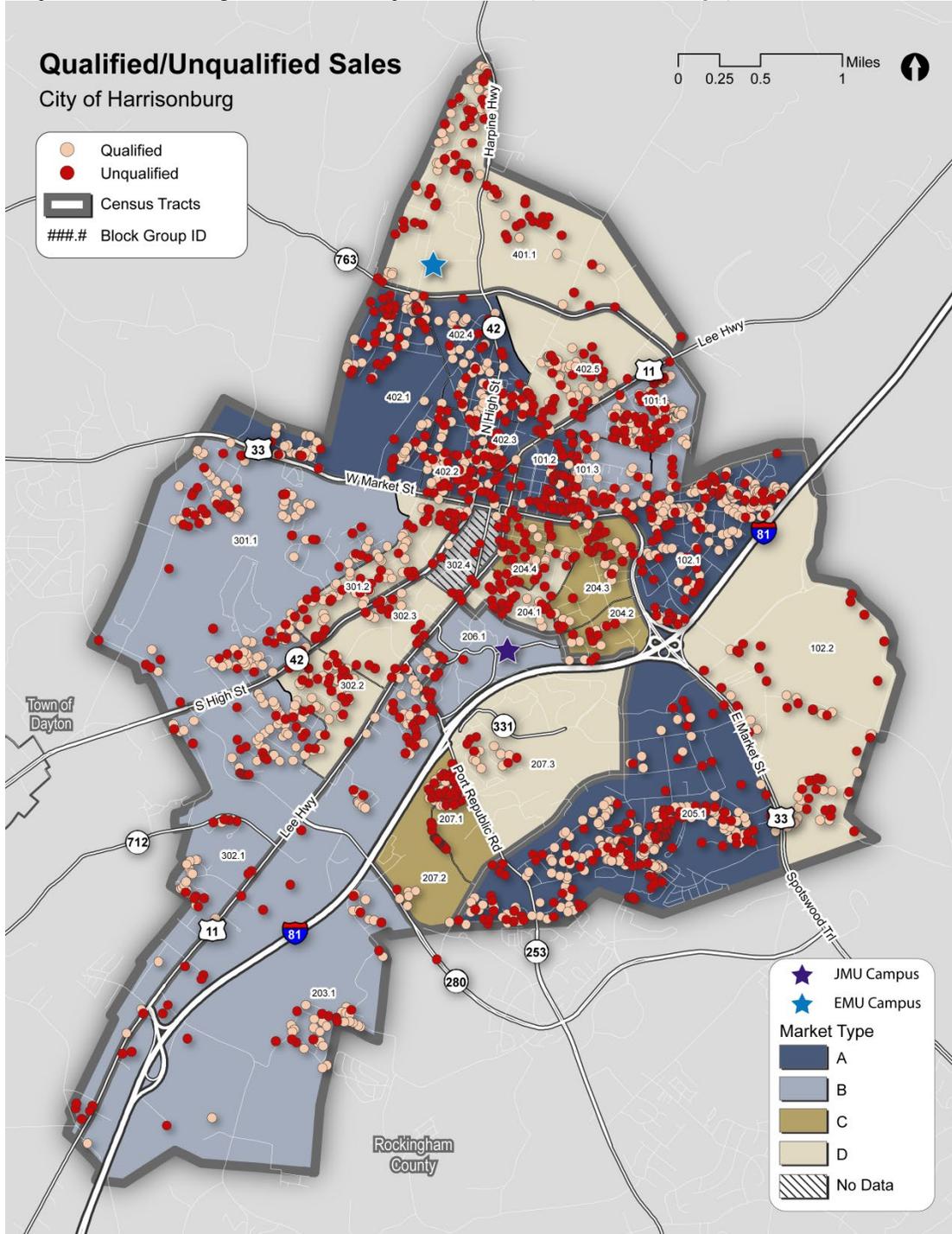
The dataset includes fields such as the property location, the billing address of the property owner and the sale price that can be used to determine if a particular property is likely an investment property or an owner-occupied unit as well as to place each unit into an affordability tier. The following assumptions were made with respect to the data and filtering the data:

1. Properties listed as “Qualified” are those that are included in the City’s real estate assessment analysis, which is required by the Commonwealth. This *excludes* properties in which, for example, there is a familial relationship between the buyer and seller that frequently results in sale prices significantly below market value. The analysis uses only those transactions that are classified as “Qualified” by the Real Estate Division.
2. As with the MLS data, unit sales located in the following developments, which are known to be traditionally off-campus college student housing, were excluded: Camden Townes, Campus View Condos, College Station, Hunters Ridge, Madison Manor, Pheasant Run and University Court.
3. A unit was considered to be owner-occupied if the first six characters of the property street address and billing address were identical. Making this assumption was necessary because of the data quality. For example, doing a direct match would result in errors because “St” and “Street” are not identical though they have the same meaning. In another example, a street was identified as Grove Street but the billing address was listed as Groove Street. Another data quality issue was the presence of extra spaces, which Excel would not read as an exact match. To avoid a manual, row by row analysis, the first six characters were matched.
4. Using the calculated maximum purchase price as described in Appendix G, a household with income of 80% AMI would be able to afford a unit that sold for approximately \$200,000 (see Figure 41 from Appendix G).

# MAPS

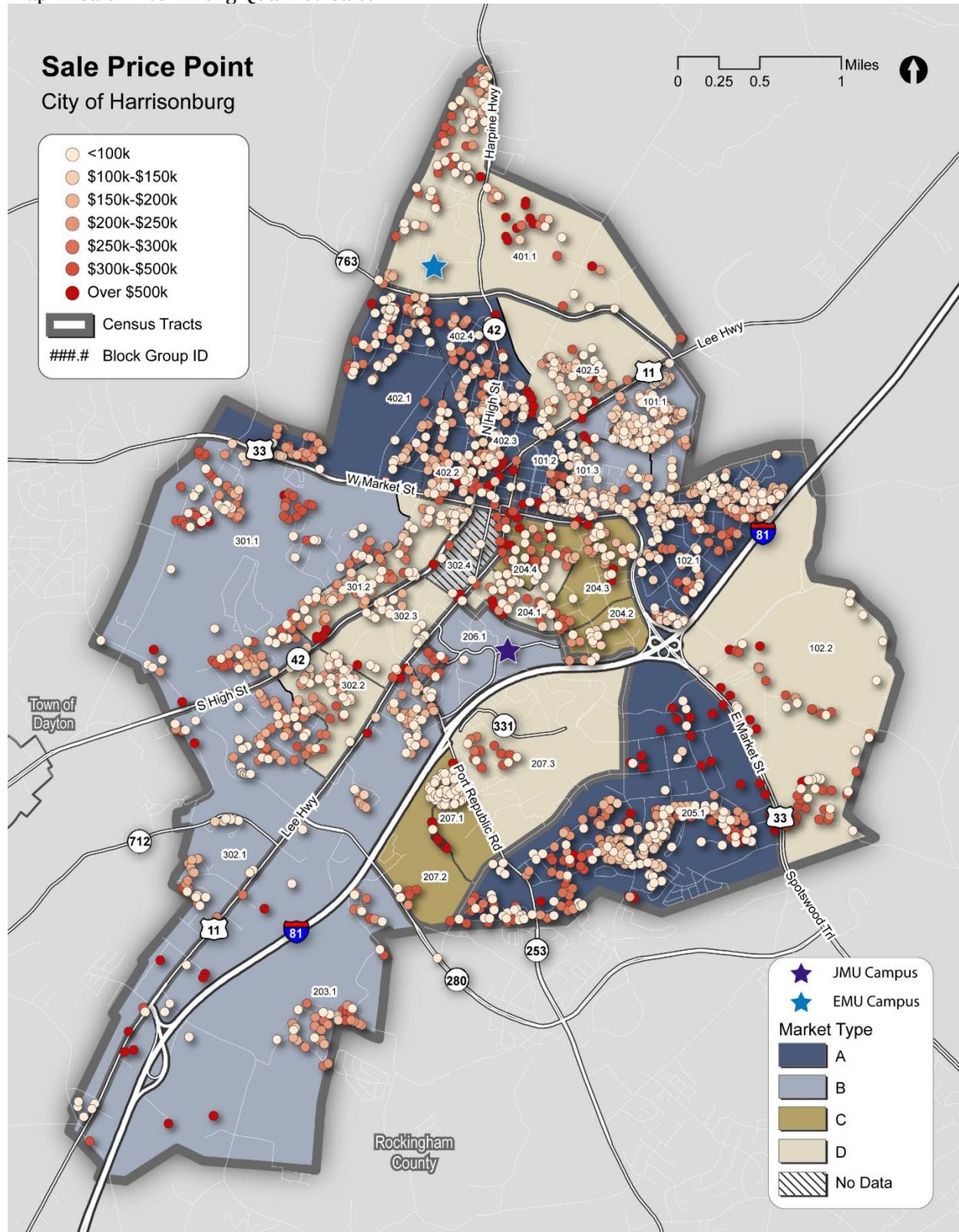
The following maps show the locations of qualified and unqualified sales from January 1, 2018 to October 30, 2020; sale price points; and locations of owner-occupied and investment properties.

Map 11 Locations of Qualified and Unqualified Sales, 2018 - October 30, 2020



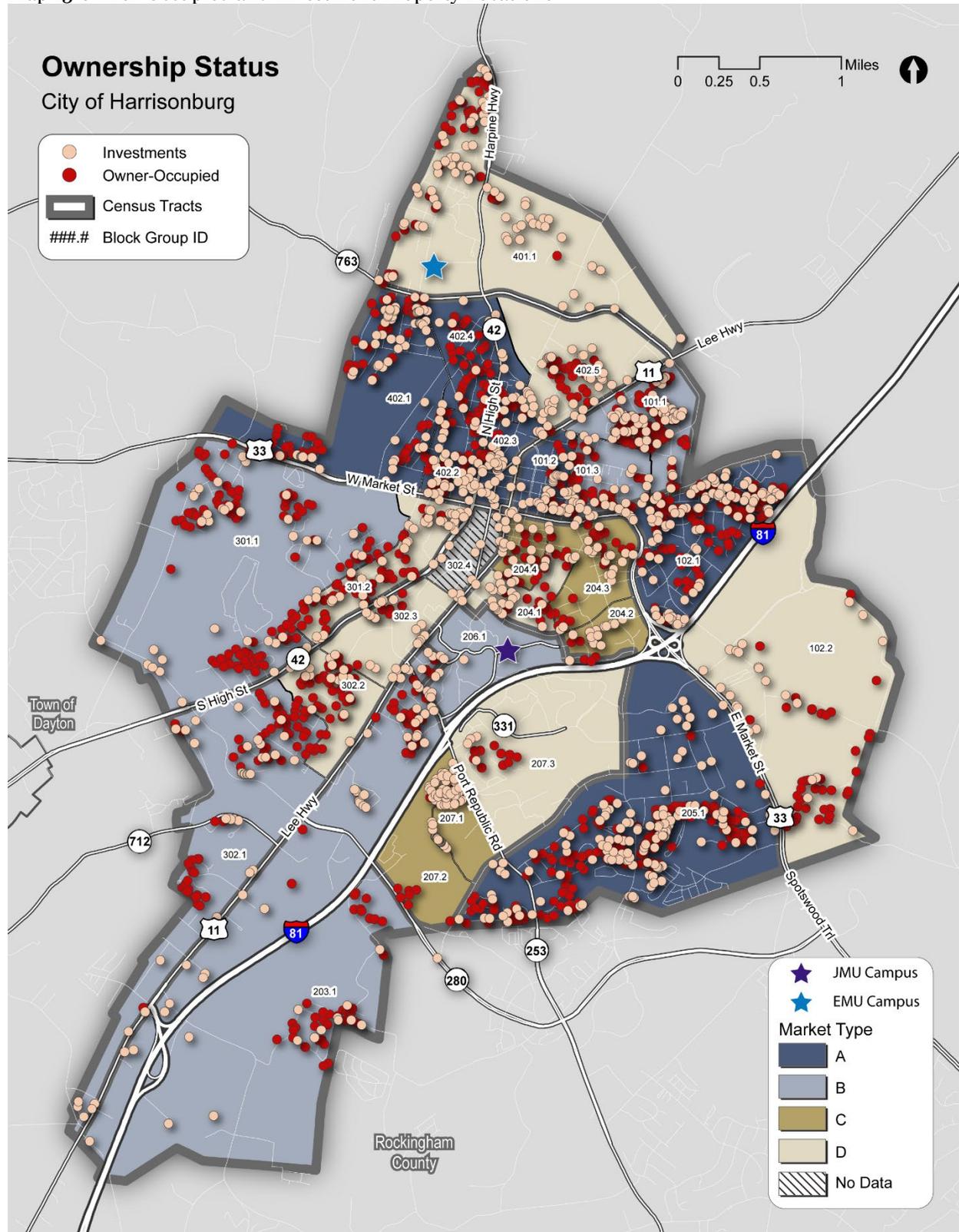
Source: City of Harrisonburg Real Estate Division

Map 12 Sale Price Among Qualified Sales



Source: City of Harrisonburg Real Estate Division

Map 13 Owner-Occupied and Investment Property Locations



Source: City of Harrisonburg Real Estate Division

## FINDINGS

The analysis revealed that of the 2,885 transactions recorded from January 1, 2018 to October 30, 2020:

1. Ten properties were sold to James Madison University via the Visitors of James Madison organization, indicating that a small percentage (less than 1%) of units are being sold to the University.
2. There were 1,533 and 1,352 investment and owner-occupied units, respectively.
3. Of all transactions, 1,573 (55%) were listed as Qualified transactions; there were 605 (38%) investments and 968 (62%) owner-occupied transactions.
4. Of the 605 Qualified investments, 288 (48%) have billing addresses located in Harrisonburg and another 262 (43%) have addresses in Virginia; 55 (9%) units have billing addresses outside of Virginia.
5. Of the 605 Qualified investment properties, 114 (19%) were in developments known locally to traditionally house college students living off-campus. Of the remaining 491 transactions, 58% were for units that sold for under \$200,000, which is the approximate median home sale price identified in the MLS data.

Figure 49 Transactions among Qualified Investment Units not Located in Off-Campus Student Housing by Sale Price

Sale Price Range	Transactions	
	Number	Percentage
<100k	45	9%
\$100k-\$150k	102	21%
\$150k-\$200k	139	28%
\$200k-\$250k	92	19%
\$250k-\$300k	32	7%
\$300k-\$500k	47	10%
Over \$500k	34	7%
Total	491	100%

Source: City of Harrisonburg Real Estate Division

Using \$200,000 as the maximum purchase price for a household with income up to 80% AMI, 44% of qualified owner transactions fall under this price point. An additional 24% of all units sold for between \$200,000 and \$250,000, which is approximately the affordability threshold for a household with an income of 100% AMI.

Figure 50 Transactions among Qualified Owner-Occupied Units by Sale Price

Sale Price Range	Transactions	
	Number	Percentage
<100k	27	3%
\$100k-\$150k	121	13%
\$150k-\$200k	275	28%
\$200k-\$250k	232	24%
\$250k-\$300k	128	13%
\$300k-\$500k	171	18%
Over \$500k	14	1%
Total	968	100%

Source: City of Harrisonburg Real Estate Division

Of the 114 Qualified investment properties located in off-campus college student housing, all sold for under \$200,000.

Figure 51 Qualified Investment Properties Located in Off-Campus College Student Housing

Sale Price Range	Transactions	
	Number	Percentage
<100k	54	47%
\$100k-\$150k	31	27%
\$150k-\$200k	29	25%
Total	114	100%

Source: City of Harrisonburg Real Estate Division

While buying a unit for owner-occupancy in student housing may not be perceived by some as a first choice for potential homebuyers, there were 21 units sold in these off-campus student housing developments that are owner-occupied. There is no way to determine from the data if the units were purchased by students' parents for their child to live in while attending college or if local, non-college student residents are opting to purchase units in these developments as an entry point into homeownership given that the sales prices are among the lowest in the city.

# Appendix I: Home Mortgage Disclosure Act Analysis

The Consumer Financial Protection Bureau releases mortgage application information called Home Mortgage Disclosure Act (HMDA) data. HMDA data is released at the transaction level but because the data contains personal information such as race/ethnicity, income, outcome of the application (approved, denied, etc.) including the reason(s) for denial, etc., the property location is coded to the census tract as opposed to the street address.

## INVESTMENT PROPERTIES

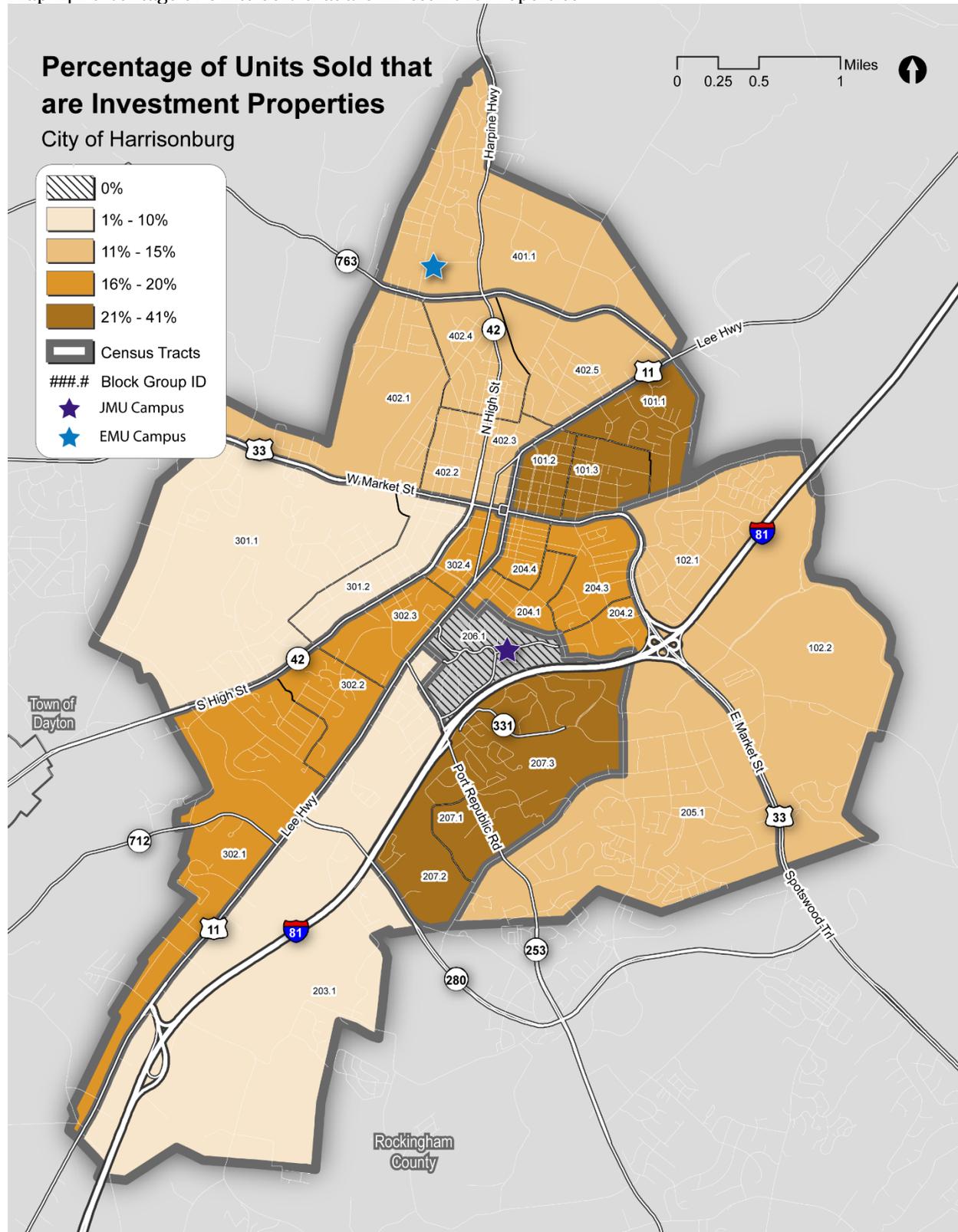
HMDA data includes information on the intended purpose of the unit – primary residence, second home or investment property. Because of changes in reporting requirements over recent years, only 2018 and 2019 data are included in the analysis; while lenders are required to report quarterly, the 2020 data was not yet available at the time the analysis was conducted. Additionally, only loan applications that were approved are included in the analysis.

HMDA data, unlike MLS data, does not contain information on cash sales as HMDA data applies only to transactions that are financed through lenders such as banks, credit unions, etc. and therefore excludes cash sales. HMDA data can include transactions that are not part of the MLS data if the unit was sold without a listing agent but required financing (i.e. for sale by owner or similar).

## ANALYSIS RESULTS

Two census tracts in particular have high levels of investment properties as identified by HMDA. These include tracts 101 and 207, which are located in the northeast and near JMU, respectively. Both are accessible by the JMU bus routes.

Map 14 Percentage of Units Sold that are Investment Properties



Source: HMDA 2018-2019

# Appendix J: Estimation of Housing Need Based on Rental Vacancy Rates and Sales Market Available Inventory

Vacancy rate can be a good indicator of the balance between supply of and demand for units in the rental market. In theory, a “healthy” vacancy rate somewhere between 5-6% provides enough open inventory for renter households to search for and find suitable housing. Vacancies below 5% can exert upward pressure on the market as renters compete for scarce units. Households with higher incomes, therefore, are at an advantage in finding housing as they can afford a greater range of units than households with more limited resources.

Within the sales market, a balanced market would have approximately six months’ worth of inventory on the market at any given time. According to stakeholders, Harrisonburg has just under two months’ of inventory on the market, which contributes to the tight market described in Appendices G and H.

## METHODOLOGY WITHIN THE RENTAL MARKET

Within the rental market, the 2014-2018 ACS indicates a rental vacancy rate of 3.5% whereas the 2013-2017 CHAS data indicates a vacancy rate of 2.0%. Both of these vacancy rates are snapshots in time and are dependent upon when the ACS was conducted. However, these are the best available data sources because, for a city the size of Harrisonburg, there is no publicly-available data source that can provide quarterly vacancy rates. From 2010 to 2018, the vacancy rate has ranged from 2.4% to 4.0% (with a median of 3.5% and an average of 3.3%) according to the ACS.

There are also slight differences in the total number of units available as reported by these data sources; the discrepancy is likely due to the margins of error. In this analysis both data sets are used to provide a range of the number of additional units needed to increase the vacancy rate to 5% (i.e. occupancy rate of 95%). Algebra was used to determine the number of additional units that would be needed immediately to increase the vacancy rate to 5%, which assumes that there is no change in the number of households in the immediate future.

To determine the number of units needed by 2025 to maintain a vacancy rate of 5%, HISTA data was used to determine the projected change in the number of households by tenure.

## Results

There is a need for between 169 and 331 additional units to bring the rental vacancy to 5% in the immediate future depending on whether the CHAS 2.0% or ACS 3.5% vacancy rate is used as the base vacancy rate.

HISTA data indicates that the household size will remain stable until 2025 but that there will be an increase of 589 renter households. To meet the need for housing for additional households as well as attain a vacancy rate of 5%, there is a need for an additional 790 to 951 rental units by 2025. However, there are 335 known rental units in the pipeline to be completed by 2025 bringing the number of needed units down to a range of 455 to 616.

While a specific determination of the number of units by bedroom size and unit type (single family, duplex, etc.) would be beneficial, such an analysis would depend upon the financial feasibility of a development, which is dependent upon many factors including the cost of land and

infrastructure installation. A feasibility analysis for development based on specific sites is beyond the scope of the project. However, the data analysis provided in the study points to a need for greater diversity in the housing stock both in terms of number of bedrooms as well as unit type. For example, within the rental market, 39% of all units are single family structures. Only 5% and 2%, respectively, are duplex and 10-19 unit structures. A combined 20% of all units have 0-1 bedrooms while 39% and 23% are two- and three-bedroom units. There is a known need in the community, as reported by various stakeholders, for smaller units for the creation of supportive housing as well as smaller units for persons wishing to live alone. For example, young professionals attending stakeholder sessions pointed to the need for one-bedroom units because many young professionals no longer wish to live with roommates after graduation. A lack of studio and one-bedroom units makes it difficult for these populations to secure suitable housing. Ensuring a diversity of housing options by unit type and number of bedrooms increases housing choice for residents.

### *Elderly Renter Households*

Of the projected increase of 589 more renter households in 2025, 219 (25%) are estimated to be elderly households over the age of 62. Elderly renter households are expected to grow by 15% whereas the all renters Citywide (including elderly) is expected to grow by 5%. Among elderly households, the largest growth is expected to be among 121-150% AMI and above 150% AMI households at 31% and 32%, respectively. Higher-income households would not be eligible to live in income-restricted units. However, there is also expected to be high growth (of 20%) in the number of elderly renters with incomes between 51-80% AMI. This is a prime income tier for subsidized housing such as LIHTC developments because household income is low enough that residents can qualify but high enough to make the developments financially feasible.

## METHODOLOGY WITHIN THE SALES MARKET

Because the MLS data only includes those sales that were listed with a real estate agent, this dataset will not capture the full range of transactions. For this reason, the City of Harrisonburg's Real Estate Division's dataset was used to estimate the number of monthly transactions. The data was filtered in the following way:

1. All qualified, residential sales were included.
2. Among the unqualified sales, those for which Validity Code=1 were included as these indicate sales that were not arm's length (i.e. a sale between family members). Only residential sales were included.

## Results

Once the data was filtered as described above, there were 1,660 transactions from January 1, 2018 to October 30, 2020 for a total of 34 months; this is equivalent to an average of 49 transactions per month. A six-month supply, therefore, is 294 units. Because stakeholders reported that Harrisonburg has an inventory of approximately two months, there is a need for an additional 196 units on the market to bring the available sales inventory from a two-month supply to a six-month supply. While there is no way to know that having an additional 196 units would mean that all units would be on the market, this is the minimum number of units needed to balance the sales market.

HISTA data projects an additional 362 owner households in 2025. Assuming the same monthly inventory need of 49 units, the total number of units in the sales market in 2025 would be 558 units, which includes the 196 units that are needed now.

## ESTIMATION OF THE COST TO CONSTRUCT ADDITIONAL UNITS

The following calculations for both the rental and the sales markets provide the cost to build the additional units by 2025.

### Assumptions

The following assumptions are made:

1. The calculations are done in 2020 dollars and are not adjusted for projected inflation.
2. The cost of land acquisition is not included.
3. The cost of infrastructure such as building roadways, water and sewer mains, sidewalks, streetlights and/or multi-modal path is not included.
4. Two-bedroom units range in size from 1,200 to 1,500 square feet while three-bedroom units range in size from 1,500 to 1,800 square feet.
5. The cost to build rental and sales units is the same at approximately \$120 per square foot for a three-bedroom unit and \$157 per square foot for a two-bedroom unit. The increase in cost per square foot for smaller units is attributed to having fixed costs such as the HVAC system, a kitchen, and bathrooms that are associated with a structure independent of whether there are two- or three-bedrooms.
6. The cost of construction calculations are limited to single family and townhomes up to eight units. As per stakeholder comments, there is a 2-3% cost savings for each additional attached unit (i.e., a duplex results in a 2-3% savings over building a single family, a triplex would have a 4-6% savings over a single family, and so forth).

## Rental Market

The analysis indicates that there is a need for 790 to 951 additional rental units in 2025 based on current vacancy rates and projected increases in the number of renter households. However, there are 335 known rental units in the pipeline to be completed by 2025 bringing the number of needed units down to a range of 455 to 616.

Depending on the unit mix (single family versus townhomes of up to eight attached units) and the number of bedrooms, the estimated cost of construction – exclusive of land and infrastructure as described in the assumptions – is approximately \$74M to \$133M. These estimates are based on the cost of construction estimates provided by for-profit developers. Non-profit developers, such as Habitat for Humanity, may be able to build units for less because of their business models. For example, Habitat utilizes volunteers, which reduces labor costs significantly.

Figure 52 Estimated Cost per Square Foot by Number of Bedrooms and Single Family/Townhomes

Number of Bedrooms	Number of Units							
	1	2	3	4	5	6	7	8
Three-Bedroom	\$120	\$118	\$115	\$113	\$111	\$108	\$106	\$104
Two-Bedroom	\$157	\$154	\$151	\$148	\$145	\$142	\$139	\$136

Source: Stakeholder input; calculations by Mullin & Lonergan Associates, Inc.

Figure 53 Cost to Build Each Unit by Number of Bedrooms and Single Family/Townhomes

Square Footage	Number of Units							
	1	2	3	4	5	6	7	8
1200	\$188,400	\$184,632	\$180,939	\$177,321	\$173,774	\$170,299	\$166,893	\$163,555
1800	\$216,000	\$211,680	\$207,446	\$203,297	\$199,232	\$195,247	\$191,342	\$187,515

Source: Stakeholder input; calculations by Mullin & Lonergan Associates, Inc.

Figure 54 Estimated Cost to Build 455 Rental Units by Number of Bedrooms and Single Family/Townhomes

Square Footage	Number of Units							
	1	2	3	4	5	6	7	8
1200	\$85,722,000	\$84,007,560	\$82,327,409	\$80,680,861	\$79,067,243	\$77,485,899	\$75,936,181	\$74,417,457
1800	\$98,280,000	\$96,314,400	\$94,388,112	\$92,500,350	\$90,650,343	\$88,837,336	\$87,060,589	\$85,319,377

Source: Stakeholder input; calculations by Mullin & Lonergan Associates, Inc.

Figure 55 Estimated Cost to Build 616 Rental Units by Number of Bedrooms and Single Family/Townhomes

Square Footage	Number of Units							
	1	2	3	4	5	6	7	8
1200	\$116,054,400	\$113,733,312	\$111,458,646	\$109,229,473	\$107,044,883	\$104,903,986	\$102,805,906	\$100,749,788
1800	\$133,056,000	\$130,394,880	\$127,786,982	\$125,231,243	\$122,726,618	\$120,272,086	\$117,866,644	\$115,509,311

Source: Stakeholder input; calculations by Mullin & Lonergan Associates, Inc.

*Sales Market*

Within the sales market, the same set of assumptions are made as for the rental market. There is an estimated need for an additional 482 units by 2025 (558 total needed with 76 units in the pipeline), which is estimated to cost between \$79M and \$104M.

Figure 56 Estimated Cost per Square Foot by Number of Bedrooms and Single Family/Townhomes

Number of Bedrooms	Number of Units							
	1	2	3	4	5	6	7	8
Three Bedroom	\$120	\$118	\$115	\$113	\$111	\$108	\$106	\$104
Two Bedroom	\$157	\$154	\$151	\$148	\$145	\$142	\$139	\$136

Source: Stakeholder input; calculations by Mullin & Lonergan Associates, Inc.

Figure 57 Cost to Build Each Unit by Number of Bedrooms and Single Family/Townhomes

Square Footage	Number of Units							
	1	2	3	4	5	6	7	8
1200	\$188,400	\$184,632	\$180,939	\$177,321	\$173,774	\$170,299	\$166,893	\$163,555
1800	\$216,000	\$211,680	\$207,446	\$203,297	\$199,232	\$195,247	\$191,342	\$187,515

Source: Stakeholder input; calculations by Mullin & Lonergan Associates, Inc.

Figure 58 Estimated Cost to Build 482 Sales Units by Number of Bedrooms and Single Family/Townhomes

Square Footage	Number of Units							
	1	2	3	4	5	6	7	8
1200	\$90,808,800	\$88,992,624	\$87,212,772	\$85,468,516	\$83,759,146	\$82,083,963	\$80,442,284	\$78,833,438
1800	\$104,112,000	\$102,029,760	\$99,989,165	\$97,989,382	\$96,029,594	\$94,109,002	\$92,226,822	\$90,382,286

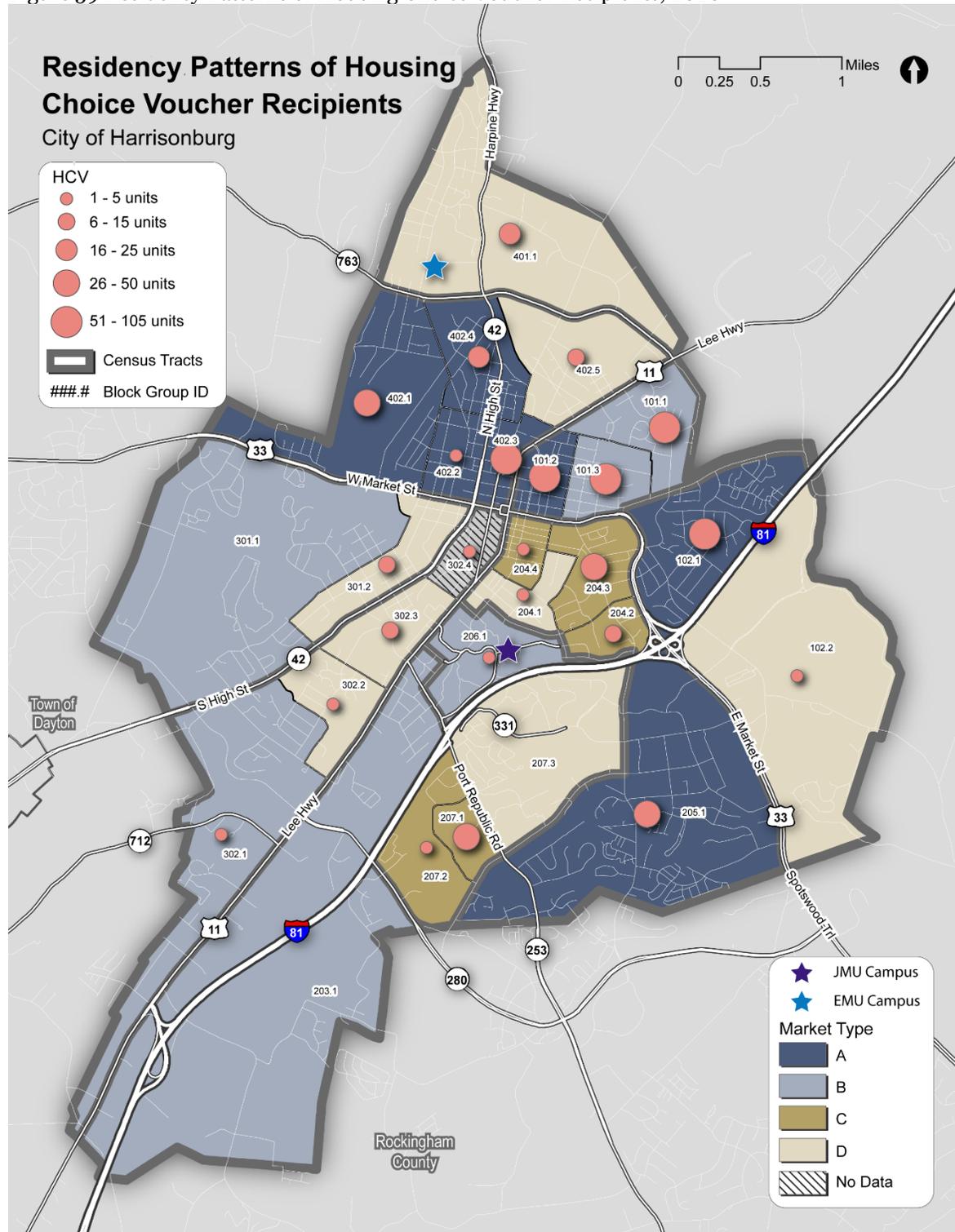
Source: Stakeholder input; calculations by Mullin & Lonergan Associates, Inc.

## Appendix K: Assisted Inventory and Housing Choice Vouchers

The following is a list of the identified assisted inventory:

Project Name	Address	Total Subsidized Units	Target Tenant	Expiration Date	Profit Motive of Owner	Market Type
J.R. Polly LineWeaver	265 Main St	61	Elderly	2023	Non-Profit (HRHA)	A
Lineweaver Annex Apartments	265 N. Main St	60	Elderly/Disabled	2023	Non-Profit (HRHA)	A
Chestnut Ridge I	181 Chestnut Ridge Dr	100	Family	2028	Profit Motivated	A
Chestnut Ridge II	199 Chestnut Ridge Dr	48	Family	2029	Profit Motivated	A
Heritage Haven (VMRC)	1501 Virginia Ave	150	Elderly	2036	Non-Profit	D
Mosby Heights Apartments	2552 Mosby Ct	112	Disabled	2036	Profit Motivated	B
Harris Gardens Sec II	215 Vine St	99	Family	2037	Profit Motivated	B
Franklin Heights	Scattered Site	129	Family	2039	Non-Profit (HRHA)	
Colonnades at Rocktown II	351 N Mason St	60	Family	2041	Profit Motivated	A
Commerce Village	181 and 241 Commerce Dr	30	Family	2046	Non-Profit (HRHA)	B

Figure 59 Residency Patterns of Housing Choice Voucher Recipients, 2020



Source: HRHA

The Housing Choice Voucher (HCV) waiting list identifies several demographic and housing needs of the households on the list. This includes applicant race, ethnicity, number of bedrooms needed, household size, age qualification (adult, near elderly, elderly, extremely elderly), and if applicant is disabled. As of July 2020, there were 2,707 households on the HCV waiting list. Twenty-two percent of those on the waiting list identified as being disabled. Of all the households on the waiting list, 35% are categorized as elderly, near elderly and extreme elderly.

Thirty-seven percent of those on the waiting list need a two-bedroom unit, 29% need a three-bedroom unit and 23% need a one-bedroom unit.

Figure 60 Housing Choice Voucher Waiting List (Age Qualification and Disability)

July 2020 HCV Waiting List Age Qualification and Disability			
Age Qualification	Disabled	Not Disabled	Grand Total
Adult	384	1961	2345
Elderly	95	77	172
Extreme Elderly	8	19	27
Near Elderly	103	60	163
Grand Total	590	2117	2707

Source: Harrisonburg Redevelopment and Housing Authority, July 2020

Figure 61 Housing Choice Voucher Waiting List Household Size and Unit Size Demand

Household Size	One-Bedroom	Two-Bedroom	Three-Bedroom	Four-Bedroom	Five-Bedroom	Six-Bedroom	Grand Total
0			1				1
1	543	253	43	13	1		853
2	70	541	66	2	3		682
3	2	160	350	15			527
4	1	41	210	79	1		332
5		7	83	82	12		184
6			19	46	14		79
7	1	1	5	9	10		26
8			1	8	5	1	15
9				2	3		5
10					2		2
13						1	1
Grand Total	617	1,003	778	256	51	2	2,707

Source: Harrisonburg Redevelopment and Housing Authority, July 2020

## Appendix L: Potential Resources to Create Supportive Housing

The table on the following pages indicates possible funding sources to create supportive housing.

Figure 62 Potential Resources for Funding Supportive Housing

Potential Resources	Acquisition	New Construction	Rehab	Operations	Rental Assistance	Supportive Services	Targeted Supportive Housing Populations
<b>Federal Government Programs</b>							
Community Development Block Grant	X		X				
Continuum of Care Program	X	X	X	X	X	X	Homeless/Chronically Homeless
Housing Opportunities for Persons with AIDS	X	X	X	X	X	X	Persons living with HIV/AIDS
HUD- Veteran Affairs Supportive Housing (VASH)					X	X	Homeless Veterans
Low Income Housing Tax Credits	X	X	X				
National Housing Trust Fund	X	X	X	X	X		
Section 202 Supportive Housing for the Elderly	X	X	X		X		Seniors
Housing Choice Vouchers					X		
Section 8 Mainstream					X		
Section 811 Supportive Housing for Persons with Disabilities	X	X	X		X		
Section 811 Project Rental Assistance (PRA)					X		Persons with disabilities
VA Supportive Services for Veteran Families					X	X	Veterans
Community Services Block Grant				X	X	X	
<b>State Government Programs</b>							
Affordable and Special Needs Housing (ASNH) Program (includes HOME, State Housing Trust Fund, National Housing Trust Fund, and State Permanent Supportive Housing)		X	X				

Potential Resources	Acquisition	New Construction	Rehab	Operations	Rental Assistance	Supportive Services	Targeted Supportive Housing Populations
Medicaid						X	Waivers often required depending on disability
Virginia Housing Trust Fund: Homeless Reduction Grant		X				X	Predevelopment grants for rental projects serving chronically homeless
Department of Behavioral Health and Development Services (DBHDS) Permanent Supportive Housing				X	X	X	Adults with serious mental illness (SMI); Patients in state psychiatric facilities who are interested and eligible for PSH, or 2. Residents of supervised residential settings (e.g., Assisted Living Facilities, group homes) who can live more independently, or 3. Chronically homeless, or literally homeless and at-risk of becoming chronically homeless, or 4. Unstably housed and frequent users of hospital or criminal justice system interventions

Potential Resources	Acquisition	New Construction	Rehab	Operations	Rental Assistance	Supportive Services	Targeted Supportive Housing Populations
Housing Choice Voucher Set-aside for DOJ Target Population					X		Individuals with Intellectual/Developmental Disabilities who are in the DOJ target population
<b>Private/Local Programs</b>							
Local General Funds	X	X	X	X	X	X	
Social Impact Bonds						X	
Real Estate Tax Relief for Seniors/Person with Disabilities					X		Seniors and persons with disabilities

# Appendix M: Supportive Housing

Figure 63 Essential Characteristics of Supportive Housing

Permanence and Affordability	Supportive Services	Integration	Emphasis on Choice	Low Barriers to Entry
Typically pay no more than 30% of their income for rent.	Services are housing oriented (aim to help tenant remain housed).	Tenants are able to live independently in apartments or single-family homes in residential neighborhoods.	Maximizes client choice, in clients' housing options and the services they receive.	Providers do not require clients to hit benchmarks before moving into housing or put other screening barriers in the way.
Same rights and responsibilities as other tenants:  Lease in their name	Services are multi-disciplinary (may involve multiple service agencies working together)	Have access to public transportation, grocery stores, parks, and other neighborhood amenities common to all other residents		
Right to privacy in unit	Services are voluntary but assertive			
Cannot be evicted for reasons unrelated to being a good tenant				

Figure 64 Supportive Housing Inventory

Agency	Units	Target Population
Harrisonburg Redevelopment and Housing Authority	30 units (15 VASH)	Veterans; chronically homeless
Harrisonburg Redevelopment and Housing Authority	75 mainstream vouchers	Chronically homeless; individuals returning from institutions
HRD Harrisonburg Redevelopment and Housing Authority A	50 Family Unification Vouchers	Families/eligible youth involved with Public Child Welfare Agencies (PCWAs)
Harrisonburg-Rockingham Community Services Board (partnership with HRDA)	30 Department of Behavioral Health and Development Services Permanent Supportive Housing for Adults with Serious Mental Illness <sup>3</sup>	Chronically homeless; individuals returning from institutions
Northwestern Community Services	52 beds CoC PSH*	Chronically homeless

\*Note: These beds are part of the CoC's inventory and are available for persons within the CoC's jurisdiction including the City of Harrisonburg.

There are a number of additional housing programs and services in the City of Harrisonburg working with the populations identified as having needs consistent with supportive housing, however these programs do not meet all of the essential characteristics of supportive housing and are not included in the inventory above. Housing options such as transitional housing, rapid rehousing, recovery housing, and group home models are an integral part of the housing and services continuum needed for special populations and should be included when discussing the complete system of care.

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<sup>3</sup> CSB awarded grant in March 2020, yet it is not fully operational at this time.

## HOUSING AND RENTAL SUBSIDY

The SSI program is a cash assistance program that provides monthly benefits to low-income aged, blind, or disabled persons in the United States. The states and other jurisdictions have the option of supplementing their residents' SSI payments and may choose to have the additional payments administered by the federal government. As of 2018, only eleven states and the District of Columbia supplement residents' SSI payments. The 2020 SSI federal benefit rate (FBR) for an individual living in his or her own household and with no other countable income is \$783 monthly.<sup>4</sup> If using HUD's definition for housing affordability, an individual receiving SSI can afford \$235 a month in rent. The median monthly rent for a one-bedroom unit in Harrisonburg is \$621, two and a half times more than the amount someone with SSI can afford. To rent an average priced unit in the City, an individual receiving SSI would need an additional subsidy.

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<sup>4</sup> Social Security Office of Retirement and Disability Policy, *Supplemental Security Income Program Description and Legislative History*, Annual Statistical Supplement, 2018.  
<https://www.ssa.gov/policy/docs/statcomps/supplement/2018/ssi.html#:~:text=The%202018%20SSI%20federal%20benefit,SSI%20began%20in%20January%201974>.

Figure 65 Number of Social Security Income recipients in State and City, December 2018

	City of Harrisonburg Number	Percentage	Commonwealth of Virginia Number	Percentage
Total Population	53,391		8,517,685	
Under 18	8,801	16.5%	1,869,640	22%
18-64	37,612	70.4%	5,329,820	62.6%
65+	6,978	13.1%	1,318,225	15.5%
<b>SSI by Type</b>				
	City of Harrisonburg Number	Percentage	Commonwealth of Virginia Number	Percentage
SSI- aged	135	12.6%	17,643	11.3%
SSI-blind/disabled	928	87.3%	138,349	88.7%
SSI (total)	1,063	1.9%	155,992	1.8%
<b>SSI by Age</b>				
	City of Harrisonburg Number	Percentage	Commonwealth of Virginia Number	Percentage
Under 18	147	13.8%	21,963	14.1%
18-64	671	63.1%	98,961	63.4%
65 or older	245	23.0%	35,068	22.5%

Data Source: ACS 2018; SSI Recipients by State and County, 2018

## CONTINUUM OF CARE FUNDING

The CoC Program is an annual, national competitive application process. The CoC's maximum award amount is based on the CoC's Preliminary Pro Rata Need (PPRN) and Annual Renewal Demand (ARD) or the sum of the annual renewal amount for all HUD CoC Program funded projects before any adjustments to allocations based on Fair Market Rent changes. The higher of the PPRN or ARD for the CoC is the base of the maximum award amount for the CoC<sup>5</sup>.

HUD encourages CoCs to prioritize PSH beds for chronically homeless adults. Communities who prioritize PSH beds for the chronically homeless are awarded more points during the competitive application process.

## HOUSING CHOICE VOUCHERS

The Urban Institute 2018 *A Pilot Study of Landlord Acceptance of Housing Choice Vouchers* found that "landlords were more likely to deny voucher holders in low poverty areas compared with high-poverty areas." Yet in communities "where voucher holders are a protected class under local source-of-income antidiscrimination laws, denial rates were lower compared with sites without such protections (The Urban Institute, 2018)." The City of Harrisonburg should track any changes in landlord engagement in light of Virginia's recent bill outlawing discrimination based on income.

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<sup>5</sup> 24 CFR § 578.17 - Overview of application and grant award process.

## SUPPORTIVE SERVICES

Many supportive housing advocates encourage leveraging Medicaid as a source of services funding for supportive services. Virginia's Medicaid expansion provides coverage to a greater number of people. In 2020, childless adults and persons with a disability are eligible with an annual income at or below \$17,609.<sup>6</sup> Currently, a limited number of housing related services are eligible for reimbursement under Virginia's Medicaid expansion. In 2018, Virginia's Department of Medical Assistance Services (DMAS) submitted a waiver, Creating Opportunities for Medicaid Participants to Achieve Self Sufficiency (COMPASS) to provide housing support benefits for a targeted group of high-need Medicaid eligible members. As of January 2020, DMAS is negotiating the COMPASS waiver Special Terms and Conditions with The Centers for Medicare and Medicaid Services.<sup>7</sup>

According to the Virginia Department of Behavioral Health and Developmental Services (DBHDS), Virginia Developmental Disability Home and Community-Based Services (HCBS) waivers are how people with a developmental disability (DD) receive services and supports. DBHDB notes the following services and supports can include:

- Services that provide medical care,
- Supports for employment
- Supports for community living
- Behavioral interventions, and
- Other items like medical goods and assistive technology that help people avoid living in a hospital, nursing home, or other institution.

### Calculating Needs Consistent with Supportive Housing

While there is no widely known formula for calculating supportive housing needs, many communities have been able to use local data sources to estimate. M&L provided an analysis of housing for populations that require supportive services as identified by the City of Harrisonburg. These populations include persons with disabilities, persons with serious mental illness, persons qualifying under the Commonwealth of Virginia Olmstead ruling, persons experiencing homelessness and persons transitioning from institutions. Data was collected from a number of sources including American Community Survey, Rockingham County Sheriff's Office, Virginia Department of Behavioral Health and Developmental Services and VA-513 Western Virginia CoC Homeless Management Information System (HMIS).

This study reviews statistical prevalence data to estimate the probability that individuals in Harrisonburg meet one or more definitions of disability or life event that would be consistent with the need of supportive housing. However, it should be emphasized that the prevalence figures estimate the number of people who are likely to have a certain condition, not how many are low income and are likely to seek services related to that condition. In the following sections, prevalence data is analyzed along with CHAS data on the probably of being 0-50% AMI, national and local estimates of the probability of needing supportive services and other relevant information to provide as careful as possible estimate of the number of people with need consistent with supportive housing in Harrisonburg.

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<sup>6</sup> Virginia Department of Medical Assistance Services, 2020

<sup>7</sup> Virginia Department of Housing and Community Development, Health and Housing Strategy for Virginians with Serious Mental Illness: A Report to the General Assembly, January 2020

To calculate the needs consistent with supportive housing for the City of Harrisonburg, a Monte Carlo simulation was prepared. This technique is used to understand the impact of risk and uncertainty in prediction and forecasting models. The Monte Carlo simulation allows for various inputs for each target population (population in each category, prevalence rate, probability of being 0-50% AMI and probability of needing supportive services). Figures 67 through 74 below indicate the Monte Carlo simulation inputs for each population type. A summary of the results is provided in Figure 75.

As mentioned throughout this study, the student population in Harrisonburg has a significant impact on the need for affordable housing. To this end, in the calculation of the needs consistent with supportive housing, the population estimates are for Harrisonburg’s population over the age of 18, minus the student population for a total of 39,513. This was used for all populations analyzed unless explicitly noted.

### *Persons with Serious Mental Illness*

The Commonwealth of Virginia has published prevalence estimates specific to the Harrisonburg-Rockingham Community Services Board. These estimates were reported in the Comprehensive State Plan 2014-2020, published by the Virginia Department of Behavioral Health and Developmental Services (DBHDS) in December 2013. This plan is required by Virginia Code and covers a six-year time frame. It should be noted this is the most recent data on prevalence estimates. The 2016-2022 DBHDS Comprehensive State Plan no longer includes prevalence estimates. Supportive housing needs rates used were calculated by The Corporation for Supportive Housing (CSH) in their *Supportive Housing Need Mental Health Systems*<sup>8</sup> report. CSH estimates that 24% of people in residential and institutional care settings for serious mental illness have needs consistent with supportive housing.

Figure 66 Monte Carlo Inputs for Serious Mental Illness

Serious Mental Illness <sup>9</sup>	
Total Population	39,513
Prevalence Rate	4%
Probability of Being 0-50% AMI	45%
Probability of Needing Supportive Services	27%

Source: ACS data, VA DBHDS, CHAS, CSH, calculations by M&L

### *Persons Qualifying under the Commonwealth of Virginia Olmstead Ruling*

The Olmstead decision requires that individuals be served in the most integrated settings appropriate to meet their needs consistent with their choice. In February 2011, the Department of Justice submitted a findings letter to Virginia, concluding that the Commonwealth fails to provide services to individuals with intellectual and developmental disabilities in the most integrated setting appropriate to their needs. On January 26, 2012, Virginia and DOJ reached a settlement agreement.

<sup>8</sup> The Corporation of Supportive Housing, *Mental Health Systems*, Supportive Housing 101 Data May 2019. <https://d115kxunxfiaozz.cloudfront.net/wp-content/uploads/2018/07/Mental-Health-10-7-16.pdf>

<sup>9</sup> Serious Mental Illness means a severe and persistent mental or emotional disorder that seriously impairs the functioning of adults, 18 years of age or older, in such primary aspects of daily living as personal relationships, self-care skills, living arrangements, or employment.

According to the National Core Indicators *In Person Survey (IPS) State Report 2018-2019, Virginia Report*, of the adults surveyed, 806 lived in “other home settings.” This includes own home/apartment; parent or relatives’ home; Foster Care or Host Home (two or more people with a disability); Foster Care; Host Home; or Shared Living (one person with a disability); homeless or crisis bed placement; other; and don’t know. Thirty-seven percent reported living in a parent or relative’s home.

The NCI In-Person Survey is completed with adults with I/DD age 18 and older receiving at least one paid service (in addition to case management) from the state DD service system. The survey instrument includes a “Background Information Section”, which gathers data about the consumer from agency records, and an in-person survey that is conducted face-to-face with the person receiving service (National Core Indicators, 2018-2019).

The Commonwealth of Virginia’s prevalence estimates specific to the Harrisonburg-Rockingham Community Services Board utilize the 1.8% rate recommended by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Administration on Developmental Disabilities (ADD) to state DD Councils to estimate prevalence for individuals with developmental disabilities (I/DD). Supportive housing needs rates used were calculated by The Corporation for Supportive Housing (CSH) in their *Supportive Housing Need I/DD Systems*<sup>10</sup> report. CSH estimates that 33% of people involved with I/DD systems have needs consistent with supportive housing.

Figure 67 Monte Carlo Inputs for Intellectual and Developmental Disabilities

Intellectual Disability/Developmental Disability <sup>11</sup>	
Total Population	39,513
Prevalence Rate	2%
Probability of Being 0-50% AMI	45%
Probability of Needing Supportive Services	37%

Source: ACS data, VA DBHDS, CHAS, CSH, calculations by M&L

### *Persons transitioning from institutions*

The Department of Behavioral Health and Developmental Services (DBHDS) operates eight state hospitals for adults with serious mental illness. Western State Hospital (WSH) is located in Staunton VA, which is approximately 26 miles from the City of Harrisonburg, provides intensive inpatient services including psychiatric, psychological, psychosocial rehabilitation, nursing, support, and ancillary services, and specialized programs for older adults, children and adolescents, and individuals with a forensic status (Department of Behavioral Health and Developmental Services, 2015). Reported in the Comprehensive State Plan 2014-2020, published by the Virginia Department of Behavioral Health and Developmental Services (DBHDS) in December 2013, Western State Hospital operated 246 beds. The 2016-2022 DBHDS Comprehensive State Plan no longer includes state hospital operating capacities. In 2013,

<sup>10</sup> The Corporation of Supportive Housing, *I/DD Systems*, Supportive Housing 101 Data May 2019. [https://d155kunxf1aozz.cloudfront.net/wp-content/uploads/2019/05/IDD\\_web.pdf](https://d155kunxf1aozz.cloudfront.net/wp-content/uploads/2019/05/IDD_web.pdf)

<sup>11</sup> Virginia Mental Health Comprehensive Plan defines developmental disabilities as a diverse group of severe chronic conditions that are due to mental or physical impairment, or both, are manifested before a person reaches age 22, and usually last throughout a person’s lifetime. People with developmental disabilities may have problems with major life activities such as language, mobility, learning, self-help, and independent living. Among the array of developmental disability conditions, the Department and CSBs may serve individuals who have an autism spectrum disorder or a severe chronic disability that is attributable to cerebral palsy, epilepsy, or any other condition, other than mental illness, that is found to be closely related to intellectual disability when the condition results in substantial functional limitations in three or more areas of major life activities and impairment of general intellectual functioning or adaptive behavior that is similar to that of persons with intellectual disability and requires comparable services or supports

Western State Hospital served 683 individuals with an average daily census of 214. There were 530 admissions and 539 separations (discharges). During stakeholder discussions it was noted that there is a discharge planning process established with the state hospital and the Continuum of Care. However, there are a number of people who are discharged who need supportive housing. Data captured by prevalence rates of persons with serious mental illness (SMI) would account for the number of people who might be discharged from Western State Hospital and need supportive housing.

In 2019, the total average daily population for the Rockingham County jail equaled 577 people, which is .012% of the population. Supportive housing needs rates used were calculated by The Corporation for Supportive Housing (CSH) in their *Supportive Housing Need Justice Systems*<sup>12</sup> report. CSH estimates that 19% of people in jail have needs consistent with supportive housing.

Figure 68 Monte Carlo Inputs for Incarcerated Persons

Incarceration	
Total Population	39,513
Prevalence Rate	1%
Probability of Being 0-50% AMI	45%
Probability of Needing Supportive Services	12%

Source: ACS data, Rockingham County Summary data 2019, CHAS, CSH, calculations by M&L

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<sup>12</sup> The Corporation of Supportive Housing, *Justice System, Supportive Housing* 101 Data May 2019. [https://d155kunxfiaozz.cloudfront.net/wp-content/uploads/2019/05/JUSTICE\\_web.pdf](https://d155kunxfiaozz.cloudfront.net/wp-content/uploads/2019/05/JUSTICE_web.pdf)

## Elderly

A survey completed by AARP 2018 *Home and Community Preferences Survey: A National Survey of Adults Age 18-plus* notes that “nearly 80 percent of adults aged 50 and older indicate they want to remain in their communities and homes as they age.” In the City of Harrisonburg, older adults, in general, have higher homeownership rates and more wealth than younger generations. 60.6% own their own home and 39.4% (ACS 2018) rent their residence. However, many older adults live in poverty or in very economically insecure situations. The median household income (including all sources of income) for a household headed by someone age 65 or older was \$39,466 in 2018.

Of the 4,700 people 65 and older, 614 households were renters according to 2018 ACS data. Among these renter households, 62% were likely to have an income between 0-50% AMI. Supportive housing needs rates used were calculated by The Corporation for Supportive Housing (CSH) in their *Supportive Housing Need Aging Adult Systems*<sup>13</sup> report. CSH estimates that 19% of the elderly population identified by the Centers for Medicare and Medicaid Services have needs consistent with supportive housing.

Figure 69 Monte Carlo Inputs and Output for Elderly Households

Elderly	
Total Population (households)	614
Prevalence Rate 0-50% AMI	62%
Probability of Needing Supportive Services	20%

Source: ACS data 2018, CHAS, CSH, calculations by M&L

Note: Households are calculated for elderly instead of persons in with other populations because the ACS provides data for elderly households and not elderly individuals.

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<sup>13</sup> The Corporation of Supportive Housing, *Data Reference*, Supportive Housing 101 Data May 2019. [https://d155kunxfiaozz.cloudfront.net/wp-content/uploads/2019/05/DATAREFERENCES\\_web.pdf](https://d155kunxfiaozz.cloudfront.net/wp-content/uploads/2019/05/DATAREFERENCES_web.pdf)

## Persons with Disabilities

The City of Harrisonburg identified several populations to be studied in this analysis. These included disabling conditions such as serious mental illness and intellectual/developmental disabilities. Data on other specific disabilities was limited. ACS data available in 2018 included cognitive difficulties, hearing difficulties, vision difficulties, self-care difficulties, independent living difficulties and ambulatory difficulties. Of these disability types, only ambulatory disabilities were included from ACS data because there is little research on the supportive housing needs for persons with hearing and vision difficulties. Persons identified in the ACS as having cognitive disabilities are already included in the SMI and I/DD data. In addition, self-care and independent living disabilities include conditions that often require a higher level of care than what is typically provided in supportive housing models and were excluded from this analysis.

During stakeholder outreach, providers noted specifically the need for accessible units. This type of housing unit often is needed by persons with ambulatory difficulties. In 2018, 3.30% of the population had an ambulatory disability<sup>14</sup>. Supportive housing needs rates used were calculated using the Harrisonburg Winchester/Western Virginia CoC Annual Performance Report (APR) for calendar year 2019. Of the 396 homeless individuals, 30 of those were chronically homeless and had a physical disability. This estimates that about 7.5% of chronically homeless individuals have a physical disability. The 7.5% was used to estimates persons with an ambulatory disability have needs consistent with supportive housing.

Figure 70 Monte Carlo Inputs and Output for Persons with Ambulatory Difficulties

Ambulatory Difficulty	
Total Population	39,513
Prevalence Rate	3%
Probability of Being 0-50% AMI	45%
Probability of Needing Supportive Services	7.5%
Number of A Persons Needing Supportive Services	42

Source: ACS data 2018, CHAS, Western VA CoC 2019 APR, calculations by M&L

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<sup>14</sup> United States Census Bureau defines Ambulatory Difficulty as “having serious difficulty walking or climbing stairs”.

Figure 71 Population of Harrisonburg and Virginia with an Ambulatory Disability

	Total	With a Disability	% with disability	Total Virginia	With a Disability	% with disability
Total Noninstitutional	52,674	4,707	8.9%	8,301,038	994,464	12.5%
With an ambulatory difficulty	39,501	1,431	3.60%	(X)	501,572	6.4%
Population under 18 years	4,372	501	11.50%	1,364,782	7,596	0.6%
Population 18 to 64 years	0	2,473	5.00%	5,141,766	224,434	4.4%
Population 65 years and over	5,971	94	1.60%	1,292,388	269,542	20.9%

Source: American Community Survey, 2018

The Commonwealth of Virginia has published prevalence estimates for Drug and Alcohol Dependence specific to the Harrisonburg-Rockingham Community Services Board. These estimates were reported in the Comprehensive State Plan 2014-2020, published by the Virginia Department of Behavioral Health and Developmental Services (DBHDS) in December 2013. This plan is required by Virginia Code and covers a six-year time frame. It should be noted this is the most recent data on prevalence estimates. Supportive housing needs rates were calculated by The Corporation for Supportive Housing (CSH) in their *Supportive Housing Need Individual Homeless Systems report*<sup>15</sup>. CSH estimates that 2% of people engaged with addiction treatment services have needs consistent with supportive housing.

Figure 72 Monte Carlo Inputs and Output for Persons with Drug and Alcohol Dependence

Drug and Alcohol Dependence <sup>16</sup>	
Total Population	39,513
Prevalence Rate	3%
Probability of Being 0-50% AMI	45%
Probability of Needing Supportive Services	3%
Number of A Persons Needing Supportive Services	15

Source: ACS data, VA DBHDS, CHAS, CSH, calculations by M&L

### Persons experiencing homelessness

To calculate rates of persons experiencing homelessness, the Annual Performance Report (APR) was used as the primary source. This report was run in the Continuum of Cares (CoC) Homeless Management Information System (HMIS) for calendar year 2019. During this time, the Harrisonburg Winchester/Western Virginia CoC served 396 persons over the age of 18. Of those, 54 adults were considered “chronically homeless.” HUD defines chronic homelessness as an individual or family that is homeless with a disability and resides in a place not meant for human habitation, a safe haven, or in an emergency shelter, and has been homeless and residing in such a place for at least 12 months or on at least four separate occasions in the last 3 years as long as

<sup>15</sup> The Corporation of Supportive Housing, *Data References*, Supportive Housing 101 Data May 2019. [https://d155kunxfiaozz.cloudfront.net/wp-content/uploads/2019/05/DATAREFERENCES\\_web.pdf](https://d155kunxfiaozz.cloudfront.net/wp-content/uploads/2019/05/DATAREFERENCES_web.pdf)

<sup>16</sup> The Virginia Mental Health Comprehensive State Plan defines substance use disorders (SUDs) are types of mental disorders that are "related to the taking of a drug of abuse (including alcohol), to the side effects of a medication, and to toxin exposure." There are two levels of substance use disorders: substance dependence and substance abuse. Substance Dependence definition is from the Diagnostic and Statistical Manual (DSM IV-TR).

the combined occasions equal at least 12 months.<sup>17</sup> Supportive housing needs rates were calculated by The Corporation for Supportive Housing (CSH) in their *Supportive Housing Need Individual Homeless Systems report*<sup>18</sup>. CSH estimates that 10% of people not identified as chronically homeless and 90% of people identified as chronically homeless have needs consistent with supportive housing.

Figure 73 Monte Carlo Inputs and Output for Persons Experiencing Homelessness and Chronically Homeless

Homeless	
Total Population	39,513
Prevalence Rate	1%
Probability of Being 0-50% AMI	50%
Probability of Needing Supportive Services	11%
Number of A Persons Needing Supportive Services	20
Chronically Homeless	
Total Population (of those homeless)	397
Prevalence Rate	18%
Probability of Being 0-50% AMI	100%
Probability of Needing Supportive Services	94%
Number of A Persons Needing Supportive Services	65

Source: Western VA CoC 2019 APR, CHAS, CSH, calculations by M&L

<sup>17</sup> HUD's Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH): Defining Chronically Homeless Final Rule, December 2015. <https://www.govinfo.gov/content/pkg/FR-2015-12-04/pdf/2015-30473.pdf>

<sup>18</sup> The Corporation of Supportive Housing, *Data Reference*, Supportive Housing 101 Data May 2019. [https://d155kunxfiaozz.cloudfront.net/wp-content/uploads/2019/05/DATAREFERENCES\\_web.pdf](https://d155kunxfiaozz.cloudfront.net/wp-content/uploads/2019/05/DATAREFERENCES_web.pdf)

## Results and Discussion of the Monte Carlo Simulation

The Monte Carlo simulation is a stochastic model, meaning that it is a model based on probabilities. The simulation was run 10,000 times to determine a likely range of units needed for each subpopulation. This was done because several factors in the model are probabilities and in any given run, the model may be “lucky” and pull prevalence rates slightly below the estimated prevalence rates for all variables and therefore result in a low estimate of the number of units needed to meet the need. Alternatively, the model may be “unlucky” in a given trial and pull prevalence rates just above the estimated prevalence rates and result in a high estimate of the number of units needed to meet the need. The model is designed to randomly pull from an estimated distribution with each run. In that way, the simulation is akin to having 10,000 attempts at estimating the units needed to meet the need for supportive housing.

In the tables below, there is a mean, a 5<sup>th</sup> percentile and a 95<sup>th</sup> percentile listed for each subpopulation. The mean is the midpoint estimate among all 10,000 runs of the Monte Carlo simulation. The 5<sup>th</sup> and 95<sup>th</sup> percentiles were used because these values provide the lower and upper bounds, respectively, for 90% of the 10,000 runs. This means that 90% of the time, the estimated number of units needed for any subpopulation will be between the 5<sup>th</sup> and 95<sup>th</sup> percentile calculated for that group. The 5<sup>th</sup> and 95<sup>th</sup> percentiles are useful in understanding the potential range of units needed and the extent to which the range is wide or narrow. When the range is narrow, such as in the case of chronically homeless, planning is simpler because there is greater certainty about the need. In instances in which the range is wider, such as in the case of incarceration, planning for meeting these needs can be more challenging.

While understanding the needs consistent with supportive housing among specific populations is helpful in the planning process, it should be noted these are estimates and will fluctuate depending on population changes, economic events, and other factors impacting persons with disabilities and the housing market. Having a system that can be flexible and responsive is key to providing housing stabilization services to persons who may benefit from a supportive housing model. Many federal and state funded programs lack the flexibility to deliver services in this manner. In order to move toward this model, local existing resources should be retooled and additional local flexible funding streams are needed.

Figure 74 Range of Units Needed

	Drug and Alcohol Dependence	SMI	I/DD	Homeless	Chronically Homeless	Incarceration	Ambulatory Difficulty	Total (non-elderly)
Mean	16	187	117	31	65	33	32	483
5 <sup>th</sup> Percentile	11	161	107	19	63	24	24	445
95 <sup>th</sup> Percentile	21	214	127	43	69	43	44	560

Source: Mullin & Lonergan analysis of prevalence data, CHAS data, national and local estimates of the probability of needing supportive services and other relevant information.

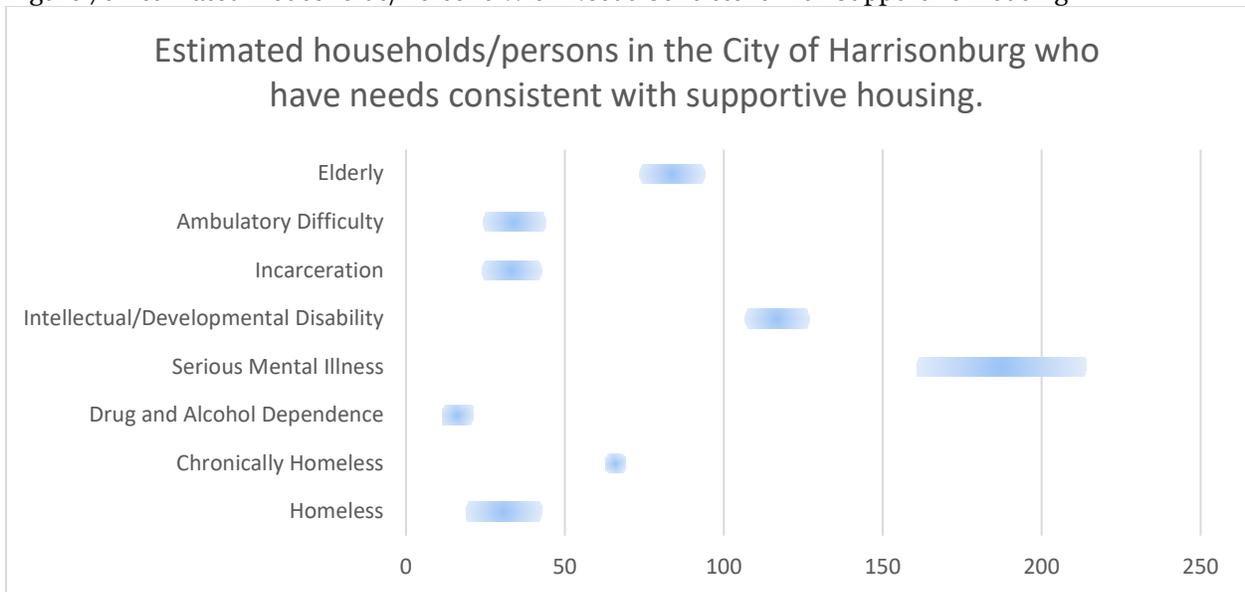
Figure 75 Range of Units Needed for Elderly Persons

	Elderly Households
Mean	84
5th Percentile	74
95th Percentile	94

Source: Mullin & Lonergan analysis of prevalence data, CHAS data, national and local estimates of the probability of needing supportive services and other relevant information.

The graph below illustrates the number of units needed, by subpopulation, to meet the demand of persons/households with needs consistent with supportive housing. The bars are centered on the median as identified in the above tables and illustrate the range from the 5<sup>th</sup> to 95<sup>th</sup> percentiles.

Figure 76 Estimated Households/Persons With Needs Consistent with Supportive Housing



Source: Mullin & Lonergan analysis of prevalence data, CHAS data, national and local estimates of the probability of needing supportive services and other relevant information.

# Appendix N: Projecting Permanent Supportive Housing Needs

The National Alliance to End Homelessness defines permanent supportive housing (PSH) as “an intervention that combines affordable housing assistance with voluntary support services to address the needs of chronically homeless people.” (National Alliance to End Homelessness, 2020)

In order to calculate the Permanent Supportive Housing needs for persons experiencing chronic homelessness, the Supportive Housing Opportunities Planner (SHOP) tool was utilized. The SHOP tool was created by the United States Interagency Council on Homelessness (USICH) in 2017 to allow communities to help communities strengthen their strategies for ending chronic homelessness. The tool was updated using 2019 Point in Time (PIT) data and expanded to provide two additional years of analysis.

Utilizing 2019 PIT data a five-year projection of Permanent Supportive Housing need was calculated.

## INPUTS FIELDS

Field A is the total number of individuals experiencing chronic homelessness in the CoC.

Field B is the estimated percent increase of the number of people experiencing chronic homelessness entered in Field A due to inflow (new people experiencing chronic homelessness entering the homelessness assistance system) and undercount (people experiencing chronic homelessness who were not captured in the number in Field A). USICH’s default value of 30% was used, which represents the estimated average national inflow and undercount factor.

Field C is the number of adult-only supportive housing units (not just units limited to people experiencing chronic homelessness) funded by the CoC or another source as reported in the 2019 Housing Inventory Count.

Field D is the percentage of all adult-only supportive housing units (Field C) that turn over annually. The USICH default value of 15% was used in this analysis, which represents the average annual turnover rate nationally.

Field E is the percentage of the community’s supportive housing inventory (listed in Field C) that is dedicated to persons experiencing chronic homelessness according to the 2019 Housing Inventory Count.

Field F is the percentage of all adult-only supportive housing units (in Field C) prioritized for people experiencing chronic homelessness. The USICH default value of 30% was utilized for this analysis.

Field G, H, I, J, K are the number of newly created supportive housing units (funded through the CoC program and all other sources) that will serve people experiencing chronic homelessness in the future, starting in 2020, 2021, 2022, 2023, and 2024 respectively. At the time of this study, there were no identified new supportive housing units coming online in the 5-year period.

## IMPACTS FIELDS

Field 1 The projected number of individuals experiencing chronic homelessness at the beginning of each year, based on most recent Point In Time Count.

Field 2 Number newly entering or not counted in Point-in-Time count or other data used is the projected number of individuals who are newly experiencing chronic homelessness (inflow) or who were not counted in the Point-in-Time count (or other data source provided in Field A), based on the annualization factor entered in Field B of the Inputs section.

Field 3 Projected annual need is the estimated number of individuals experiencing chronic homelessness based on the Point-in-Time count (or other local data source provided in Field A) and the inflow/undercount in Field 2.

Field 4 Total available supportive housing inventory for households without children is the total adult-only supportive housing inventory captured in Field C, in addition to the newly created supportive housing units available in 2020, 2021, and 2022 (as captured in Fields G, H, and I).

Field 5 Supportive housing units dedicated to chronic homelessness is the total number of units dedicated to people experiencing chronic homelessness as determined by the percentage of all supportive housing units entered in Field E.

Field 6 Annual turnover of dedicated supportive housing units is the number of dedicated turnover units based on the percentage entered in Field D.

Field 7 Total non-dedicated supportive housing for households without children is the total number of supportive housing units that are not dedicated to people experiencing chronic homelessness. Note: Because this tool does not differentiate between whether new units will be dedicated or non-dedicated, this data may not be exact, but the total number of units should still be accurate.

Field 8 Annual number of non-dedicated supportive housing units that will turnover is the estimated number of non-dedicated supportive housing units that will turn over each year based on the percentage entered in Field D.

Field 9 Non-dedicated supportive housing turnover units prioritized for chronic homelessness is the estimated number of units that turn over each year that will be prioritized for people experiencing chronic homelessness, based on the turnover rate entered in Field D.

Field 10 Chronically homeless individuals housed through dedicated turnover supportive housing is the estimated number of individuals experiencing chronic homelessness who will be housed each year, based on the number of dedicated supportive housing units that turn over each year (Field 6).

Field 11 Chronically homeless individuals housed through prioritized turnover supportive housing is the estimated number of individuals experiencing chronic homelessness who will be housed each year based on the number of prioritized turnover supportive housing units (Field 8).

Field 12 Chronically homeless individuals housed through newly created supportive housing is the estimated number of individuals experiencing chronic homelessness who will be housed through newly created supportive housing units made available in 2020, 2021, and 2022, as listed in Fields G, H, and I, respectively.

Field 13 Total number of individuals experiencing chronic homelessness housed is the estimated sum of all individuals experiencing chronic homelessness who will be housed, through dedicated turnover supportive housing, prioritized turnover supportive housing, and newly created supportive housing. (Fields 10 through 12).

Field 14 Number of individuals experiencing chronic homelessness at year-end is the total number of individuals who will be housed (Field 13) subtracted from the estimated annual need (Field 3

Field 15 Percent change since end of 2020 is the estimated percent change in the number of individuals experiencing chronic homelessness for each year from the end of 2020 through the end of 2025.

Figure 77 Inputs to Supportive Housing Opportunities Planner

INPUTS			
A	41	=	Individuals experiencing chronic homelessness (Nationally available 2019 Point-In-Time Count data)
B	30%	=	Annualization factor (based upon projections for inflow and undercount)
C	60	=	Total inventory of supportive housing units for households without children Nationally available 2019 Housing Inventory Count [HIC] data)
D	15%	=	% of supportive housing units that turnover annually (Default: 15%. Adjust based on local data, if available.)
E	53%	=	% of supportive housing dedicated to chronic homelessness (Default: Nationally available 2019 HIC data. Or enter most accurate data for beginning of 2020.)
F	30%	=	% of non-dedicated supportive housing prioritizing people experiencing chronic homelessness
G	0	=	Newly created supportive housing units to become available in 2020
H	0	=	Newly created supportive housing units to become available in 2021
I	0	=	Newly created supportive housing units to become available in 2022
J	0	=	Newly created supportive housing units to become available in 2023
K	0	=	Newly created supportive housing units to become available in 2024

Source: Supportive Housing Opportunities Planner

Figure 78 Impacts of Supportive Housing Opportunities Planner

		<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
<b>1</b>	Number of individuals experiencing chronic homelessness at beginning of year	41	48	57	67	82	101
<b>2</b>	Number newly entering or not counted in Point-in-Time count or other data used	12	14	16	20	24	30
<b>3</b>	Projected annual need	53	62	73	87	106	131
		#	#	#	#	#	#
<b>4</b>	Total available supportive housing inventory for households without children	60	60	60	60	60	60
<b>5</b>	Supportive housing units dedicated to chronic homelessness	32	32	32	32	32	32
<b>6</b>	Annual turnover of dedicated supportive housing units	4	4	4	4	4	4
<b>7</b>	Total non-dedicated supportive housing for households without children	28	28	28	28	28	28
<b>8</b>	Annual number of non-dedicated supportive housing units that will turnover	4	4	4	4	4	4
<b>9</b>	Non-dedicated supportive housing turnover units prioritized for chronic homelessness	1	1	1	1	1	1
<b>10</b>	Chronically homeless individuals housed through dedicated turnover supportive housing	4	4	4	4	4	4
<b>11</b>	Chronically homeless individuals housed through prioritized turnover supportive housing	1	1	1	1	1	1
<b>12</b>	Chronically homeless individuals housed through newly created supportive housing	0	0	0	0	0	0
<b>13</b>	Total number of individuals experiencing chronic homelessness housed	5	5	5	5	5	5
<b>14</b>	Number of individuals experiencing chronic homelessness at year-end	<b>48</b>	<b>57</b>	<b>67</b>	<b>82</b>	<b>101</b>	<b>126</b>
<b>15</b>	Percent change since end of 2020		18%	41%	72%	111%	163%

Source: USICH SHOP Tool, Harrisonburg, Winchester/Western Virginia CoC 2019 PIT and HIC

## Appendix O: Funding Approaches to Supportive Housing

<p>Medicaid</p>	<p>Virginia’s Medicaid expansion provides coverage to a greater number of people. Currently, a limited number of housing related services are eligible for reimbursement under Virginia’s Medicaid expansion.</p>
	<p>Service providers note Medicaid rates do not reimburse enough to sustain ongoing services. There are also long waiting lists for current waivers that would provide supportive services in the community. As of August 2020, Harrisonburg-Rockingham Community Services Board has 212 individuals on the Development Disability (DD) Waiver Waiting list.</p>
	<p>In 2018, Virginia’s Department of Medical Assistance Services (DMAS) submitted a request to expand housing services, Creating Opportunities for Medicaid Participants to Achieve Self Sufficiency (COMPASS). As of January 2020, DMAS is negotiating the COMPASS waiver Special Terms and Conditions with The Centers for Medicare and Medicaid Services.</p>
<p>Veterans Affairs Supportive Housing (VASH)</p>	<p>The U.S. Department of Housing and Urban Development and the U.S Department of Veterans Affairs created a collaborative program to address the permanent supportive housing needs of chronically homeless veterans. The VASH program combines rental assistance vouchers, through public housing authorities and supportive services, through the VA health care services.</p>
	<p>In 2015, HRHA utilized 15 VASH vouchers to create supportive housing for chronically homeless veterans at Commerce Village. Services are provided by the Martinsburg Veterans Administration Medical Center (MVAMC). Additional VASH vouchers have not been pursued due to MVAMC's limited capacity to expand the provision of supportive services.</p>
<p>Continuum of Care (CoC) Program</p>	<p>HUD’s CoC Program funds five program components, including Permanent Supportive Housing (PSH). PSH funds rental assistance and supportive services to chronically homeless households.</p>
	<p>As of the 2019 CoC Program Awards the Western VA CoC was awarded funding for three Permanent Supportive Housing projects, with a total of a 52</p>

	beds, operated by Northwestern Community Services.
	HUD encourages CoCs to prioritize PSH beds for chronically homeless adults. In 2019, only 2 of the 52 beds operated by Northwestern Community Services were prioritized for chronically homeless households.
Housing Choice Vouchers	HCVs can be used to help people rent housing of their choice in the community or they can be used as a project-based subsidy in the development of supportive housing projects.
	HRHA utilized 30 HCVs to create supportive housing for chronically homeless individuals at Commerce Village. Commerce Village provides PSH to chronically homeless and medically vulnerable individuals, and chronically homeless veterans in the City of Harrisonburg.
	In 2019 and 2020, HRHA applied for and was awarded 75 Mainstream Vouchers by HUD. Mainstream Vouchers assist non-elderly persons with disabilities. These individuals are either experiencing homelessness or returning/reentering into the community from institutions.

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## Appendix P: Engagement Process

An engagement plan framed outreach throughout the study process. There were well-defined goals for an efficient and successful process that guided tasks, responsibilities, schedules, and engagement materials. Engagement goals steered meeting agendas, interview questions, surveys, presentations, and other efforts. The Comprehensive Housing Assessment and Market Study process entailed five core engagement goals.

**Goal A** | *Fill Gaps from the City's Previous Housing-Related Engagement Effort*: The city is active with engaging in a dialogue with the community on the topic of housing. These previous discussions and efforts guided the process. The consultant team identified gaps in previous dialogues.

- Objective A-1: Document Past Engagement Efforts
- Objective A-2: Identify Gaps in Past Engagement Efforts
- Objective A-3: Develop Engagement Approaches that Fill Existing Gaps

**Goal B** | *Document Housing-Related Issues*: Based on the engagement gap analysis from Goal A, the process identified and documented housing-related issues. The consultant team focused on homelessness, where tasks included engagement with organizations, agencies, and homeless individuals. These discussions helped target conversations with homeless populations. Agendas and interviews included probing questions to fill out an inventory of issues.

- Objective B-1: Engage with Service Providers
- Objective B-2: Engage with Homeless Populations
- Objective B-3: Design Agendas and Interview Questions to Identify Issues

**Goal C** | *Affirm Initial Findings from Data Collection*: The consultant team collected data throughout the initial phase of the study process. Engagement efforts focused on verifying initial findings with stakeholders. This included conversations with three selected stakeholder groups, organized by topic or interest area.

- Objective C-1: Test Initial Findings with Stakeholders

**Goal D** | *Affirm the Draft and Final Versions of the Study*: The consultant team facilitated a virtual public meeting to present the draft study. A survey helped to validate the draft. The presentation and feedback helped to vet and affirm the process and study findings.

**Goal E** | *Build Stakeholder Support for the Study Process*: Building support for the study and its recommendations was an overarching goal throughout the engagement process. This goal aimed to build momentum for next steps beyond completion of the Housing Assessment and Market Study.

### ENGAGEMENT SCHEDULE

- **July 2020**: Inventory of Previous Engagement Efforts
- **August 12, 2020**: Discussions with Homeless Service Providers and Population
- **August 14, 2020**: Completion of Engagement Plan
- **September 3, 2020**: Discussion with Service Providers
- **November 10, 2020**: Stakeholder discussions and Presentations on Existing Agendas

- **November 19, 2020:** Virtual Public Meeting to Review Draft Study
- **November 19 through December 4, 2020:** Distribution of Survey
- **December 2020:** Process Engagement Results for Final Version of Study
- **January 12, 2021:** Presentation to City Council

## JULY 2020: INVENTORY OF PREVIOUS ENGAGEMENT EFFORTS

EPR, p.c. documented the city’s past engagement processes to determine previous and ongoing dialogue on housing-related themes to:

- **Ensure Consistency** with previous efforts for a seamless engagement process that honors the city’s long-term housing endeavors.
- **Build Trust** with stakeholders by showing that the consultant team is aware and informed of existing dialogues in the community.
- **Identify Gaps** in previous engagement processes to help target engagement strategies in the current study process.
- **Create a Comprehensive Database** by treating previous engagement results as part of this study and developing a larger set of results than what would otherwise be possible in this seven-month process.

The review of prior engagement reveals the breadth of the city’s commitment to involving citizens in planning efforts. The specific studies reviewed uncovered both strengths and gaps in past input.

Existing engagement strengths included the following.

- Engagement with the real estate community has included the participation of real estate agents and their local association (HRAR) in housing forums and surveys, and the benefit and availability of realtor-provided data to housing studies. The real estate community is central to market-defined housing solutions.
- Information for and about senior citizens is well-provided by the 2019 Senior Community Needs Assessment. This information is based in surveying and the participation of senior service organizations and providers and speaks to the financial and other needs of seniors.
- Housing organizations continue to participate in the search for local housing solutions through a variety of means, including their individual works as well as cross-organizational meetings and forums that help to solidify the need for affordable housing and suggest remedies.

The consultant team identified the following gaps.

- While local organizations work extensively with homeless populations, existing engagement has not specifically addressed persons experiencing homelessness themselves. Direct engagement with this population can help to reveal an important perspective on existing programs and housing needs.
- Public engagement, including engagement during the city’s recent Comprehensive Plan update, gathered a broad range of input from residents outside of specific housing organizations and industry leaders, but did not collect demographic or other background

data that could identify the group participating. For this reason, public engagement can not specify if the city's low-income residents were specifically reached.

## AUGUST 12, 2020: DISCUSSIONS WITH HOMELESS SERVICE PROVIDERS AND POPULATION

M&L team members attended the Harrisonburg-Rockingham Homeless Agencies meeting for a short presentation about the project. During this meeting, M&L introduced the need for stakeholder input for the two different questions related to the supportive housing analysis of the study. M&L staff asked members of the monthly meeting to identify staff within their agencies who would best be able to discuss, in their opinion, the rate in which they believe subpopulations (persons with disabilities, persons with serious mental illness, persons qualifying under the Commonwealth of Virginia Olmstead ruling, persons experiencing homelessness and persons transitioning from institutions) need supportive housing in their community and identify staff within their agency who would be able to discuss the barriers or challenges to creating supportive housing in Harrisonburg.

## SEPTEMBER 3, 2020: DISCUSSION WITH SERVICE PROVIDERS

The consulting team hosted a discussion with homeless service providers and people experiencing homelessness. The purpose of the call was to identify:

1. A rate in which specified subpopulations need supportive housing in their opinion,
2. Barriers or challenges for the agencies in building or providing supportive housing,
3. Experiences of people who are currently homeless in Harrisonburg.

M&L staff reviewed with the stakeholder group, nationally recommended rates which have been calculated by various researchers for each of the subpopulations. Stakeholders asked how these rates compare to their opinion on the rate in which these subpopulations need supportive housing in their community. M&L used information from the stakeholder sessions to calculate supportive housing needs for the City of Harrisonburg. The Housing Study team used ranges identified by stakeholders in a Monte Carlo simulation.

## NOVEMBER 10, 2020: STAKEHOLDER DISCUSSIONS AND PRESENTATIONS ON EXISTING AGENDAS

Having conducted research and data analysis and having drafted initial project observations and conclusions, the consultant team engaged selected stakeholders through a series of small group meetings to help test assumptions and fill in any missing information. City staff helped the consultant team identify stakeholders representing government services, community organizations, vulnerable populations, or real estate markets.

The consultant team held small-group stakeholder meetings via virtual conference on November 10, 2020. Three distinct stakeholder groups participated in three sessions throughout the day.

Group 1	Group 2	Group 3
<b>City Departments</b>	<b>Immigrant Communities</b>	<b>Real Estate &amp; Community Organizations</b>
Representation: <ul style="list-style-type: none"> <li>• Parks and Recreation</li> <li>• Public Transportation</li> <li>• Public Works</li> <li>• Economic Development</li> <li>• Public Utilities</li> </ul> 5.	Representation: <ul style="list-style-type: none"> <li>• New Bridges Immigrant Resource Center</li> <li>• Harrisonburg City Public Schools</li> <li>• Skyline Literacy</li> <li>• Church World Service</li> <li>• Virginia Organizing</li> </ul>	Representation: <ul style="list-style-type: none"> <li>• Unites Way</li> <li>• Hope Community Builders</li> <li>• Faith in Action</li> <li>• Community Housing Partners</li> <li>• Real Estate Agents</li> </ul> 6.

Each group meeting began with an introduction to the housing study and an overview of initial Harrisonburg housing market observations, including the influence of college student populations, the City's extremely low vacancy rate and the low inventory of buildable land, median housing affordability, and potential barriers to the creation of new housing.

Stakeholder group 1, made up of representatives from city government departments, discussed housing affordability and vacancy's negative impact on the city's ability to attract business investment. City department heads also point out some of the city's own employees' struggles to afford housing in Harrisonburg. Public works and utility interests pointed out that lower tap fees or extension of utilities could encourage affordable housing projects. The city has not pursued these measures, and there is a lack of funding.

Stakeholder group 2, representing immigrant communities and service organizations, explained the hurdles undocumented immigrants face in finding housing, even those who can afford rent, as they may lack social security numbers or face zoning limits on unrelated persons. Attendees stated that immigrant communities commute away from Harrisonburg to rural areas for work.

Stakeholder group 3, made up of real estate industry and community organization representatives, discussed the need for smaller, one and two-bedroom units and the continued push for new development and conversions that serve student populations. This group also provided per-square-foot construction costs that contribute to the lack of affordable housing inventory in Harrisonburg.

## NOVEMBER 19, 2020: VIRTUAL PUBLIC MEETING TO REVIEW DRAFT STUDY

The consultant team presented the draft plan at a November 19 virtual public meeting. The goal of this meeting was to vet the study findings. EPR, p.c. hosted the meeting with GoToWebinar, allowing attendees to post questions through a chat function of that platform. City staff provided a phone hotline, where attendees could leave voicemails for the panel of consultants. The City also broadcasted the virtual meeting through the local community access channel and posted a recording of the meeting on a project webpage. Over 80 people attended the virtual meeting through the GoToWebinar format. Over 150 people responded to a follow up survey that collected feedback on the presentation.

## NOVEMBER 19 THROUGH DECEMBER 4, 2020: DISTRIBUTION OF SURVEY

The COVID-19 pandemic forced a virtual format to the public meeting on November 19. To foster public engagement and collect feedback on the presentation, EPR, p.c. launched a survey for posting on the city's project website. The survey officially went live on November 19 and remained open until December 4, 2020. EPR, p.c. collected over 150 survey responses, including a response submitted through a Spanish translation of the questions. The survey included 28 questions. Appendix Q summarizes responses.

## DECEMBER 2020: PROCESS ENGAGEMENT RESULTS FOR FINAL VERSION OF STUDY

In December, the consultant team considered questions that arose during the virtual public meeting and subsequent survey responses, while updating the Comprehensive Housing Assessment and Market Study.

## JANUARY 12, 2021: PRESENTATION TO CITY COUNCIL

The consultant team prepared a final PowerPoint for the January 12th City Council meeting. This will serve as a final validation in the study process.

## Appendix Q: Survey Summary

The Comprehensive Housing Assessment and Market Study process included one public meeting, conducted virtually due to the COVID-19 pandemic. The consultant team presented the draft plan on November 19, 2020. EPR, p.c. hosted the meeting with GoToWebinar, allowing attendees to post questions through a chat function of that platform. City staff provided a phone hotline, where attendees could leave voicemails for the panel of consultants. The City also broadcasted the virtual meeting through the local community access channel and posted a recording of the meeting on a project webpage. Over 80 people attended the virtual meeting through the GoToWebinar format.

Due to the virtual format, City staff wanted to offer additional public feedback options on the presentation. In response, EPR, p.c. launched a survey posted on the City's project website. The survey officially went live on November 19 and remained open until December 4, 2020. EPR, p.c. collected 159 survey responses, including a response submitted through a Spanish translation of the questions.

### SUMMARY OF SURVEY QUESTION RESULTS

The survey consisted of 28 questions, divided into various groupings that gauged public feedback related to the November 19 virtual meeting. The following is a summary of each grouping of questions and results. This was not a statistically significant survey effort but served as a mechanism to receive comments on the draft report and presentation.

#### Opening Question

The first question identified how respondents viewed the virtual meeting. Multiple-choice options included: Yes, I attended online; Yes, I watched the meeting from the community access channel; Yes, I followed the meeting on my phone; Yes, I watched a recording of the meeting from the project website; No, I did not watch or participate in the virtual meeting.

- **Question 1:** Did you view the November 19th virtual meeting on the Harrisonburg Comprehensive Housing Assessment and Market Study?

#### *Summary of Opening Question Responses*

The consultant team developed the survey to function as a mechanism for collecting feedback on the virtual meeting. Yet, more than 63% of respondents had not attended nor watched the presentation. While the survey did not serve its intended purpose, responses still provide a glimpse into the opinions of those that decided to engage in the process.

#### First Grouping: Perception of Affordability

The first grouping of survey questions explored perceptions of affordability in the City of Harrisonburg. Questions 2 and 3 included multiple-choice options: Extremely Affordable, Affordable, Neutral/Not Sure, Unaffordable, and Extremely Unaffordable. Specific questions included the following. Question 4 included similar choices but focused on availability.

- **Question 2:** If you live in the City of Harrisonburg, how affordable do you think your home or apartment is? (skip this question if you live outside of the City of Harrisonburg)

- **Question 3:** How affordable do you think housing in the City of Harrisonburg is generally?
- **Question 4:** How available do you think affordable housing in the City of Harrisonburg is generally?

### *Summary of the First Grouping of Question Responses*

For question 2, there were 132 respondents that indicated residency in the City of Harrisonburg. Most of these residents identified their existing housing as affordable. Over 44% selected “affordable” or “extremely affordable.” Over 37% indicated that their existing housing is either “unaffordable” or “extremely unaffordable.” For questions 3, there were 155 respondents. Results differ, showing that over 70% of respondents perceived housing in Harrisonburg as “unaffordable” or “extremely unaffordable.” Question 4 suggests that respondents perceive that affordable units are not available. Over 80% saw affordable housing as “unavailable” or “extremely unavailable.”

### *Second Grouping: Site Selection for Affordable Units*

The second grouping of questions asked respondents to rate different factors for site selection of future affordable housing units. Questions 5 through 14 presented ten site considerations. Multiple-choice options included: Very High Priority, High Priority, Neutral/Not Sure, Low Priority, and Very Low Priority.

- **Question 5:** Large sites that provide the most units
- **Question 6:** Potential for higher housing densities (more units per acre of land)
- **Question 7:** Potential for higher occupancies per unit (more unrelated individuals can live together per unit)
- **Question 8:** Proximity to downtown
- **Question 9:** Proximity to parks and schools
- **Question 10:** Proximity to public transit
- **Question 11:** Proximity to employment
- **Question 12:** Proximity to restaurants, shopping, and cultural events
- **Question 13:** Integration into existing neighborhoods
- **Question 14:** Availability of social and support services

### *Summary of the Second Grouping of Question Responses*

In the second grouping of questions, most results are indecisive, with responses evenly distributed. Respondents tended to support higher densities for affordable housing. Most believed that proximity to parks and schools is a high priority. Most respondents believed that proximity to public transit, employment centers, and support services is a high priority. Over 56% believed that integration into existing neighborhoods is a high or very high priority. The following orders site selection factors from highest to lowest priority, according to averages from survey responses.

1. Proximity to public transit
2. Proximity to employment
3. Availability of social and support services
4. Proximity to parks and schools
5. Integration into existing neighborhoods
6. Potential for higher housing densities (more units per acre of land)

7. Proximity to restaurants, shopping, and cultural events
8. Large sites that provide the most units
9. Proximity to downtown
10. Potential for higher occupancies per unit (more unrelated individuals can live together per unit)

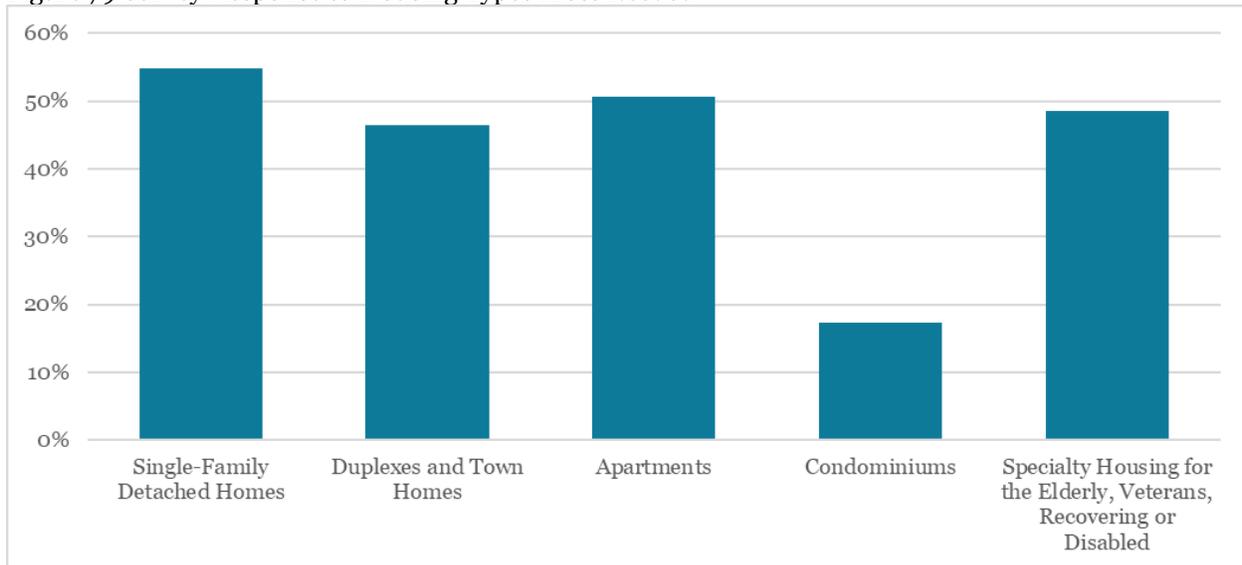
## Types of Housing

Questions 15 asked about what types of housing are most needed. Multi-choice options included: Single-Family Detached Homes; Duplexes and Town Homes; Apartments; Condominiums; and, Specialty Housing for the Elderly, Veterans, Recovering or Disabled.

- **Question 15:** What types of housing are most needed in the City of Harrisonburg? (you may select more than one)

## Summary of Question 15 Responses

Figure 79 Survey Response to Housing Types Most Needed



## Third Grouping: Support for Programs and Approaches

The third groups of questions indicated support for various City programs and approaches that could help to foster affordable housing in Harrisonburg. Questions 16 through 22 included multi-choice options: Strong Support, Support, Neutral/Not Sure, Opposed, and Strongly Opposed.

- **Question 16:** Rate your level of support for using city funds (for example: property tax, meals tax, lodging tax, development fees) to financially support construction of affordable housing.
- **Question 17:** Rate your level of support for using city funds (for example: property tax, meals tax, lodging tax, development fees) to help low-income individuals afford housing through rent or down payment assistance or other programs.
- **Question 18:** Rate your level of support for regulations that allow more Accessory Dwelling Units (i.e. basement apartments, carriage houses, apartments above garages, etc.).

- **Question 19:** Rate your level of support for expanding existing city programs that offer real estate tax reductions for the rehabilitation or construction of affordable housing in certain areas.
- **Question 20:** Rate your level of support for waiving certain fees (i.e. water and sewer tap fees, building permit fees, and others) for the purpose of supporting affordable housing.
- **Question 21:** Rate your level of support for using or selling city-owned properties for the purpose of developing new affordable housing.
- **Question 22:** Rate your level of support for allowing other types of housing (i.e. duplexes, townhomes, apartments, or condominiums) to be added to existing single-family detached home neighborhoods.

### *Summary of the Third Grouping of Question Responses*

Survey respondents generally indicated support for all programs and approaches presented in the questions. The following orders support from highest to lowest, according to averages from survey responses.

1. Waiving certain fees for the purpose of supporting affordable housing.
2. Expanding existing city programs that offer real estate tax reductions for the rehabilitation or construction of affordable housing in certain areas.
3. Using or selling city-owned properties for the purpose of developing new affordable housing.
4. Allowing more Accessory Dwelling Units.
5. Using city funds to help low-income individuals afford housing through rent or down payment assistance or other programs.
6. Using city funds to financially support construction of affordable housing.
7. Allowing other types of housing to be added to existing single-family detached home neighborhoods.

### Respondent Characteristics

The remaining survey questions identified characteristics of survey respondents.

- **Question 23:** What is your age?
- **Question 24:** Do you own or rent your home?
- **Question 25:** How many years have you lived in the City of Harrisonburg? (skip this question if you live outside of the City of Harrisonburg)
- **Question 26:** What is your gross (before taxes) household income?
- **Question 27:** How many people live in your household including yourself?

### Open Response

The last question was an open response that allowed respondents to type additional comments.

- **Question 28:** Use this space to give additional input on the November 19th public meeting and on potential solutions for affordable housing in Harrisonburg:

