



RAPID CITY HOUSING AFFORDABILITY STUDY

Commissioned by the
John T. Vucurevich Foundation
Conducted by the
Black Hills Knowledge Network

Final Report

Rapid City Housing Affordability Study

Prepared for:
John T. Vucurevich Foundation



JOHN T. VUCUREVICH
FOUNDATION

...to make a piece of the world a brighter place.

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ACRONYMS

AARP: American Association of Retired Persons
ACS: American Community Survey
AMI: Area Median Income
BAH: United States Department of Defense Basic Allowance for Housing
BHCLG: Black Hills Council of Local Governments
BHKN: Black Hills Knowledge Network
BLS: United States Bureau of Labor Statistics
CDBG: Community Development Block Grant
CLT: Community Land Trust
DLT: Dakota Land Trust
ESRI: Environmental Systems Research Institute
FLU: Future Land Use
HOF: South Dakota Housing Opportunity Fund
HTF: Housing Trusts Fund
HUD: United States Department of Housing and Urban Development
JTVF: John T. Vucurevich Foundation
LIHTC: Low-Income Housing Tax Credit
MFR: Multi-Family Residence
MSA: Metropolitan Statistical Area
NWDHR: NeighborWorks Dakota Home Resources
PCDE: Pennington County Department of Equalization
PCHRC: Pennington County Housing and Redevelopment Commission
PIT: United States Department of Housing and Urban Development Point-in-Time Count
RCCI: Rapid City Collective Impact
RCED: Rapid City Economic Development
RCMPO: Rapid City Metropolitan Planning Organization
SFR: Single Family Residence
SNAP: Supplemental Nutrition Assistance Program
TIF: Tax Increment Financing
USDA: United States Department of Agriculture

DEFINITIONS

Affordable Housing: Per the U.S. Census, households paying 30 percent or more of their gross income for housing are considered to be cost-burdened. Affordable housing is therefore defined as housing that does not cost burden the household.

American Community Survey: The American Community Survey (ACS) is an ongoing survey by the U.S. Census Bureau during non-decennial years. The ACS is sent out to approximately 295,000 addresses monthly (or 3.5 million per year), it is the largest household survey that the Census Bureau administers.

- 1-year estimates are available for areas with a population of at least 65,000 people. The 2016 ACS 1-year estimates were released in 2017 and summarize responses received in 2016 for all states but only 26% of counties due to the 65,000 minimum population threshold.
- 5-year estimates are available for areas down to the block group scale, on the order of 600 to 3000 people. The 2016 ACS 5-year estimates, summarizing data from 2012-2016, were released in 2017.

Area Median Income: The median income divides the household income distribution into two equal parts, with one-half of households falling below the median income (including households with no income), and one-half falling above the median income.

BLS Detailed Occupation Group: Per the Standard Occupational Classification (SOC) system, a federal statistical standard used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data, all workers are classified into one of 867 detailed occupations according to their occupational definition. Detailed occupations in the SOC with similar job duties, and in some cases skills, education, and/or training, are grouped together.

BLS Major Occupation Group: Per the Standard Occupational Classification (SOC) system, a federal statistical standard used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data, all workers are classified into one of 867 detailed occupations according to their occupational definition. To facilitate classification, detailed occupations are combined to form 459 broad occupations, 98 minor groups, and 23 major groups.

Community Land Trusts: Community land trusts are nonprofit, community-based organizations designed to ensure community stewardship of land. Community land trusts can be used for many types of development (including commercial and retail), but are primarily used to ensure long-term housing affordability. To do so, the trust acquires land and maintains ownership of it permanently. With prospective homeowners, it enters into a long-term, renewable lease instead of a traditional sale. When the homeowner sells, the family earns only a portion of the increased property value. The remainder is kept by the trust, preserving the affordability for future low- to moderate-income families.

Contract Rent: The monthly rent agreed to or contracted for, regardless of any furnishings, utilities, fees, meals, or services that may be included. For vacant units, it is the monthly rent asked for the rental unit at the time of interview.

Future Land Use (FLU) Neighborhoods: Sub-geographies of Rapid City defined by the Rapid City Metropolitan Planning Organization.

Great Recession: According to the Federal Reserve, the Great Recession began in December 2007 and ended in June 2009, which makes it the longest recession since World War II.

Gross Rent: The amount of the contract rent plus the estimated average monthly cost of utilities (electricity, gas, and water and sewer) and fuels (oil, coal, kerosene, wood, etc.) if these are paid for by the renter (or paid for the renter by someone else). Gross rent is intended to eliminate differentials which result from varying practices with respect to the inclusion of utilities and fuels as part of the rental payment.

Homelessness: According to the South Dakota Housing For Homeless Consortium, homelessness is defined as an extreme manifestation of poverty characterized by not having a residence. Homeless occurs for a variety of reasons and can last for short or long periods of time.

Household Income: Per the U.S. Census, household income includes the income of the householder and all other individuals 15 years old and over in the household, whether they are related to the householder or not. "Total income" is the sum of the amounts reported separately for wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income.

Household: According to the U.S. Census, a household includes all the people who occupy a housing unit. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living arrangements.

Housing Authority: Quasi-governmental organizations that have the ability to own, manage, and even develop affordable housing on behalf of the public.

Housing Burdened: According to the U.S. Department of Housing and Urban Development and the U.S. Census Bureau, families who pay more than 30 percent of their income for housing and considered housing cost burdened and may have difficulty affording necessities such as food, clothing, transportation, and medical care.

Housing Lock: Phenomenon in which existing homeowners may find it difficult to move or purchase a new home. Such households may be able to afford their current homes as a result of having paid off their mortgages in the past but may find it difficult to afford new homes at current prices.

Housing Trusts Fund: Per the Housing Trust Fund Project, housing trust funds are distinct funds established by city, county or state governments that receive ongoing dedicated sources of public

funding to support the preservation and production of affordable housing and increase opportunities for families and individuals to access decent affordable homes.

Housing Unit: According to the U.S. Census, a housing unit, as defined for purposes of these data, is a house, an apartment, a group of rooms, or a single room intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants live separately from any other individuals in the building and which have a direct access from the outside of the building or through a common hall. In accordance with this definition, each apartment unit in an apartment building is counted as one housing unit. Housing units, as distinguished from "HUD-code" manufactured (mobile) homes, include conventional "site-built" units, prefabricated, panelized, sectional, and modular units. Housing unit statistics also exclude group quarters (such as dormitories and rooming houses), transient accommodations (such as transient hotels, motels, and tourist courts), moved or relocated buildings, and housing units created in an existing residential or non-residential structure. Units in assisted living facilities are considered to be housing units, however, units in nursing homes are not considered to be housing units.

Incentive Zoning: Incentive zoning is more flexible than Inclusionary Zoning as it does not require developers to set aside a portion of housing units to be affordable. Rather, it enables cities to use affordable housing set-asides as a bargaining chip. Cities can impose affordable housing requirements when developers request changes in land use, parking requirements, and changes in height or density restrictions.

Inclusionary Zoning: municipalities can enact inclusionary zoning provisions in order to ensure that new housing developments provide affordable housing. These planning ordinances require developers to reserve, or set aside, a fraction of new housing units specifically for households that meet predefined income requirements. Most inclusionary zoning programs set income requirements in the range of 60% to 100% of AMI, but thresholds as high as 120% of AMI are also seen. Typical inclusionary zoning policies set targets of ten to thirty percent for the number of reserved properties within a new development.

Metropolitan Statistical Area: A geographic entity delineated by the Office of Management and Budget for use by federal statistical agencies. Metropolitan statistical areas consist of the county or counties (or equivalent entities) associated with at least one urbanized area of at least 50,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties.

Multi-Family Residence: Per the U.S. Census, residential buildings containing units built one on top of another and those built side-by-side which do not have a ground-to-roof wall and/or have common facilities (i.e., attic, basement, heating plant, plumbing, etc.)

Owner-Occupied Housing Costs: Per the U.S. Census, housing costs for homeowners include payment for mortgages, real estate taxes, various insurances, utilities, fuels, mobile home costs, and condominium fees.

Pennington Count Housing and Redevelopment Commission: Housing Authority for the Rapid City Market Area.

Point-in-Time Count: According to HUD, the Point-in-Time (PIT) count is a count of sheltered and unsheltered homeless persons on a single night in January. The PIT is conducted by local communities and serves as an official estimate for the number of homeless persons in that community.

Poverty Line: 2016 U.S. Department of Health and Human Services poverty guidelines defined the poverty line as: (1) \$11,880 for one person households, (2) \$16,020 for two person households, (3) \$20,160 for three per-son households, and (4) \$24,300 for four person households.

Rapid City Market Area: The U.S. Census tracts that comprise Rapid City and part of Box Elder in Pennington County and Ellsworth Air Force Base and surrounding area in Meade County. (See Map 2 for a depiction of the market area and the Census tract identification numbers).

Rapid City Metropolitan Statistical Area: A Census designated area comprised of Meade, Pennington, and Custer Counties in which Rapid City is considered the principal city.

Rental Housing Costs (Gross Rent) : Per the U.S. Census, housing costs for renters include contract rent plus the estimated average monthly cost of utilities (electricity, gas, and water and sewer) and fuels (oil, coal, kerosene, wood, etc.) if these are paid for by the renter or someone else.

Selected Monthly Ownership Costs: Selected monthly owner costs are calculated from the sum of payment for mortgages, real estate taxes, various insurances, utilities, fuels, mobile home costs, and condominium fees.

SD Department of Education’s Child and Adult Nutrition Services Program (Free and Reduced School Lunch): Provides aid to child and adult care institutions and family or group day care homes for the provision of nutritious foods that contribute to the wellness, healthy growth, and development of young children, and the health and wellness of older adults and chronically impaired disabled persons. For the 2016-2017 calendar year, individuals earning less than \$15,444 annually or \$31,590 for a family of four were eligible for free school lunches. Individuals earning less than \$21,978 and a family of four earning less than \$44,955 were eligible for reduced school lunches

Single Family Residence: Per the U.S. Census, single-family statistics include fully detached units, semi-detached units, row houses, and townhouses. In the case of attached units, each must be separated from the adjacent unit by a ground-to-roof wall in order to be classified as a single-family structure. Also, these units must not share heating/air-conditioning systems or utilities. Units built one on top of another and those built side-by-side that do not have a ground-to-roof wall and/or have common facilities (i.e., attic, basement, heating plant, plumbing, etc.) are not included in the single-family statistics.

Supplemental Nutritional Assistance Program Benefits: The largest nutrition assistance program administered by the USDA. The Supplemental Nutritional Assistance Program (SNAP) offers nutrition assistance to millions of eligible, low-income individuals and families and provides economic benefits to communities. The SNAP benefit program is often referred to as the Food Stamp program as it is a modification and continuation of the earlier Food Stamp program.

Workforce Housing: According to the Urban Land Institute, the term workforce housing applies to households with incomes between 60% and 100% of the Area Median Income.

1: EXECUTIVE SUMMARY

1.1: Introduction and Methodology

Affordable housing concerns have emerged on both national and local fronts in recent years. National studies have identified shrinking low-cost rental markets, losses in subsidized units, and reductions in the availability of tax credits as major contributing factors in the loss of affordable housing. This study was commissioned by the John T. Vucurevich Foundation to help the Rapid City community to understand the local need for affordable housing. This report therefore seeks to provide a detailed analysis into the state of affordable housing within the Rapid City market that will inform the community and help to guide future action.

This study adopted a broad definition for affordable housing based on the 30-percent rule, which advises that a family or household should not pay more than 30% of its annual income for housing. The 30-percent rule has its roots in federal housing program regulations that began with the United States National Housing Act of 1937 and has since become a standard metric for evaluating whether families or households are faced with excessively high housing costs. This report does not advocate that households should pay 30% of their income towards housing, however. The 30-percent rule is simply used to identify an upper limit of affordability.

For the purposes of this study the Rapid City market area includes the census tracts comprising Rapid City and western Box Elder in Pennington County as well as the census tract containing Ellsworth Air Force Base and surrounding areas in Meade County.

1.2: Market Area Income and Demographic Pressures

The most noteworthy trends in the market area were those related to household incomes. Real median household incomes (i.e. inflation-adjusted) in the Rapid City market area declined by 3.2% in recent years, falling from \$50,380 in 2010 to \$48,784 in 2016. In contrast, real median household incomes across South Dakota grew by 7.8% over the same period — rising from a comparable \$50,513 in 2010 to \$54,467 in 2016. Real median household incomes at the national level similarly rose by 4.6% from \$55,071 in 2010 to \$57,617 in 2016.

A thorough analysis of local demographic patterns highlighted three trends that have depressed real household incomes in the market area: (1) the local population is aging out of the workforce, (2) the composition of households is changing with 1-person and 1-earner households becoming more prevalent, and (3) the local labor market is dominated by tourism related occupations (e.g. food service, retail sales, and accommodation) that have experienced slower than average wage growth since the 2007-2009 recession. This report focused on the first two factors discussed above as an extensive labor-market analysis was beyond the scope of this study.

This report also explored geographic and racial disparities in access to affordable housing and found that some areas of the market area had less access to affordable housing than others. Many neighborhoods saw large declines in real median household income, especially the more populous neighborhoods, while others enjoyed positive income growth. This report also found that racial disparities in household incomes meant that the need for affordable housing was particularly acute for American Indian households.

According to Pennington County property tax records and Census housing estimates, there were 35,184 housing units (including both permanent and semi-permanent housing) in the Rapid City market area in 2016. Table ES-1 displays a breakdown of these housing units by their tenure and structure type.

Table ES-1: Number of Existing Housing Units by Property Type

Tenure	Number of Properties	Percent of Tenure ¹
Owner-Occupied		
Single Family Residence	19,408	88.6
Town House/Condominium	1,472	6.7
Mobile Home	989	4.5
Duplex	30	0.1
Total	21,899	100.0
Rental		
Single Family Residence	4,159	32.3
Mobile Home	2,686	20.8
Apartment ³	5,182	40.2
Town House/Condo	490	3.8
Duplex	368	2.9
Total	12,885	100.0
Motel	400	100.0
Total	35,184	

¹ Totals may not sum to 100 due to rounding.

Several periods of intense construction and expansion have largely shaped the market area's housing stock. The 1950s and 1960s, coinciding with the entry of Ellsworth Air Force Base into the region, was the period of most rapid construction. The years following the 1972 flood were again characterized by rapid housing construction. The early 2000s prior to the 2007-2009 recession saw a third period of rapid construction.

The 2007-2009 recession did not severely impact the housing markets in South Dakota overall, but the recession did affect local construction trends. Building permit data showed that recent Single-Family Residential (SFR) constructions peaked in 2004. New SFR housing starts in 2016 remained approximately 50% below the pre-recession peak. New Multi-Family Residential (MFR) starts almost disappeared during the 2007-2009 recession but have since recovered. MFR permit issuance in 2016 surpassed the pre-recession peak in 2004.

1.3: Housing Costs

While real median household incomes in the study area fell by 3.2% from 2010 to 2016, real median home prices, in contrast, rose by 11.5%. This simultaneous divergence of incomes and housing costs has led to increased housing burden and increased the need for affordable housing, especially for families with lower incomes.

Data on home sales from the Black Hills Area Association of Realtors and the Rushmore Area Realtors Association showed that median single-family home prices increased 11.5% from 2010-2016 on average. The fastest rate of price growth occurred in the market for Mobile Homes without land, where median prices rose by 22.0%, from \$32,606 in 2010 to \$39,800 in 2016. Median single-family home prices rose by 10.6% over the period, rising from \$171,723 to \$190,000. Median sale prices for Townhomes/Condos and Mobile Homes with land rose by 8.3% and 6.3%, respectively.

1.4: Housing Demand

Using Census data, housing demand was assessed by evaluating the current distribution of housing tenure (owner-occupied versus renter) alongside the market area income profile. Households were stratified based on annual incomes and then affordable monthly housing costs were calculated based on the 30-percent affordability criteria.

1.4.1: Affordable Housing Demand

Table ES-2 shows that an estimated 6,225 households (1,936 owner households and 4,289 renting households) had incomes of less than \$20,000 in 2016. For these households the maximum affordable monthly housing expenditure would be \$500 — based on the 30-percent of annual income rule. Therefore, in 2016 the market demanded 1,936 affordable owner-occupied housing units with monthly ownership costs of less than \$500 and another 4,289 rental units with monthly gross rents of less than \$500.¹

Table ES-2: Demand for Affordable Housing at Various Income Levels by Housing Tenure

Income Level	Affordable Monthly Price Range	Demand for Units of Owner-Occupied Housing			Demand for Units of Rental Housing		
		2010	2016	Change	2010	2016	Change
Under \$20,000	Under \$500	1,465	1,936	471	4,736	4,289	-447
\$20,000 - \$34,999	\$500 to \$899	3,861	2,945	-916	3,395	3,132	-263
\$35,000 - \$49,999	\$899 to \$1,249	3,647	3,674	27	1,909	2,384	475
\$50,000 - \$74,999	\$1,250 to \$1,899	5,676	5,448	-228	1,528	1,850	322
\$75,000 - \$99,999	\$1,900 to \$2,499	3,777	4,082	305	973 ^{ab}	1,230 ^{ab}	257
\$100,000 - \$149,999	\$2,500 to \$3,750	2,611	3,465	854			
\$150,000 and above	\$3,750 or more	1,653	2,371	718			
Total		22,690	23,921	1,231	12,541	12,885	344

^a Includes all households with incomes at or above 75,000 per year.

^b The margin of error for this estimate exceeds the estimate itself.

¹ This report focuses on total ownership costs and gross rental rates. For owner-occupied housing, total ownership costs include mortgage payments, insurance, property taxes, and all utilities. For rental housing, gross rental rates, or gross rents, refers to the sum costs of contractual rent and any utilities or associated costs that are paid for by the tenant.

1.5: Housing Supply

The Supply of owner-occupied housing units was estimated using Pennington County property tax records, while the supply of rental units was estimated with Census data. The housing supply within defined price ranges was then determined by stratifying housing units based on their total ownership costs and gross rental rates.²

1.5.1: Supply of Affordable Owner-Occupied Units

This report estimated the supply of affordable housing from the perspective of a homebuyer entering the market in 2016, rather than an existing homeowner. Housing costs were calculated by assuming a new purchase at estimated 2016 market prices. The supply of affordable housing across different price points was then determined by applying the 30-percent affordability criteria.

Table ES-3: Supply of Owner-Occupied Housing Units at Various Income Levels ¹

Income Level	Affordable Monthly Price Range	Market Price Range	Supply of Affordable Units	Percent of Total Stock
Under \$20,000	under \$500	under \$33,700	37	0.2
\$20,000 - \$34,999	\$500 to \$899	\$33,700 to \$99,399	1,354	6.2
\$35,000 - \$49,999	\$900 to \$1,249	\$99,400 to \$156,699	5,353	24.7
\$50,000 - \$74,999	\$1,250 to \$1,899	\$156,700 to \$263,499	9,606	44.3
\$75,000 - \$99,999	\$1,900 to \$2,499	\$263,500 to \$361,899	3,020	13.9
\$100,000 - \$149,999	\$2,500 to \$3,499	\$361,900 to \$525,999	1,561	7.2
\$150,000 and above	\$3,500 and above	\$526,000 and above	751	3.5
Total			21,682	100.00

¹ Excludes 217 properties (1% of all records) with various property tax exemptions for which no market based ownership costs could be calculated.

The distribution of housing costs, both in terms of monthly costs and market prices, was uni-modal and followed a normal distribution. Very little housing stock was priced affordably for low-income households. Similarly, at the upper end of the market, very few housing units had ownership costs equal to 30-percent of the owners' household incomes.

1.5.2: Supply of Affordable Rental Units

Estimates for the number of affordable rental units were derived exclusively from Census data, as county records do not report on rental rates charged by property owners. Once again, the supply of rental units was determined by stratifying the rental stock based on reported gross rents in order to align with household incomes.

Table ES-4, on the following page, shows that the majority of rental units in the Rapid City market area were affordable at the area median income. Census estimates indicated that 90.5% of all renting households in 2016 had gross rents at or below \$1,249 per month. Moreover, 54.5% of renting households (7,024 households) faced gross rents at or below \$899 per month.

² See Footnote 1 on the previous page.

Table ES-4: Supply of Affordable Rental Units at Various Income Levels and Price Points¹

Income Level	Affordable Monthly Gross Rent	Supply of Affordable Units	Percent of Total Stock ²
Under \$20,000	under \$500	2,830	22.0
\$20,000 - \$34,999	\$500 to \$899	5,673	44.0
\$35,000 - \$49,999	\$900 to \$1,249	3,155	24.5
\$50,000 - \$74,999	\$1,250 to \$1,999	1,147	8.9
\$75,000 or more	\$2,000 or more	80 ^a	0.6
Total		12,885	100.0

¹ The Census Bureau defines gross rents to include contracted rent plus utilities and fuels etc.

² Totals may not sum to 100% due to rounding.

^a The margin of error for this estimate exceeds the estimate itself.

1.6: Market Gaps

Market gaps in affordable housing were estimated by subtracting housing demand estimates from housing supply estimates at each price point. This method allowed identification of shortages (demand for housing is greater than supply) and surpluses (housing supply is greater than demand) across all income brackets and price ranges. This method identified points of friction where the housing stock did not align with household incomes rather than true shortages of housing (i.e. homelessness).

This report found that the current market area housing stock exhibited too little price variation causing a misalignment of costs and incomes. Such misalignment was found in both the owner-occupied and rental markets. The overall impression was that housing costs were ill suited for the current incomes of the Rapid City and Box Elder populations.

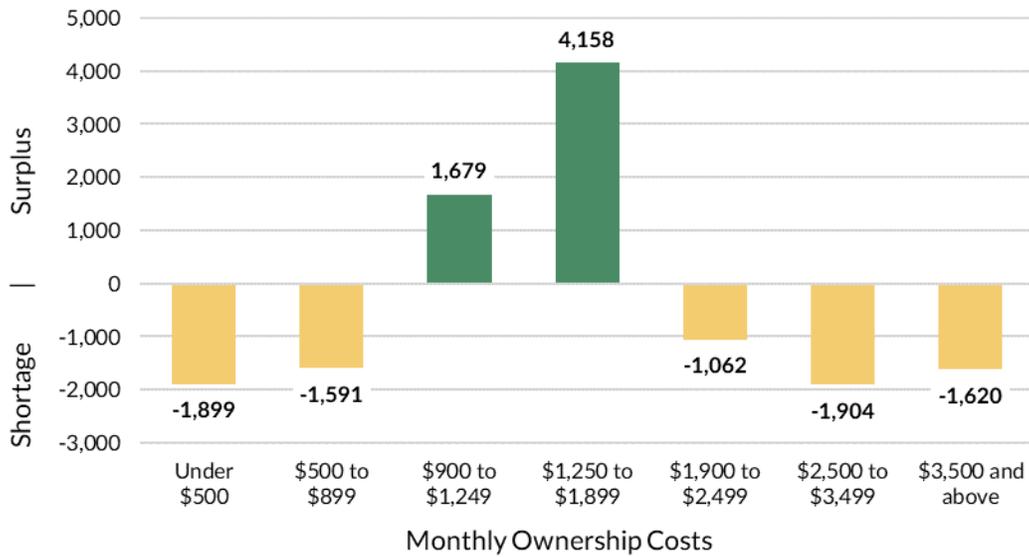
The data showed large shortages of affordable housing at the low-income range, very large surpluses across the middle-income range, and shortages in the high-income range. This result indicated a market where competition amongst homebuyers and renters ensured that low-income households spent well over 30% of their incomes on housing while high-income households spent much less than 30% of their incomes on housing.

1.6.1: Owner-Occupied Market Gaps

Figure ES-1, on the following page, demonstrates the mismatch found between area incomes and housing costs. Figure ES-1 shows an estimated market gap of 3,490 housing units costing \$899 or less per month. A portion of this gap was filled by homeowners that had paid off their mortgages prior to 2016, but an estimated 1,939 households earning under \$35,000 per year were currently paying a mortgage in 2016. As a result, the current market gap was likely at least that large.

Additional evidence of mismatch was found in the middle of the market. In 2016, roughly 44% of the owner-occupied housing stock in the market area had estimated market prices between \$156,774 and \$263,410 and monthly ownership costs between \$1,250 and \$1,899. However, just 23% of market area households had annual incomes between \$50,000 and \$74,999. Figure ES-1 demonstrates this with a large surplus (because supply was greater than demand) of 4,158 housing

Figure ES-1: Gaps in Affordable Owner-Occupied Housing



units costing between \$1,250 and \$1,899 per month. This result should not be understood to say that there were 4,158 vacant homes in 2016. The estimated shortages and surpluses in Figure ES-1 simply demonstrate the mismatch between household incomes and housing costs.

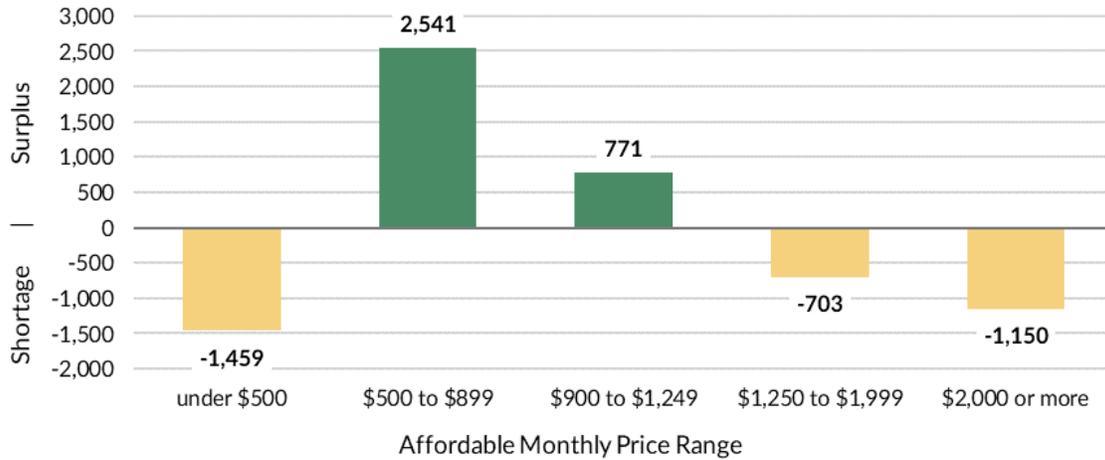
The results of mismatched incomes and housing costs in 2016 were large disparities in housing burden across the income distribution. An estimated 52% of households earning less than \$20,000 per year paid more than half of their annual incomes towards housing in 2016. Census estimates also reported that 75% of households making less than \$20,000 annually paid more than 30% of their incomes toward housing, and an estimated 56.5% of households with annual incomes below \$35,000 were similarly cost burdened. In contrast, only 2% of households with annual incomes in excess of \$100,000 per year were cost burdened in 2016, and 85% of these households paid less than 20% of their incomes towards housing.

1.6.2: Rental Market Gaps

The rental market exhibited a similar pattern of shortages and surpluses to the owner-occupied market discussed above. Figure ES-2, on the following page, displays an estimated shortage of 1,459 units with gross rents of \$500 or less per month. The true shortage of units with gross rents under \$500 per month is likely larger than estimated, however, because households receiving Section 8 vouchers tend to under-report their total rental costs due to the rent subsidy. In light of this reality, the supply of lower-cost rental units may be overestimated, causing the real-world shortage of lower-cost units to be larger than estimated.

Figure ES-2 also shows an estimated surplus of 3,312 rental units with gross rents between \$500 and \$1,249 per month. The majority of this surplus appeared in units with gross rents between \$500 and \$899 per month. Additionally, local market data indicated that most units renting in this price

Figure ES-2: Gaps in Affordable Rental Housing



range have contract rents of \$700 or more per month, placing the gross rents closer to the upper end of the \$500 to \$899 price range.

As in the owner-occupied market, the pattern of shortages and surpluses in the rental market indicated that low-income households experienced higher rates of housing burden than high-income households. Approximately 57% of renting households earning less than \$20,000 per year paid 50% or more of their incomes towards housing. In contrast, an estimated 87% of households earning \$75,000 or more per year paid less than 20% of their incomes towards housing.

After evaluating the owner-occupied and rental markets, the data clearly showed that affordable housing was in short supply for low-income households in the Rapid City market area. An estimated 4,417 households, or 12% of the area population, were forced to pay more than 50% of their incomes towards housing in 2016. If recent income and housing costs trends have continued over the intervening years, the number of highly cost-burdened households has surely risen.

1: INTRODUCTION

In 2017, the Joint Center for Housing Studies of Harvard University released *The State of the Nation's Housing* report. The wide-ranging study provided a nationwide snapshot of current housing trends. Much of the report was summarized with the statement that

*Not all households and not all markets are thriving, and affordability pressures remain near record levels.*³

According to the study, nearly 39 million U.S. households could not afford housing. Moreover, shrinking low-cost rental markets, losses in subsidized units, and reductions in the availability of tax credits are likely to increase the already large gaps in affordable housing nationwide. The report continues to state that the, “retrenchment in federal funding has put increased pressure on state and local governments to address the housing needs of the most vulnerable individuals.”⁴

This national perspective is not lost on the Rapid City community. For many years, housing affordability in Rapid City has been a major concern for community members. Philanthropic and social service organizations have long perceived a dire need for affordable housing. This need intensified in 2016 following the demolition of a number of residential hotels that housed many of Rapid City’s lowest income families.

Given the local context, the time is ripe for a comprehensive evaluation of housing needs in the community. Policy makers, developers, and the non-profit community have each independently tried to understand certain aspects of the housing market in Rapid City, but progress has been slow given the lack of a common framework and shared knowledge. This study was commissioned by the John T. Vucurevich Foundation to provide a framework for planning and a foundation for future action.

1.1: John T. Vucurevich Foundation

The John T. Vucurevich Foundation (JTVF) is a private foundation located in Rapid City. Founded by former banker John T. Vucurevich, JTVF “honors and builds on the personal legacy of giving of John T. Vucurevich by facilitating solutions to key challenges facing South Dakota and the Black Hills Region in the areas of health and human services, education and the arts.”⁵

³ Joint Center for Housing Studies Harvard University, “The State of the Nation’s Housing 2017” (Cambridge MA, 2017), http://jchs.harvard.edu/research/state_nations_housing, pg. 1

⁴ The State of the Nation’s Housing 2017, pg 31

⁵ John T. Vucurevich Foundation. <http://www.jtvf.org/>

JTVF provides funding and human resources to collaborative projects and organizations that promote sustainable community change, especially as it addresses the need of “the poor, distressed, and under-privileged in this region.”

In the summer of 2015, JTVF entered into discussions with other community members and organizations to begin a collaboration aimed at finding solutions to pressing community issues. This group envisioned large-scale systems change in which a creative process, along with ongoing qualitative and quantitative feedback, would help funders and organizations articulate measurable goals and implement collective strategies. This effort is now known as Rapid City Collective Impact.

1.2: Affordable Housing/Homelessness Focus

Rapid City Collective Impact (RCCI) was established to catalyze more effective action and collaboration amongst non-profit and social service organizations. In 2016, a three-day community workshop, attended by 100 community members representing a variety of industries as well as social services, helped RCCI identify several action-areas for their Collective Impact Approach. These action-areas reflected distinct and pressing needs for the residents of Rapid City. Each action-area was called a work stream and was populated by community members and organizations that had vested interests in, or worked directly on, the issue identified.

In December 2016, the organization defined its 2017 priorities as: (1) Affordable Housing/Homelessness, (2) Behavioral Health, and (3) Food Security. Over the next year, members of the Affordable Housing/Homelessness work stream met regularly to discuss the need, access, and barriers to affordable housing. Don Greer, then consultant for Rapid City Collective Impact, led these discussions. Both Greer and work stream members brought forth local, state, and national data to enrich the conversations.

On October 11, 2017, RCCI partnered with JTVF, Rapid City Economic Development Partnership (RCEDP) and the Black Hills Knowledge Network (BHKN) to hold a housing summit, which was attended by construction and housing stakeholders as well as representatives of the banking, city government, and social services sectors. At this event, RCCI and RCEDP presented their current work on affordable housing.

At the Housing Summit, RCCI shared its work on the Transformational Campus, now known as One Heart — a transitional housing campus, modeled on San Antonio’s Haven for Hope center, which seeks to help people lift themselves out of poverty. RCEDP also shared the results of an analysis conducted by BHKN that compared wages and housing costs in Rapid City to those in nineteen similar metro areas around the nation.

Representative David Lust shared the most current SD Workforce Housing Report and its implications for state-level housing legislation. Rolf Pendall, Codirector of the Metropolitan Housing and Communities Policy Center at the Urban Institute, served as the lunch speaker and addressed trends that would likely shape the housing market in Rapid City over the next two decades, as well as the national context for these issues.

Panel discussions in the afternoon focused on developing short- and long-range action steps and goals for increasing housing affordability through various mechanisms including: financing, zoning, regulation, and construction of affordable housing in the Rapid City area. The group also agreed on the need for a comprehensive housing study to provide reliable data and analysis to support a shared understanding of the need for affordable housing and to inform action steps and possibly policy changes.

1.3: Report Overview

The purpose of this report is ascertain how well the current housing stock suits the needs of the area population and proceeds as follows. Section 2 of this report begins with a methodology discussion that provides an operational definition of affordable housing. The methodology section also describes the study region under analysis and several data challenges posed by the unique characteristics of the region.

Section 3 provides an in-depth analysis of area demographic and economic trends that contribute to demand for affordable housing. The demographic section begins with an evaluation of population and household composition trends. The report then describes labor market indicators including aging and educational attainment. Section 3 then discusses important economic trends relating to household incomes, area employment, and occupational wages. Additional demand considerations including: homelessness, the role of motels in the housing market, Section 8 housing subsidies, and the influence of Ellsworth Air Force Base on the local housing market are also discussed. Section 3 concludes by providing estimates for housing demand across various income levels.

Section 4 of this report provides an inventory of the existing housing stock in the community. The analysis begins by characterizing the current housing stock and then provides a discussion of single- and multi-family housing construction trends using both Pennington County property tax records and Census data. Finally, Section 4 provides estimates for the supply of owner-occupied and rental units that would be considered affordable to households across seven distinct income brackets.

Section 5 presents the principal results of this analysis. The assessment of housing affordability provides estimates for affordability gaps that across several income brackets. The market gap estimates describe shortages and/or surpluses of affordable housing. We show that affordable rental units are much more prevalent than affordable owner-occupied housing. We find an affordability gap for low income households in both the owner-occupied and rental housing equal to several thousand units.

Finally, this report concludes with a discussion of policy tools and best practices that may be used to address the supply of affordable housing options within the community. We discuss both land-use reforms and financial tools that can lower the cost of housing development, or more direct measures that can reduce the cost of housing to low income families.

2: METHODOLOGY

2.1: Defining Affordable Housing

In many cases, a distinction is drawn between “Affordable Housing” and “Workforce Housing”—largely dependent upon whether housing is targeted towards lower or middle-income households. The Urban Land Institute offers the definition of workforce housing applying to households with incomes between 60% and 100% of the Area Median Income (AMI).⁶ Affordable housing then typically refers to housing for households earning less than 60% of AMI.

This report rejects a narrow focus on either affordable or workforce housing as such. Instead, this study takes a broader perspective and defines affordable housing as housing that does not place an excess burden on the household’s finances, regardless of the household’s level of income. In light of this consideration, this study adopts the broad yet traditional definition for affordable housing based on the 30-percent rule:

Affordable housing should not cost a family or household more than thirty percent of its annual income.

The 30-percent rule has its roots in federal housing program regulations that began with the United States National Housing Act of 1937, and has become a standard metric for evaluating whether families or households are faced with excessively high housing costs. The 30-percent rule has also been adopted by the Census Bureau as the threshold for what has been termed “housing burden” or “housing-cost burden”. According to the U.S. Department of Housing and Urban Development, “[f]amilies who pay more than 30% of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care.”⁷

This study uses the traditional 30-percent definition because it can be applied across all income levels. Of course, this rule does not imply that households *should* spend 30-percent of their incomes on housing. Rather the 30-percent rule serves as a guide for the maximum amount of income a household should have to devote to housing.

It should be recognized at the outset, however, that there are several economic and environmental factors endemic to the Rapid City market area that drive up housing and development costs. For example, the natural beauty of the Black Hills and area amenities make the community a desirable place to live which puts upward pressure on prices. Regional topography and soil conditions also contribute to higher development costs. Because of these factors, it may be that the 30-percent rule

⁶ Urban Land Institute Terwilliger Center for Workforce Housing, “Persistence of the Workforce Housing Gap in the Boston Metro Area” (Washington, DC, 2010), <https://americas.uli.org/report/priced-out-persistence-of-the-workforce-housing-gap-in-the-boston-metro-area/>

⁷ U.S. Department of Housing and Urban Development. https://www.hud.gov/program_offices/comm_planning/affordablehousing/

is too restrictive in practice. Nevertheless, it provides a generally accepted benchmark from which to base the analysis.

2.2: Defining Rapid City Market Area

The essential first step in analyzing the Rapid City housing market is to clearly define the study area. This represents a unique challenge for several reasons. First, Rapid City is a major employment center with many workers commuting in from surrounding communities — e.g. Box Elder, Black Hawk, Summerset, and Piedmont.

The second challenge arises from the differing geographic boundaries for Rapid City that exist across local, state, and federal agencies. For example, Rapid City is the principal city of the Rapid City Metropolitan Statistical Area (MSA). The MSA is a primary geographic designation in the United States and in many cases represents the smallest unit of analysis for which economic data is available. For example, many employment and GDP statistics are only available at the State and MSA levels and not at the county or city levels.

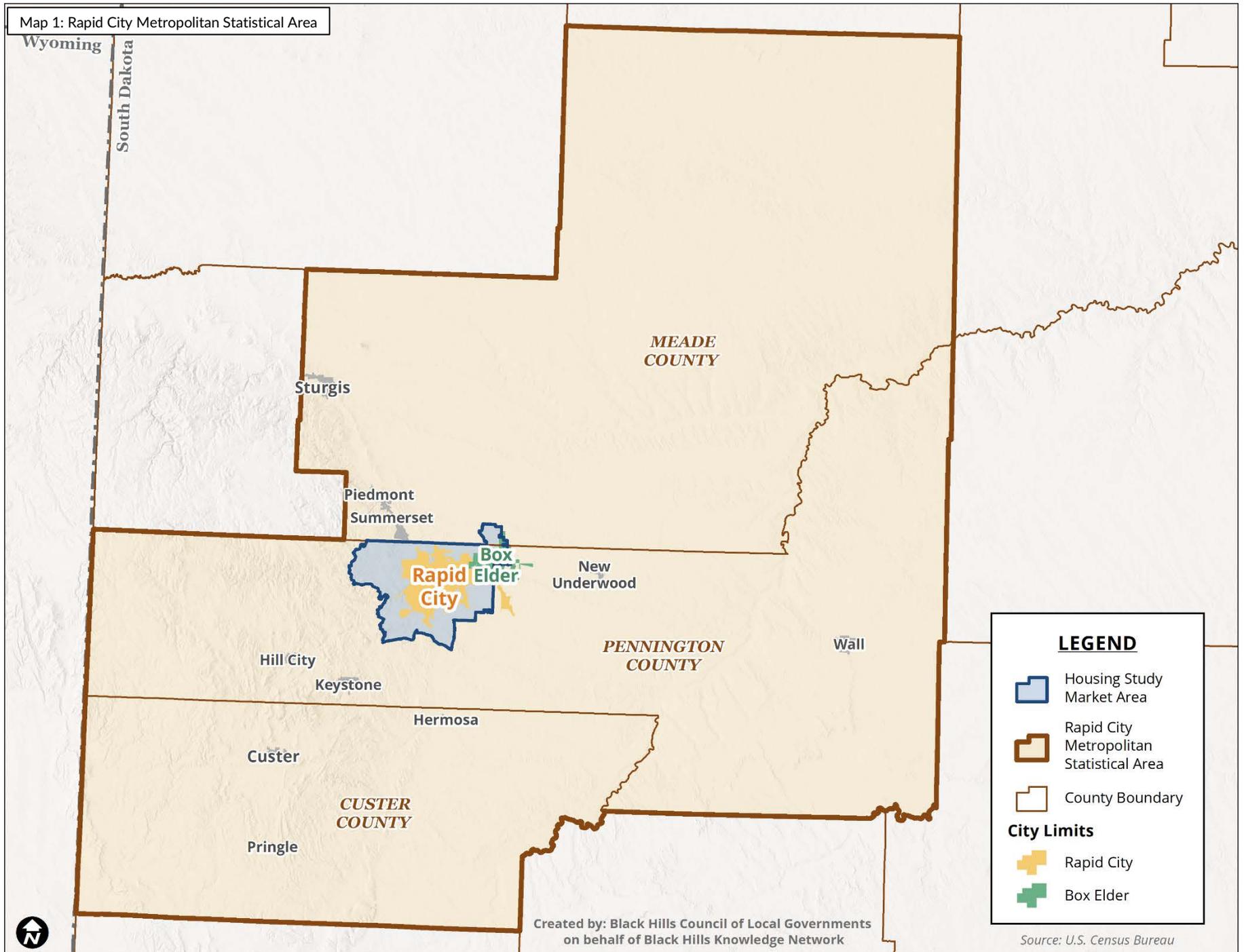
This poses a problem for the current analysis because, as shown by Map 1 on the following page, the Rapid City MSA encompasses all of Pennington, Custer, and Meade Counties. While Rapid City may be the primary population center within the MSA, the MSA encompasses a number of other communities including Hill City, Custer, Sturgis, and even Faith that have little-to-no impact on the Rapid City housing market. Using data reported at the MSA level, therefore, would not be representative of the conditions within Rapid City.

At the other extreme, if this report were to only focus on the area within the defined city limits, the outlying commuter hubs discussed above — as well as Rapid Valley — would be excluded from the study. This more narrowly defined study area would ensure that the analysis was specific to Rapid City by eliminating any outlying communities from the analysis, but this strategy would also eliminate relevant communities including Box Elder and Rapid Valley and therefore lessen the applicability of the analysis.

The third major challenge faced by this analysis relates to data availability. Quality income and housing data are available from the Census Bureau, but such data are only reported for predefined geographies. As a result, this report is constrained in which geographies and communities could be included. Because of these constraints, the communities of Summerset, Piedmont, and Black Hawk were not included in this analysis.

Two primary considerations forced this study to exclude Summerset, Piedmont, and Black Hawk. First, the Census Bureau reports housing and income estimates for Summerset and Piedmont but stand-alone estimates are not reported for Black Hawk. Additionally, housing statistics for Summerset and Piedmont have unsuitably large margins of error due to their small populations and rapid growth since the 2010 Census. In light of the above considerations, the only

Map 1: Rapid City Metropolitan Statistical Area



way to include Summerset, Piedmont, and Black Hawk in the analysis would have been to include the larger census tracts to which they belong.⁸ This strategy would have required expanding the analysis region to include much of Meade County. To maximize the applicability of the results to the Rapid City market area, these communities were therefore not included in the analysis.

Similar difficulties were encountered with respect to Box Elder. Much of Box Elder was included in this analysis, but the eastern portion of Box Elder was excluded. Due to the Census Bureau's definitions of Census tracts and reporting geographies, including eastern Box Elder would have necessitated including all of eastern Pennington County. The consequence would have been the inclusion of many smaller communities such as Wall, Wasta, and Quinn that are not part of the Rapid City housing market.

In light of the preceding considerations, this study limited itself to a clearly defined geography which we call the Rapid City market area or simply the market area. The Rapid City market area includes the census tracts comprising Rapid City and western Box Elder in Pennington County as well as the census tract containing Ellsworth Air Force Base and surrounding areas in Meade County. Map 2, on the following page, shows these Census tracts and their associated census tract numbers.

This study also uses local housing data gathered from Pennington County property tax records. These data allow for detailed and micro level analysis of the housing stock within the Rapid City market area defined by the census tracts depicted in Map 2. The data also allow for property level calculations of homeownership costs and modeling of the housing supply in the study region.

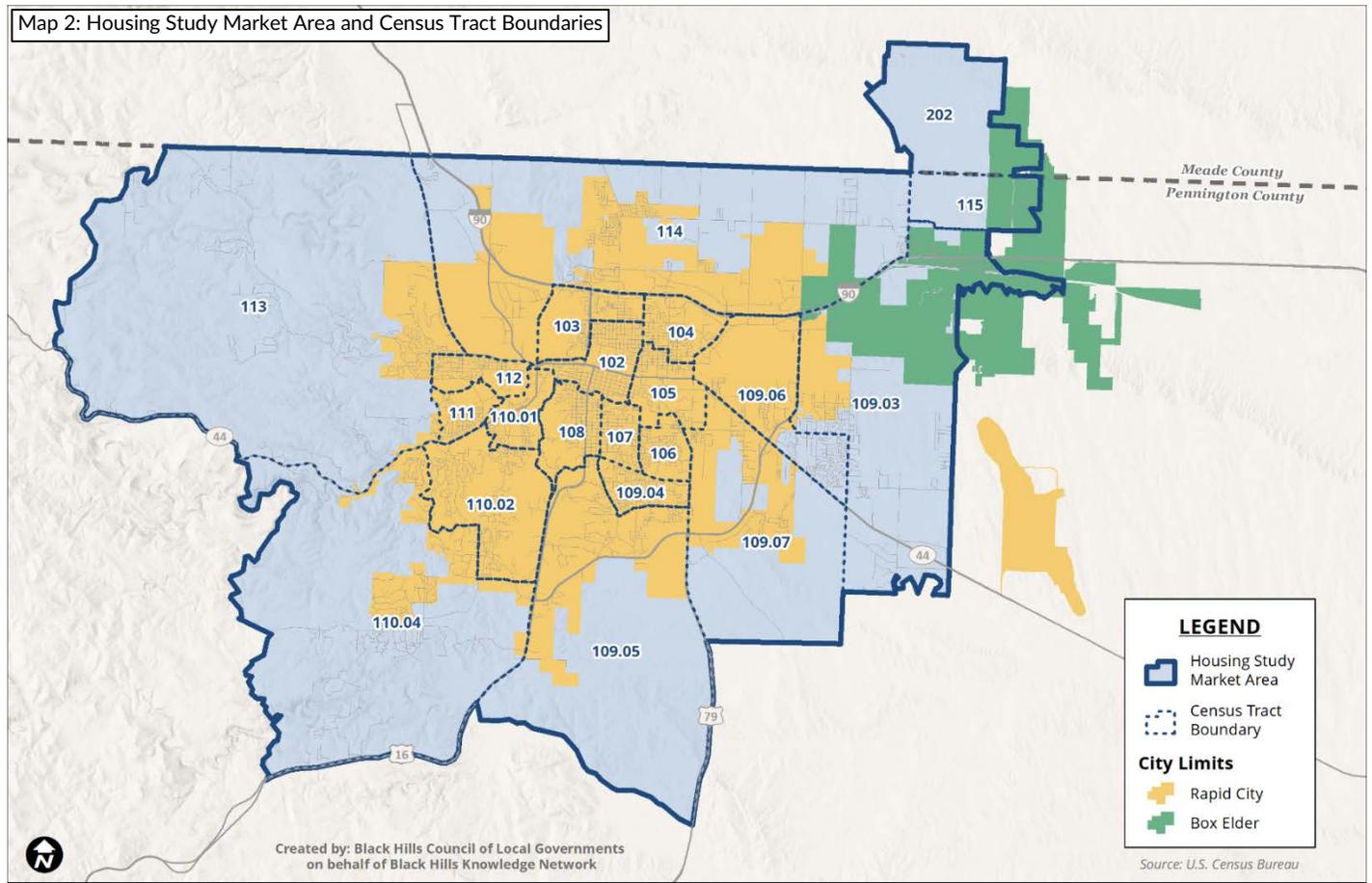
The Pennington County Department of Equalization (PCDE) and the Rapid City Metropolitan Planning Organization (RCMPO) do not use Census tracts definitions to refer to particular neighborhoods or regions within the Rapid City market area, however. Instead, PCDE and RCMPO use more locally recognizable definitions for the geographic regions contained within the Rapid City market area.^{9,10} RCMPO defines the sub-geographies within the metropolitan planning areas as Future Land Use (FLU) neighborhoods. For clarity this study uses these definitions when possible to refer to specific areas within the larger market area. Map 3, displayed below Map 2 on the following page, displays these boundaries. Map 4 combines Maps 2 and 3 to display a full-page rendering of the Rapid City market area and FLU definitions.

⁸ Summerset, Piedmont, and Black Hawk are located in census tracts 203.01 and 203.02

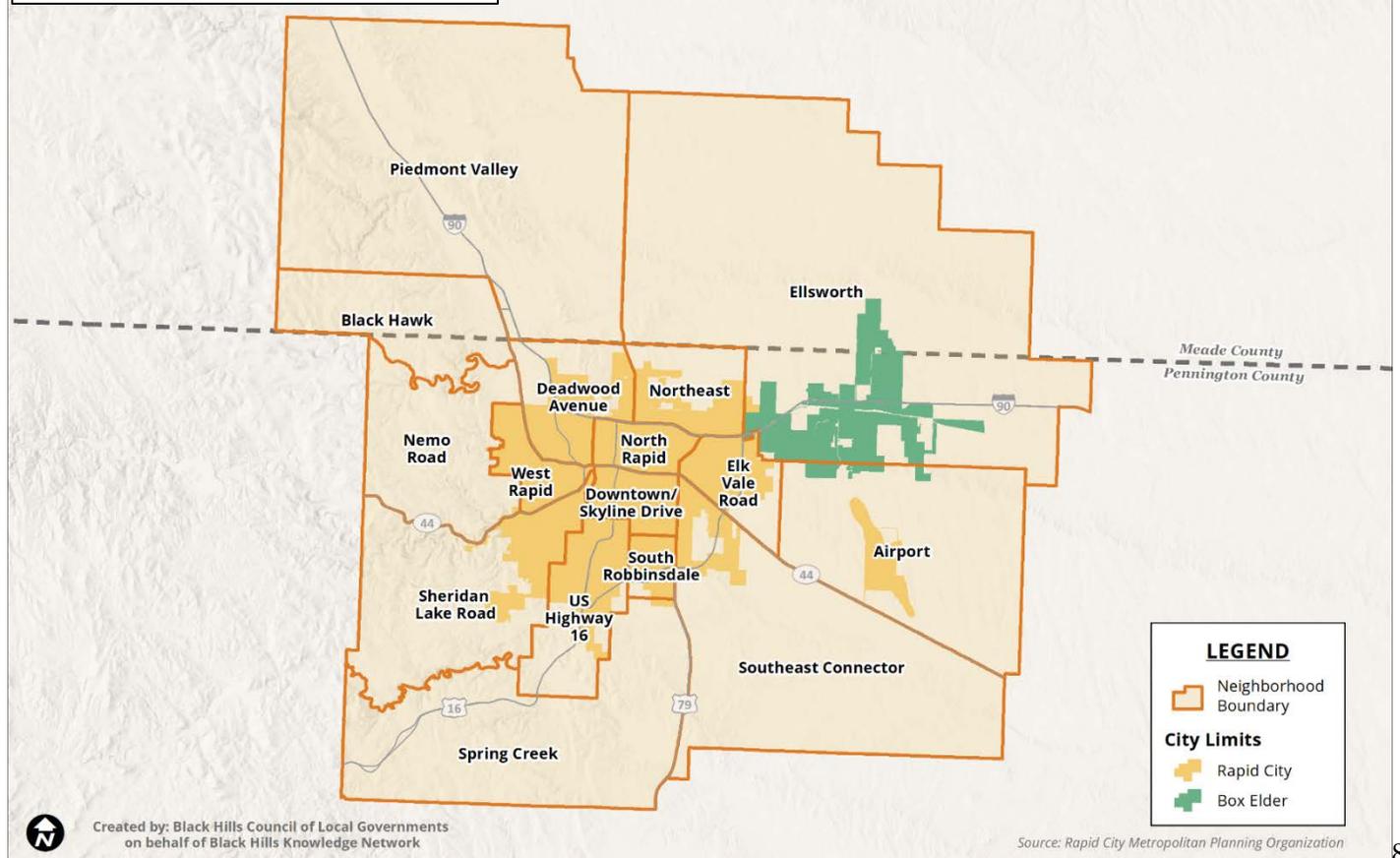
⁹ Pennington County Department of Equalization <http://www.pennco.org/equalization>

¹⁰ Rapid City Metropolitan Planning Area <http://www.rapidcityareampo.org/>

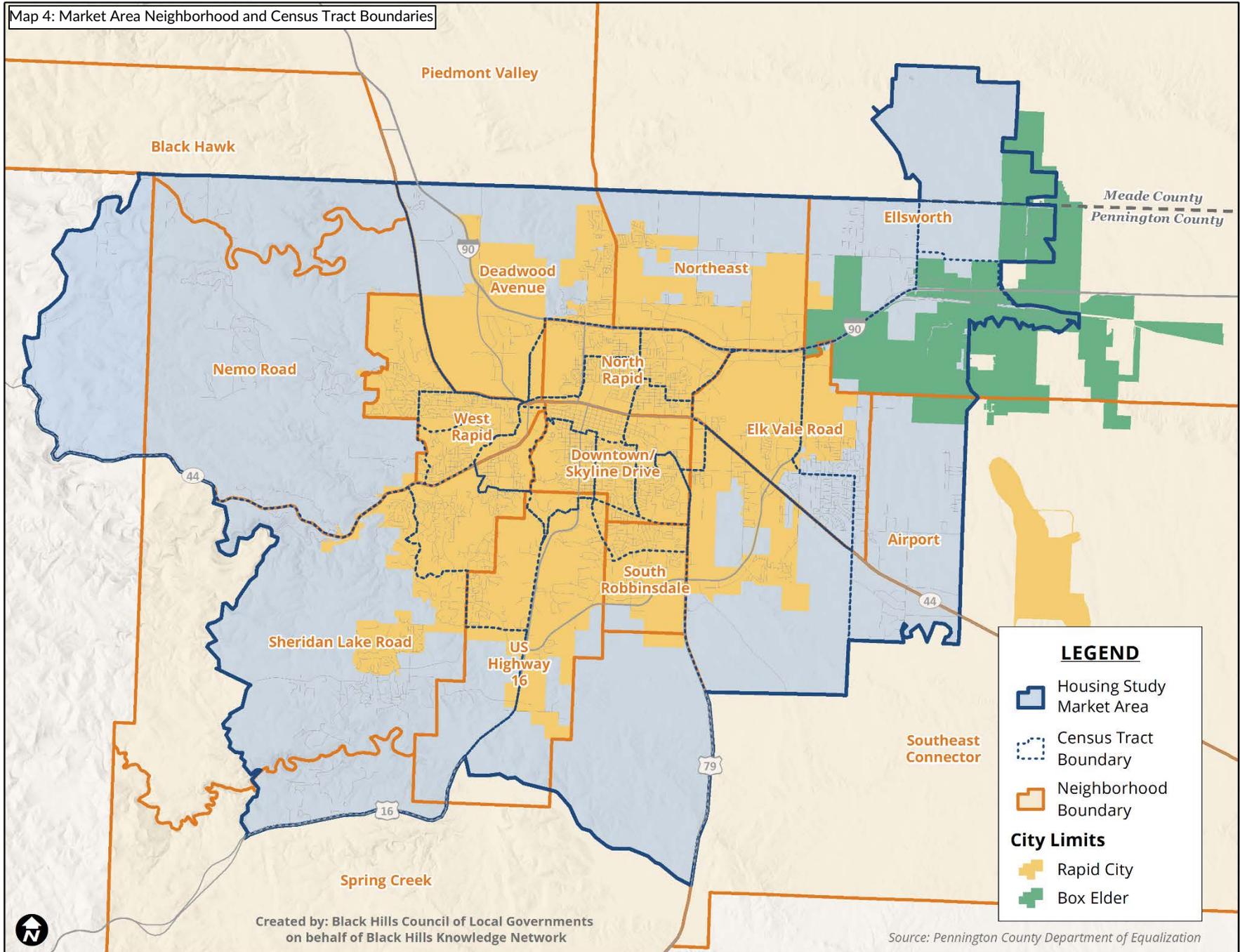
Map 2: Housing Study Market Area and Census Tract Boundaries



Map 3: Market Area FLU Neighborhood Boundaries



Map 4: Market Area Neighborhood and Census Tract Boundaries



Created by: Black Hills Council of Local Governments
on behalf of Black Hills Knowledge Network

Source: Pennington County Department of Equalization

3: DEMAND FOR AFFORDABLE HOUSING

As discussed previously, the primary goal of this study is to provide methodologically sound estimates of the Rapid City housing market’s ability to meet affordable housing needs. This section lays the foundation for that analysis by estimating housing demand for households with varying levels of income.

Sections 3.1 through 3.6 provide a thorough examination of area demographics and labor market characteristics that provides critical context for the housing demand estimates presented by Section 3.8. The demographic discussion explores the population in terms of household composition, age, race, and educational attainment. The labor market analysis discusses several key indicators of economic performance including: household incomes, employment levels, and occupational wage trends.

This section concludes in Section 3.8 with a profile of housing demand across multiple income levels and price points.

3.1: Market Area Demographics

3.1.1: Population and Households

The Rapid City and Box Elder market area experienced steady population growth from 2010-2016. Table 1, on page 12, shows that the market area population grew from 86,539 in 2010 to 94,245 in 2016, an increase of 8.9%.¹¹ Much of this growth occurred in the Rapid Valley and Box Elder communities. Population growth within Rapid City limits was relatively slow over the period 2010-2016.

Table 1: Population and Households Statistics for Rapid City Market Area¹

	2010	2013	2016	% Change 2010-2016	2022 Projections ²	% Change 2016-2022
Population	86,539	90,322	94,245	8.9	102,020	8.3
White	86%	85%	85%	-1.0	84%	-1.0
American Indian	12%	13%	15%	3.0	16%	1.0
Other	8%	8%	7%	-1.0	7%	0.0
Households	35,231	35,755	36,806	4.5	39,191	6.5
Avg Household Size	2.5	2.5	2.5	0.0	2.4	-4.0
Families	22,612	22,687	22,989	1.7	23,687	3.0
Avg Family Size	3.0	3.0	3.2	0.7	3.5	9.3

Source: US Census 5-Year ACS estimates

¹ Racial percentages do not sum to 100% as persons can report belonging to more than one race.

² 2022 Projections from ESRI and BHKM

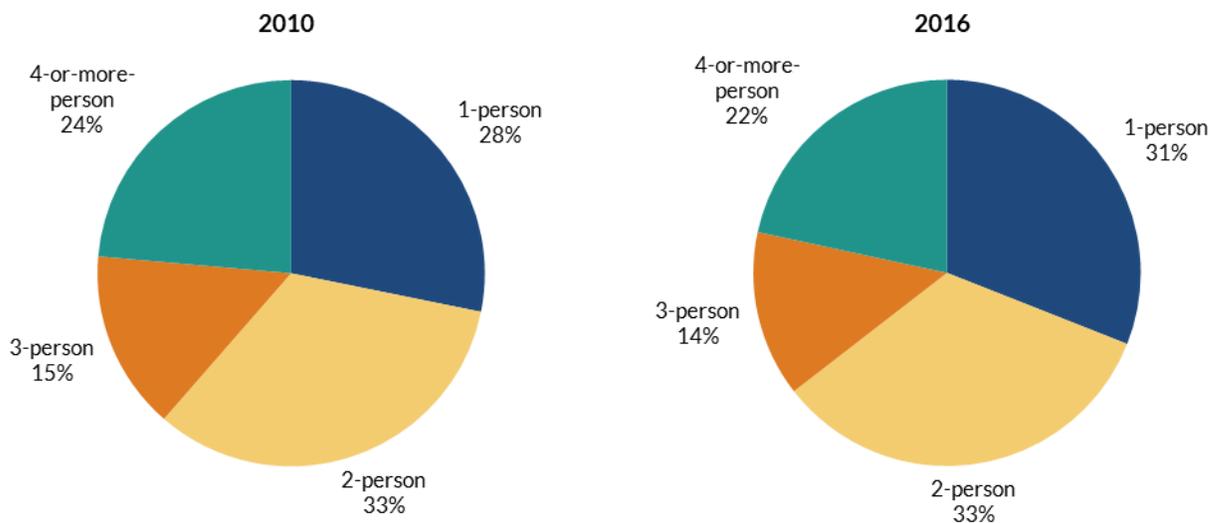
¹¹ Census population estimates for the market area are not available prior to 2010 resulting from changes in the American Community Survey that coincided with the 2010 Census.

Table 1 also shows that roughly 15% of the market area identified as American Indian in 2016, making American Indians the largest minority group in the region. The American Indian population typically fluctuates more than the white population due to migration flows back and forth between the neighboring Reservations. Because of this, the true number of American Indians living and working within the Rapid City market area is likely higher than official estimates indicate.

The Rapid City market area saw growth in the number of households but not in the average household size. In 2010, there were 35,231 households with an average of 2.5 persons per household. By 2016, the number of households increased by 4.5% to 36,806. The average household size remained at 2.5 persons per household. The estimated number of families in the Rapid City market area increased more slowly than did the number of households, rising by only 1.7% from 22,612 to 22,989. The estimated family size increased by 0.2 persons per household, but the change was not statistically significant.

Population growth is expected to continue through 2022, based on near-term population projections by ESRI and BHKN. Household growth is projected to increase relative to the recent past

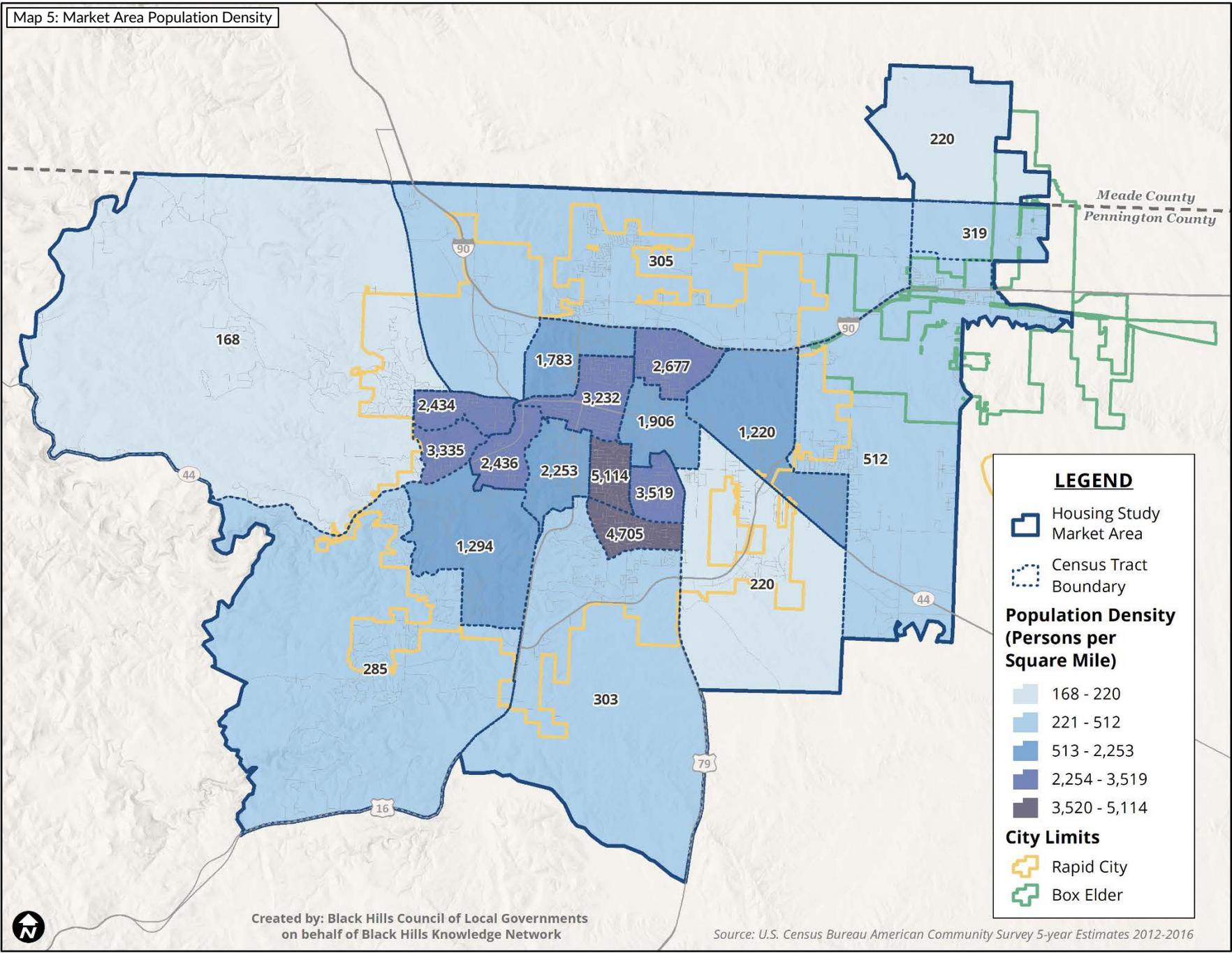
Figure 1: Percentage of Households by Size: 2010 Versus 2016



while average household size is projected to decline slightly, partly as a result of an aging population and a relative increase in the number of retirees with adult children not in the home. In contrast, population projections indicate that the number of families in the market area is expected to increase by 2022. The average family size is also projected to increase in the near term.

From a geographic perspective, much of the area population in 2016 was concentrated in the urban core, as shown in Map 5 on the following page. The population density of Census Tract 109.04 was estimated at 4,952 persons per square mile in 2016. Population densities on the periphery tended to be much lower, but the population densities of Census Tracts 110.04 and 109.05 along the southern edge of the Rapid City market area have risen sharply in recent years as Rapid City has expanded southward.

Map 5: Market Area Population Density



Created by: Black Hills Council of Local Governments
on behalf of Black Hills Knowledge Network

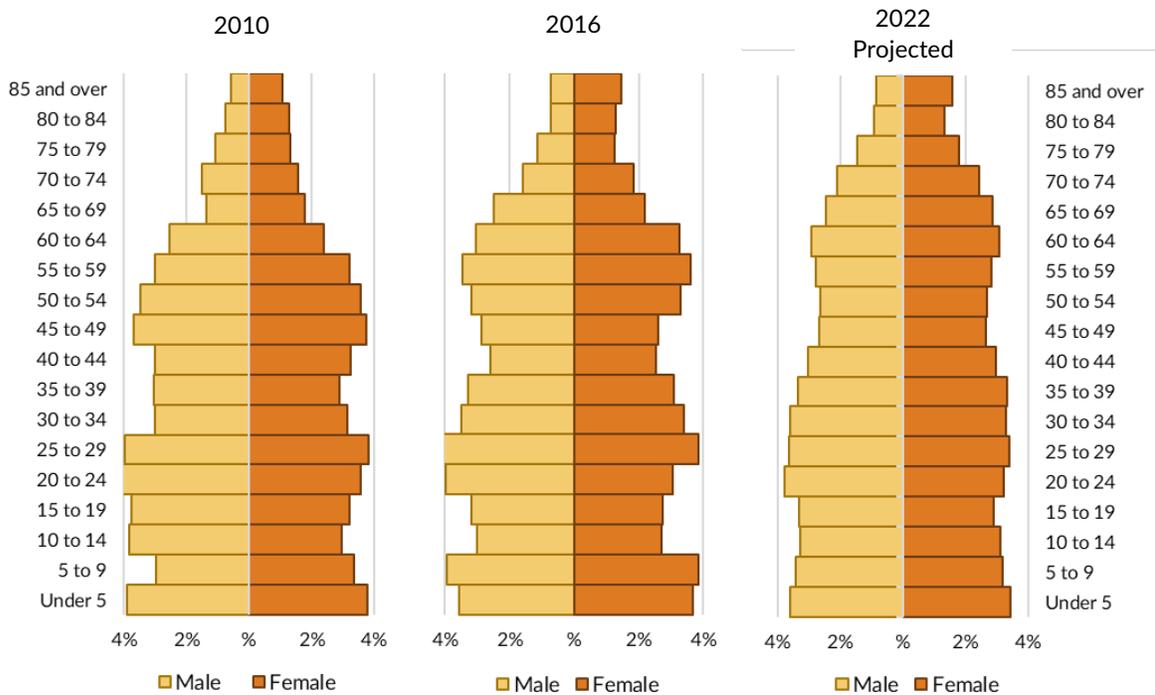
Source: U.S. Census Bureau American Community Survey 5-year Estimates 2012-2016

3.2: Aging Population

The Black Hills region of South Dakota is experiencing a long-term aging trend. The market area is aging more slowly than the larger region, however, because of in-migration from surrounding rural communities by younger adults and the presence of Ellsworth Air Force Base which employed approximately 3,000 active duty military personnel between the ages of 18-30 in 2016. The effects of in-migration and Ellsworth Air Force Base on the study area’s age profile is depicted in Figure 2 by the larger proportion of adults, and especially men, aged 20-29.

Even with the influence Ellsworth Air Force Base and in-migration, however, the median age in the study region increased from 2010 to 2016, rising from 34.4 to 34.8. Additionally, the age distribution of the population is increasingly skewing older. Figure 2 shows that between 2010 and 2016 the fraction of the population aged 65 and older has increased dramatically. Moreover, the pace of overall aging is expected to increase by 2022 based on population projections from ESRI and BHKN. The market area has a substantial cohort of individuals aged 55-64 who are approaching retirement age within the next ten years. By 2022, an estimated 18% of the population is expected to be 65 and older.

Figure 2: Population Pyramids for Rapid City Market Area

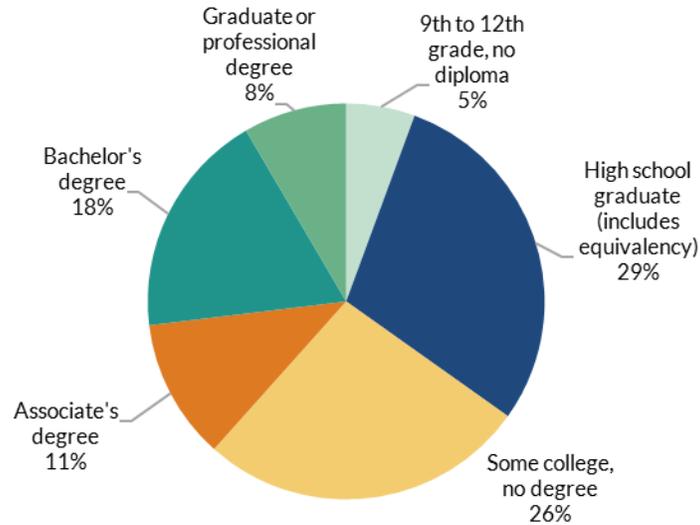


The overall aging trend will have a pronounced effect on the types of housing needed within the market area in the years to come. The above household demographic trends indicate that near-term housing demands may tend towards smaller, single-family homes and apartments. An aging population with more retirees may demand housing types not associated with a younger demographic. For instance, older adults may prefer and demonstrate need for main floor laundry facilities or single-floor living spaces.

3.3: Educational Attainment

Based on 2016 5-year ACS estimates, 92.1% residents in the study area over the age of 25 had at least a high school diploma or GED certification. Of those, 29% had a high school diploma as their highest academic credential while 26% had attended college or university but had not yet earned a degree. An additional 11% had earned an associate's degree and 18% held bachelor's degrees. Figure 3, below, summarizes these statistics.

Figure 3: 2016 Rapid City Market Area Educational Attainment

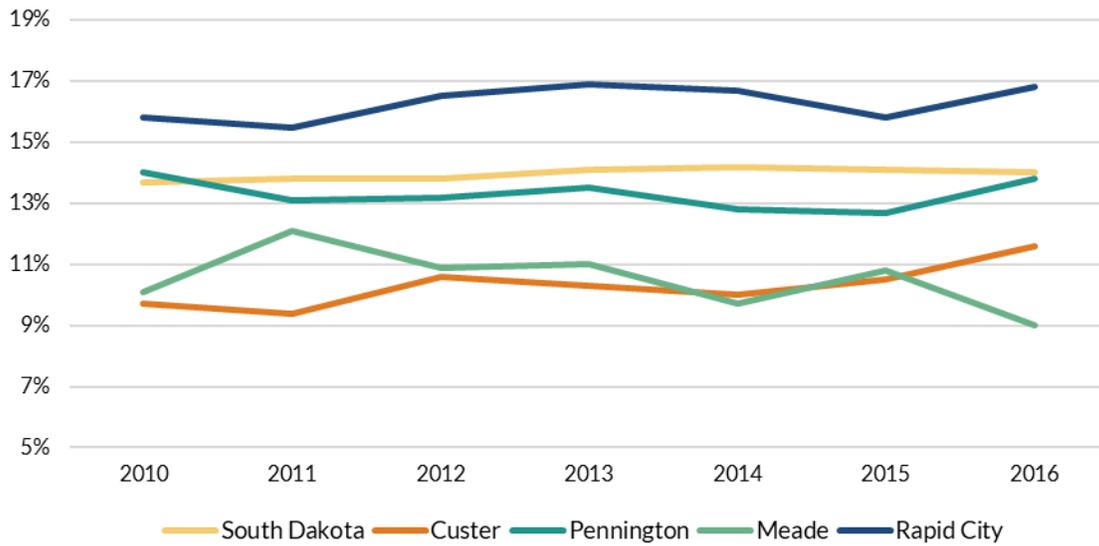


Overall, market area levels of educational attainment were slightly lower than the state as a whole, where the percent of adults over 25 with at least a bachelor's degree was estimated at 29% in 2016. This was well behind the five-year trend for the Sioux Falls metropolitan area of 31%. Lower levels of educational attainment within the Rapid City market area, relative to the state and the Sioux Falls metropolitan area, have been a longstanding concern given the positive relationship between educational attainment, incomes, and economic growth.

3.4: Poverty

Poverty and housing affordability are inextricably linked. Understanding poverty in the community provides crucial context for an analysis of how different groups are affected by housing-cost burdens. In this section, we detail several important trends regarding the number of households and families in poverty as well as disparities that exist across racial lines.

Figure 4: Poverty Rates in Rapid City Market Area and Surrounding Areas



3.4.1: Poverty Rates

Figure 4, above, demonstrates that poverty within the market area has been consistently higher than in surrounding areas.¹² In 2016, 16.8% of the market area population lived below the poverty line — six percentage points higher than the state rate of 10.3%. The poverty rate of the market area also exceeded that of Pennington County at 14.5%, Meade County at 9.9% and Custer County at 10.6%. Moreover, recent data suggest that poverty is on the rise with 2016 poverty rates in the Rapid City market area and Custer County were higher than in 2010.

3.4.2: Poverty and Race

Table 2, on the following page, shows that White residents accounted for the majority of people living in poverty in Rapid City, but American Indians were more likely to experience the challenges of living with very low incomes.¹³ In 2016, 16.8% of the market area population, or approximately 13,429 individuals, had annual incomes below the poverty line. Of the total population, 7,527 persons identifying as White lived in poverty while 4,166 persons identifying as American Indian had incomes below the poverty line.¹⁴

In absolute terms, the number of White persons in poverty was greater than the number of American Indian persons in poverty, but the more relevant statistic is the fraction of the respective sub-

¹² 2016 Department of Health and Human Services poverty guidelines defined the poverty line as: (1) 11,880 for 1-person households, (2) 16,020 for 2-person households, (3) 20,160 for 3-person households, and (4) 24,300 for 4-person households. Full details are available at <https://aspe.hhs.gov/computations-2016-poverty-guidelines>

¹³ Due to the customized geography of the Rapid City market area, poverty statistics by race were not available in Census 5-Year ACS estimates prior to 2013. For the same reason data on SNAP benefits are not available prior to 2015. Therefore Table 2 reports only on estimates from 2016.

¹⁴ Includes only persons who identified as belonging to a single race.

Table 2: Poverty Rates and SNAP Benefits by Race¹

	2013		2016	
	Number of Persons	Percent of Total	Number of Persons	Percent of Total
Below Poverty Line	12,458	16.9	13,429	16.8
White	7,143	12.6	7,527	13.2
American Indian	3,904	47.7	4,166	43.3
			Number of Households	Percent of Total
SNAP Benefits ²			4,627	12.6
White	--	--	2,990	9.2
American Indian	--	--	1,249	55.3

¹ Includes only households where the head of household identified as belonging to a single race.

² SNAP benefit statistics were not available for 2013.

populations in poverty. Table 2 shows that American Indians in the study area were over three times more likely to live in poverty than their White counterparts. Approximately 43.3% of American Indians lived below the poverty line in 2016, compared to just 13.2% of White individuals.

A similar pattern for Supplemental Nutrition Assistance Program (SNAP) benefits is reflected in Table 2.¹⁵ An estimated 4,627 households in the Rapid City market area received SNAP benefits in 2016. Of these households, approximately 2,990 had a White head of household compared with 1,249 with an American Indian head of household.¹⁶ Again, while more White households receive SNAP benefits than American Indian households, American Indian households were six times more likely to receive SNAP benefits than their White counterparts. Just 9.2% of White households received SNAP benefits compared to 55.3% of American Indian households.

3.4.3: Poverty and Education

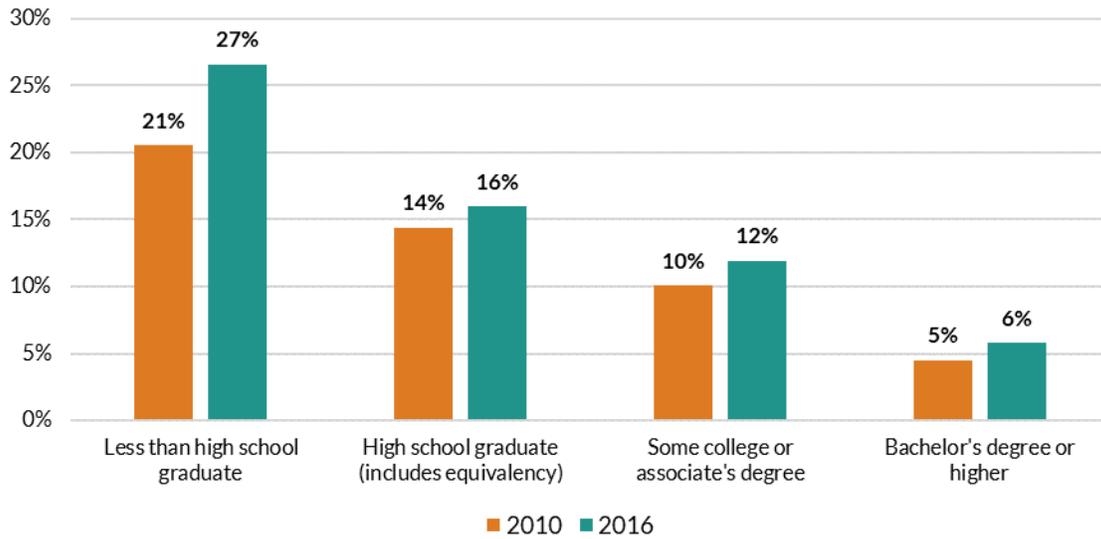
Poverty rates and educational attainment in the study region showed some correlation. Only 5.8% of individuals with a bachelor's degree lived below the poverty line. High school graduates and those with some college credit but no degree were more likely to live in poverty than college degree holders at 16.0% and 11.9%, respectively. Individuals without a high school diploma were the most likely to live in poverty at 26.6%.

Figure 5 shows a trend that cannot be ignored. Poverty rates for those without a high-school diploma or equivalent rose by 29% in the last seven years. For individuals without a high-school education, let alone a post-secondary education, the chances of escaping poverty were much lower in 2016 than in 2010. Section 3.6.3 also shows that many of the jobs requiring low levels of education were low paying and have experienced stagnant wage growth over the last several years.

¹⁵ The SNAP benefit program is often referred to as the Food Stamp program as it is a modification and continuation of the earlier Food Stamp program.

¹⁶ Includes only households where the head of household identified as belonging to a single race.

Figure 5: Poverty Rate for Residents 25 Years and Older by Educational Attainment



3.4.1: Children and the Elderly in Poverty

The final component of the poverty analysis explores how poverty affected children and older adults. According to Census statistics reported in Table 3, the absolute number of youth and elderly living in poverty has risen since 2013, but the rates of poverty for these populations has remained relatively constant.

Table 3: Poverty Rates and SNAP Benefits by Age¹

	2013		2016	
	Number of Persons	Percent of Total	Number of Persons	Percent of Total
Poverty Statistics	12,458	16.9	13,429	16.8
Under 18 years	4,618	23.6	5,053	23.3
65 years and over	1,051	11.0	1,097	10.3
			Number of Households	Percent of Total
SNAP Benefits ¹	--	--	4,627	12.6
Children <18	--	--	2,698	24.4
Married Family	--	--	635	9.8
Single Mother	--	--	1,253	51.2

¹ SNAP benefit statistics were not available for 2013.

Table 3 shows that an estimated 5,053 people under 18 years of age, or 23.3% of all persons under 18, lived in poverty during 2016, an increase of 635 individuals since 2013. Poverty amongst the older adult population was much less common. According to ACS estimates 1,097 persons aged over 65 lived in poverty, representing 10.3% of all persons aged over 65.

The number of persons receiving SNAP benefits is another important indicator of the health of a local economy. Table 3 reports that 4,627 households in the study area received SNAP benefits in 2016. Of those households, 2,698 had children under the age of 18. Family structure was a better indicator of program participation than the presence of children, however. More than half (51.2%) of single mother households received SNAP benefits in 2016 versus only 9.8% of married households with two parents present.

Table 4: Percent of Students Eligible for Free or Reduced Price Lunch

	2010	2013	2016	Percent Change	Annual % Change
Market Area Average	41.2	40.1	43.7	2.6	0.4
Douglas School District	45.0	37.3	37.1	-7.9	-1.3
Rapid City Area School District	37.3	42.8	50.3	13.0	2.2

Statistics on the eligibility for free or reduced school lunch provides additional insights into poverty rates among youth in the Rapid City market area. Across both the Douglas and Rapid City Area School Districts, 43.7% of students were eligible for free or reduced school lunches in 2016 — a much higher percentage than those living below the poverty line. This rate was nearly ten percentage points higher than the state eligibility rate of 34.3% in 2016.

According to the South Dakota Department of Education's Child and Adult Nutrition Services program, for the 2016-2017 calendar year, individuals earning less than \$15,444 annually or \$31,590 for a family of four were eligible for free school lunches. Individuals earning less than \$21,978 and a family of four earning less than \$44,955 were eligible for reduced school lunches.

3.5: Household Incomes

3.5.1: Income Trends Over Time

The most noteworthy trends in the market area are those related to household incomes. Figure 6, on the following page, shows that real median household incomes (i.e. inflation-adjusted) in the Rapid City market area declined from 2010 to 2016.¹⁷ In fact, according to 5-Year ACS estimates, real median household incomes within the Rapid City market area fell by 3.2% between 2010 and 2016.

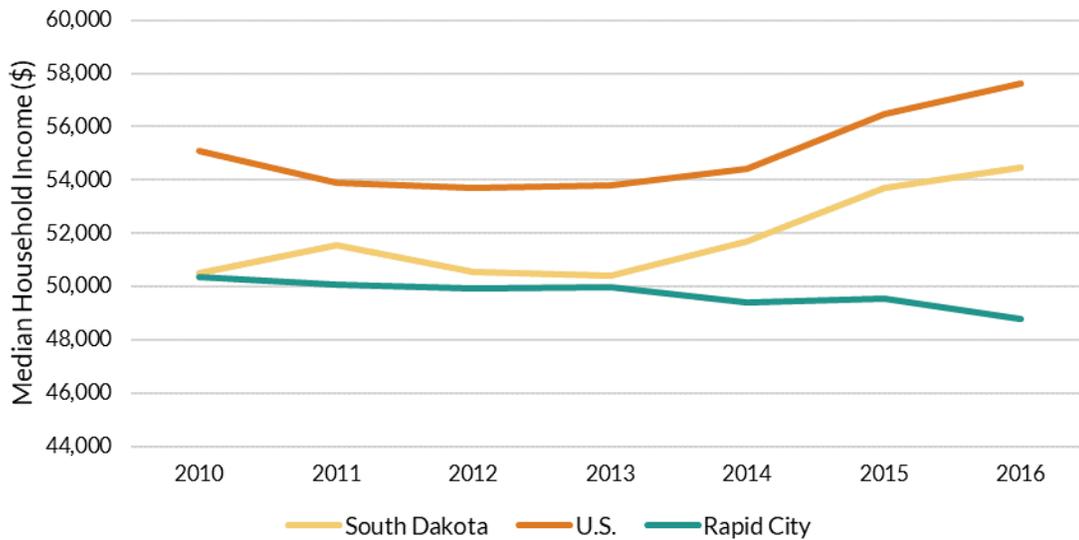
In 2010, real median household income in the Rapid City market area was \$50,380, as expressed in 2016 dollars. By 2016, the Area Median Income (AMI) had fallen by 3.2% to \$48,784. In contrast, real median household incomes across the state have grown by 7.8% over the same period — rising from a comparable \$50,513 in 2010 to \$54,467 in 2016. National real median incomes similarly rose by 4.62% over the same seven years, from \$55,071 in 2010 to \$57,617 in 2016.

¹⁷ Census median household income estimates were adjusted for inflation using the Consumer Price Index for the Midwest Region published by the Bureau of Labor Statistics. https://www.bls.gov/regions/mountain-plains/news-release/consumerpriceindex_midwest.htm

Real median household incomes in the Rapid City market area fell by 3.2% between 2010 and 2016.

Figure 6 shows that the income paths for the state of South Dakota and the Rapid City market area were highly similar from 2010 to 2013. In 2013, however, median household incomes in the Rapid City market area began to diverge from and fall behind those of South Dakota and the nation at large. It is beyond the scope of this report to determine the exact cause of the divergent income paths, but the ultimate cause of the regional stagnation likely has important implications for solving the issue of affordable housing.

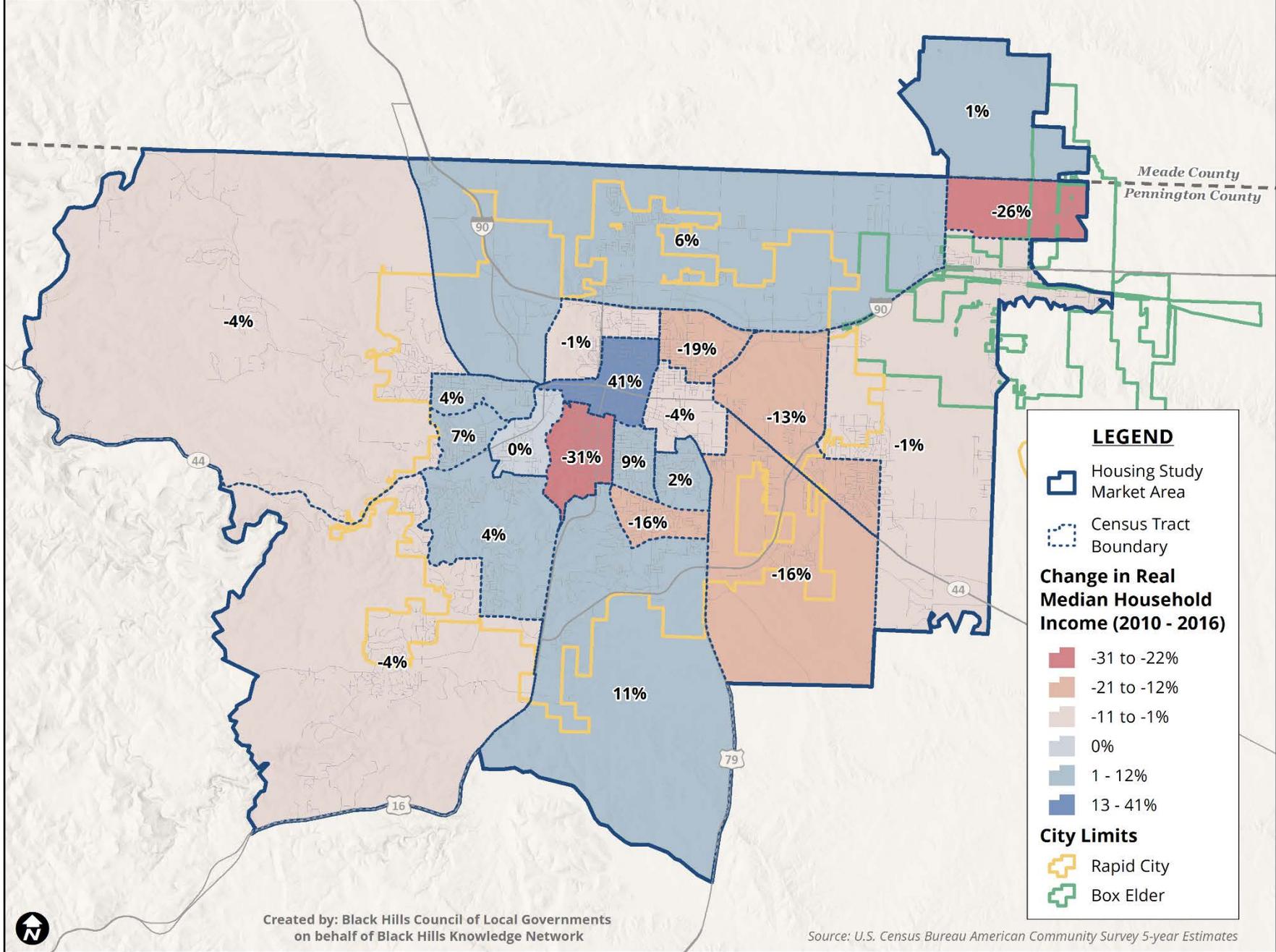
Figure 6: Real Median Household Income



In 2016, the living wage for a family of four (two adults, one working, and two children) in Pennington County was \$49,521. For a family of five (two adults, one working, and two children), the living wage was \$55,242. For one-adult households without children the living wage was \$21,886. For a one adult and one child household, the living wage was \$46,109 per year. As a result, even though the median household income has fallen recently, it was still a livable wage within the market area for smaller households.

Additional analysis also showed that changes in median household incomes were not uniform across the entire market area. Map 6, on page 20, displays a breakdown of real median income growth within the market area by census tract. The map reveals that some of the more densely populated census tracts experienced double-digit declines in real median household incomes.

Map 6: Change in Median Household Income 2010-2016



From 2010-2016, the western portion of the Downtown/Skyline Drive FLU neighborhood experienced the largest decline in real median household income, falling by 31%. Real median income in the eastern portion of the North Rapid FLU neighborhood also fell sharply by 19%. The northern portion of the South Robbinsdale FLU neighborhood saw its real median household income contract by an estimated 16%. Similarly, the real median income in the eastern portion of the North Rapid FLU neighborhood declined by 19%. Additionally, as demonstrated earlier in Map 5, these census tracts were among the most densely populated in the study area which indicates how widespread the income declines were.

Map 6 also shows that a number of census tracts experienced modest income growth over the 2010-2016 period, even though median incomes across the whole market area declined. Many of these areas were sparsely populated, but the census tracts in the West Rapid neighborhood were densely populated and experienced modest income growth more in line with the statewide trend. Additionally, the census tract in the northeastern corner of the Sheridan Lake Road neighborhood, which has seen rapid development in the past several years, also saw modest but positive real income growth.

Understanding the underlying causes of declining household incomes is critical as different causes have different implications for the housing demand. A thorough analysis of local demographic and economic data highlights three trends that partially explain the stagnation of household incomes in the market area, even though incomes at the state and national levels have increased in recent years: (1) the local population is aging out of the workforce, (2) the composition of households is changing and 1-person and 1-earner households are becoming more prevalent, and (3) the local labor market is dominated by tourism related occupations (e.g. food service, retail sales, and accommodation) that have experienced slower than average wage growth since the 2007-2009 recession. Sections 3.5.2 and 3.5.3, below, discuss how the first two factors identified above have affected household incomes. Section 3.6 provides a discussion of labor market trend that help to explain the decline in household incomes, though a complete labor market analysis is beyond the scope of the current work.

3.5.2: Aging of the Workforce

Section 3.2 showed that the population of the market area has been aging rapidly over time. This trend is expected to continue and potentially increase in pace over the next decade. As the population and workforce age, an increasing number of workers enter retirement and experience a relative decline in income as they begin to draw upon retirement savings and government benefits.

A powerful indicator of this trend is the number of households collecting retirement income. In 2010, an estimated 6,189 households collected some form of retirement income. In 2016 the estimated number of households with retirement income rose to 7,529. This represented an approximate 22% increase in the number of households with retirement income in only seven years.

Data on personal income and transfer payments from the US Bureau of Economic Analysis paints a similar picture. Focusing only on Pennington County, inflation adjusted Social Security benefit

transfers increased by 32% from \$274 million 2010 to \$360 million in 2016 — this represented a 22% increase in per capita benefit payments. Transfers for Medicare benefits increased by 23% and Veterans benefits increased by 32% over the 2010-2016 period.

3.5.3: Changes in Household Composition

The second primary driver for declining household income was a change in the typical household size. The first indication of this trend was seen in Section 3.1.1 which showed a relative shift towards 1-person households relative to all other household sizes over the last seven years. The shift to 1-person, and therefore 1-earner households, is strongly correlated with lower average household incomes.

Nowhere was this trend more clearly illustrated than in Census Tract 108, which experienced a 31% decrease in real median income between 2010 and 2016. Two key data points help explain this development and the overall income trend within the market.

First, the absolute number of younger persons in their twenties and thirties rose between 2010 and 2016. In 2010 the median age in Census Tract 108 was 41.8 years old. By 2016, the median age for the same census tract had fallen by five years to 36.8. This dramatic reduction occurred even though the median age of market area as a whole remained largely unchanged at 34.4 years old.

The second core driver of the declining incomes is the shift away from home-owning households comprised of family members towards 1-person and nonfamily renter households. Figure 1 in Section 3.1.1 showed that the proportion of 1-person households increased by 11% from 2010 to 2016. The shift to 1-person households was again especially dramatic within Census Tract 108. In 2010, an estimated 35% of households in tract 108 were 1-person households as compared to 42% in 2016. That six percentage point swing represented a 17% increase in the number of 1-person households in only seven years.

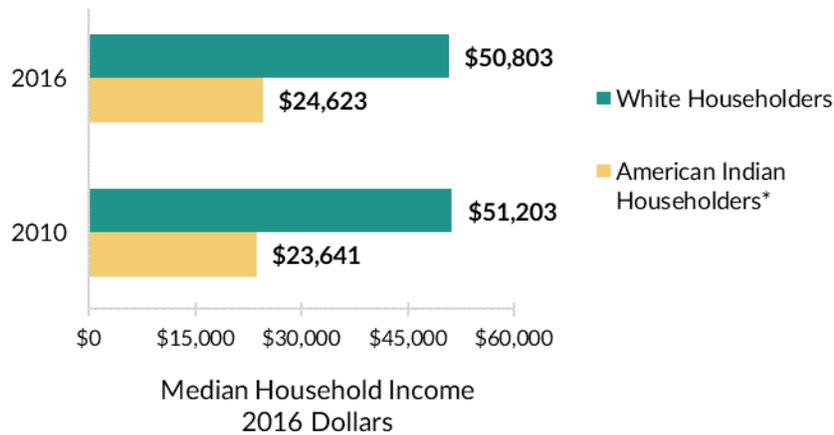
The change in household composition also coincided with a shift in housing tenure. Between 2010 and 2016, the ratio of owner to renter households in Census Tract 108 shifted five percentage points from 56% homeowner and 44% renter to 51% owner and 49% renter. This shift has additionally increased the costs of housing as rental rates are naturally higher than the ownership costs to the property owner.

3.5.4: Disparities in Household Incomes

Incomes in the market area also exhibited a large and persistent disparity across White and American Indian households. This disparity has direct consequence for housing affordability and ensures that American Indian households face higher levels of housing burden and are likely forced into lower quality housing.

Census estimates show that median household incomes for American Indian householders in the market area were historically less than half that of their White counterparts. 2010 estimates show that households with a White head-of-household had median annual incomes of \$51,203 after adjusting for inflation. In contrast, the median annual income for American Indian-headed

Figure 7: 2016 Median Household Income by Race



households was only \$23,641, or 46% that of white headed households.¹⁸ More recent income statistics show a similar pattern of income disparity. In 2016 the median annual income for white households was \$50,803 versus only \$24,623 for American Indian households.

In reality the income disparity may actually be larger than official statistics indicate. This bias primarily occurs because the American Indian population has a lower response rate to Census surveys than do other racial and ethnic groups. The exact reasons for the lower observed response rates are unknown, but a 1990 Census Bureau report by Carol Lujan proposed that, “[t]he three most common explanations given for undercounting Indians are (1) high mobility patterns among the Indian population, (2) resistance because of distrust of government and fear of losing government assistance, and (3) methodological problems such as inconsistent data collection procedures and culturally biased schedules.”¹⁹

The ultimate takeaway from the geographic and racial disparities in household income may be one of growing income inequality in the Rapid City market area. Many neighborhoods saw large declines in real median household income, especially the more populous neighborhoods, while others have enjoyed positive income growth. The nation is in the midst of one of the longest stretches of economic expansion in the post-war period, but significant portions of the Rapid City market area are not benefitting from this prosperity.

3.6: Jobs and Employment

3.6.1: Market Area Employment by Major Industry

Employment opportunities within the market have significant effects on area income trends in the Rapid City market area. Figure 8, on the following page, shows a breakdown of employment for market area residents by major industry group based on 2016 Census 5-Year ACS estimates. Three

¹⁸ Median household income statistics for American Indian households are for Rapid City and not the entire market area due to reporting issues at the census tract level.

¹⁹ Census Bureau Working Paper. “As Simple as One, Two, Three: Census Underenumeration Among The American Indians and Alaskan Natives.” Carol Lujan. Pg. 8 <https://www.census.gov/srd/papers/pdf/ev90-19.pdf>.

major industries — Health care and social assistance, Retail trade, and Accommodation and food service — employed nearly 40% of the Rapid City market area workforce.

In 2016, the Health care and social assistance industry employed an estimated 7,664 area residents, accounting for 16% of all jobs in the market area. Retail Trade employed another 6,125 workers, representing 13% of total employment. The Accommodation and food service industry accounted for an additional 4,467 jobs, or 10%, or total area employment. Finally, Figure 8 indicates that roughly 25% of market area employment was in major industries commonly associated with tourism such as: Retail Trade (13%), Accommodation and food service (10%), Arts, entertainment, and recreation (2%).

Figure 8: 2016 Industry of Employment for Market Area Residents

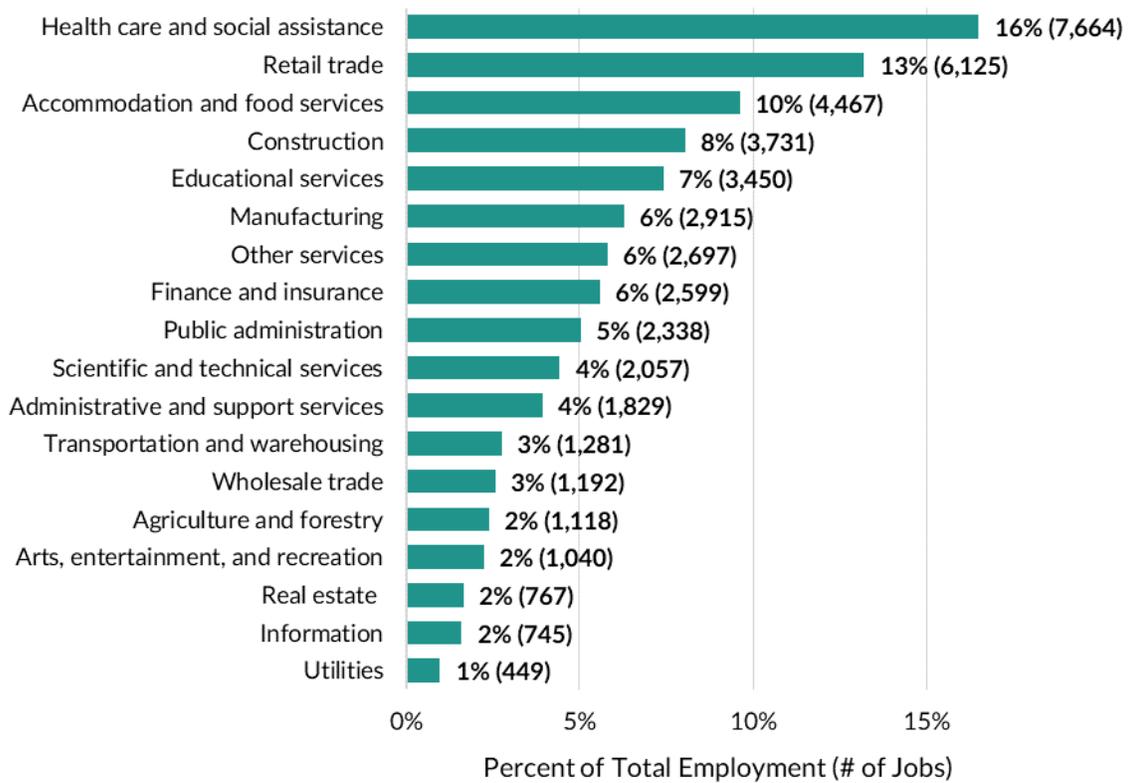


Table 5, on the following page, displays employment growth statistics from the Census Bureau. The employment data show that the Education/Healthcare industry exhibited the strongest job growth during the study period, expanding by 7.1% (731 new jobs) from 2010-2016. The Arts/Food Service industry grew by 13.1% (660 new jobs) during the same period. Meanwhile, the Retail Trade industry, which employs nearly a quarter of the workforce in the study area, grew 6.6% (380 new jobs).²⁰

²⁰ Table 5 compares market area resident employment in 2010 and 2016. The industries shown in Table 5 are reported at a higher level of aggregation than those shown in Figure 8. As a result, Figure 8 and Table 5 cannot be directly compared.

Table 5: Market Area Employment by Major Industry
Sorted by 2016 Employment Share

Industry	Employment			2016 Employment Share (%)
	2010 ^a	2016	Change in Employment	
Education/Healthcare	10,327	11,058	731	23.8
Retail Trade	5,741	6,121	380	13.2
Arts/Food Service	5,025	5,685	660	12.2
Professional Services	3,783	3,904	121	8.4
Construction	3,558	3,687	129	7.9
Finance	3,059	3,346	287	7.2
Manufacturing	2,933	2,876	-57	6.2
Other Services	2,054	2,724	670	5.9
Public Administration	2,190	2,317	127	5.0
Transportation	1,687	1,749	62	3.8
Wholesale Trade	1,177	1,179	2	2.5
Agriculture	571	1,097	526	2.4
Information	1,195	722	-473	1.6
Total	43,300	46,465	3,165	100.0

^a Employment estimates by disaggregated major industries, as in Figure 8, are not available for 2010.

The Other Services industry, which includes automotive and home repair, cosmetology services, dental services, and the non-profit sector, was also a major source of employment growth in the Rapid City market area, expanding by 32.6% between 2010 and 2016.

Finally, the Information industry, which includes the Publishing, Broadcasting, and Data Processing industries among others, shed a 473 jobs from 2010 to 2016, contracting by 39.6%.

3.6.2: MSA Employment by Major Occupation Group

Industry employment is a useful benchmark for assessing the overall health of the labor market, though a more complete understanding is gained through an analysis of employment trends at the occupation level. The Bureau of Labor Statistics (BLS) provides detailed occupational employment and wage estimates for Rapid City MSA, but estimates specific to the Rapid City and Box Elder communities are not available.

In 2016, BLS employment statistics estimated total employment in the Rapid City MSA at 65,320 jobs. Total employment of residents within the Rapid City market area in 2016 was 46,465 jobs. Based on these employment estimates, 71.1% of all MSA employment in 2016 was within the Rapid City market area. The Rapid City market area was therefore the major driver of all occupational trends captured by BLS data at the MSA level. As a result, the occupational data for the MSA provides insights into the labor market of the Rapid City market area even though the geographies of the Rapid City MSA and market area differ greatly.²¹

²¹ See Map 1 for a comparative rendering of the Rapid City MSA and the Rapid City market area.

Table 6: Top Ten Major Occupations by MSA Employment
Ranked by 2016 Employment Share

Major Occupation Category	Employment			2016 Employment Share (%)
	2010	2016	Change in Employment	
Office and Administrative Support	10,000	10,360	360	15.9
Sales and Related	7,720	8,210	490	12.6
Food Preparation and Serving Related	6,260	7,430	1,170	11.4
Healthcare Practitioners and Healthcare Technicians	4,210	5,090	880	7.8
Construction and Extraction	3,890	4,330	440	6.6
Transportation and Material Moving	3,610	3,510	-100	5.4
Education, Training, and Library	3,060	3,340	280	5.1
Building and Grounds Cleaning and Maintenance	2,560	3,120	560	4.8
Installation, Maintenance, and Repair	2,270	2,900	630	4.4
Production	2,170	2,560	390	3.9
Total	45,750	50,850	5,100	77.9

Table 6, above, reports employment data for the ten major occupation groups with the greatest number of jobs in 2016. It also shows that five major occupation groups accounted for 54.2% of all employment within the Rapid City MSA during 2016. By order of 2016 employment share they were: Office and Administrative Support (15.9%), Sales and Related (12.6%), Food Preparation and Serving Related (11.4%), Healthcare Practitioners and Healthcare Technicians (7.8%), and Construction and Extraction (6.6%). Additionally, the above occupation groups experienced 48.2% of all MSA job growth between 2010 and 2016. See Appendix A for an expanded table reporting employment levels for all twenty-two major occupation groups.

The two occupation groups with the greatest absolute jobs gains were the Food Preparation and Serving, and Healthcare Practitioner and Healthcare Technician groups. Between 2010 and 2016, the MSA gained 1,170 jobs in Food Preparation and Serving occupations, growing by 18.7% over the seven year period. Jobs in the Healthcare Practitioner and Healthcare Technician occupations increased by 20.9% over the same period with the creation of 880 new jobs.

Other major sources of job creation were the Sales, Construction, and Administrative support occupations. The Rapid City MSA added 490 new positions in the Sales and Related occupations. Employment in Construction and Extraction occupations increased by 440 positions. Finally, employment in Office and Administrative Support occupations grew by 360 jobs during the same period. The only major occupation group to see a reduction in employment was the Transportation and Material Moving group which contracted by 100 jobs between 2010 and 2016.

3.6.3: MSA Earnings by Major Occupation Group

Table 7 displays the real median annual earnings for each of the 22 major occupation groups in 2010 and 2016. For reference, Table 7 also includes the employment share of each major occupation group. All dollar amounts are adjusted for inflation and reported in constant 2016 dollars.

Annual earnings varied considerably across occupations with little change in relative earnings disparities across time. Management occupations were and remained the most highly paid, while Food

Preparation and Serving Related Occupations, responsible for 11.4% of jobs, began and ended as the lowest paid. In 2016, median wages for Management Occupations were 4.2 times higher than those of Food Preparation and Serving Related Occupations.

Table 7: Real Median Earnings by Major Occupation Group
Ranked by 2016 Median Earnings

Major Occupation	2016 Employment Share (%)	Median Earnings (2016 Dollars)			
		2010	2016	Change	% Change
Management	2.7	\$83,448	\$82,640	-\$808	-1
Legal	0.5	70,200	67,810	-2,390	-3.4
Architecture and Engineering	1.3	59,353	60,400	1,047	1.8
Computer and Mathematical	1.4	53,288	60,150	6,862	12.9
Business and Financial Operations	3.9	55,038	58,760	3,722	6.8
Healthcare Practitioners and Technical	7.8	55,886	56,500	614	1.1
Life, Physical, and Social Science	1.2	52,104	54,670	2,566	4.9
Education, Training, and Library	5.1	41,757	45,430	3,673	8.8
Installation, Maintenance, and Repair	4.4	37,757	40,500	2,743	7.3
Protective Service	2	40,681	39,130	-1,551	-3.8
Community and Social Service	1.9	37,159	37,930	771	2.1
Construction and Extraction	6.6	34,540	35,670	1,130	3.3
Farming, Fishing, and Forestry	0.1	30,084	34,410	4,326	14.4
Arts, Design, Entertainment, Sports, and Media	1.5	31,421	30,880	-541	-1.7
Transportation and Material Moving	5.4	29,138	29,140	2	0
Office and Administrative Support	15.9	26,584	28,710	2,126	8
Production	3.9	28,095	28,220	125	0.4
Healthcare Support	2.4	27,204	27,710	506	1.9
Sales and Related	12.6	23,476	24,820	1,344	5.7
Building and Grounds Cleaning and Maintenance	4.8	22,161	23,250	1,089	4.9
Personal Care and Service	3.3	21,585	22,790	1,205	5.6
Food Preparation and Serving Related	11.4	19,694	19,900	206	1.1
All Occupations	100.0	\$29,693	\$30,930	\$1,237	4.17

As shown in Table 7, a majority of employment was largely concentrated in low-wage occupations. Four of the top five major occupation groups by employment were in the bottom half of median annual wage rankings. For example, Healthcare Practitioners and Healthcare Technician occupations were responsible for just 7.8% of all jobs and held a median wage of \$56,500. This wage was more than double the next highest employed industry, Construction and Extraction Occupations, which was responsible for 6.6% of jobs and had a median wage of \$35,670. Similarly, Office and Administrative Support Occupations comprised 15.9% of Rapid City jobs and had a median annual wage of \$28,710 while Sales and Related Occupations accounted for 12.6% of jobs and had a median wage of \$24,820 in 2016.

The rightmost columns of Table 7 present both the change in real median wages and the percent change in real median wages from 2010-2016.²² The largest median wage gains were observed in Computer and Mathematical Occupations, which grew by \$6,862 from 2010-2016. While Business

²² Real median wages are reported in constant 2016 dollars. See Footnote 15 for further details.

and Financial Operations; Education, Training and Library; and Farming, Fishing and Forestry posted significant wage gains between 3,673 and 4326, each industry comprised a small fraction of total jobs in the study area. Conversely, the five largest occupational categories remained at the middle of the pack, ranging in raw annual wage growth from \$206 to \$2,126 over the seven year period. Four occupation groups — Management, Legal, Protective Services and Arts Occupations — witnessed declines in their median wages after adjusting for inflation.

3.6.4: MSA Employment by Detailed Occupation

The Bureau of Labor Statistics reports employment and earnings data on 275 detailed occupations for the Rapid City MSA. In this section, we discuss employment estimates for the detailed occupations that employed the greatest number of persons within the Rapid City MSA during 2016. Table 8, below, shows total employment in the ten detailed occupations with the highest employment shares in 2016.

Table 8: Top Ten Detailed Occupations by MSA Employment
Ranked by 2016 Employment Share

Detailed Occupations	Employment			2016 Employment Share (%)
	2010	2016	Change	
Retail Salespersons	3,400	3,520	120	5.4
Cashiers	1,930	1,990	60	3.0
Registered Nurses	1,730	1,980	250	3.0
Food Prep and Server, Fast Food	940	1,920	980	2.9
Bookkeeping Clerks	1,500	1,610	110	2.5
Janitors and Cleaners	1,250	1,490	240	2.3
Waiters and Waitresses	1,340	1,360	20	2.1
Customer Service	1,390	1,240	-150	1.9
Stock Clerks and Order Fillers	710	1,020	310	1.6
Secretaries	1,030	1,000	-30	1.5

Table 8 demonstrates the degree to which the regional workforce skews towards low-skilled jobs. Of the top ten occupations by employment shown in Table 8, only Registered Nurses and Bookkeeping Clerks would typically require a post-secondary education. The remaining occupations in Table 8, comprising 19.2% of the regional workforce, would typically be classified as low-skilled and thus low-paying jobs

Figure 9, on the following page, provides a graphical summary of the relative size of each of the 275 occupations in the Rapid City MSA labor market. In 2016, ten of the 275 detailed occupations were responsible for 26.2% of all jobs in the Rapid City MSA.²³ The detailed occupation with the highest level of employment in 2016 was Retail Salespersons, accounted for 3,520 jobs or 5.4% of total employment. Cashiers and Registered Nurses were the next most common occupations, each accounting for 3% of all MSA jobs.

²³ The current report focuses only the ten detailed occupations that employed the greatest number of workers in 2016. Additional information regarding other occupations is available upon request.

may be low-wage jobs, workers in these occupations tend to move into higher paying occupations as they gain experience and skills.

Table 9: Real Median Annual Earnings for Top Ten Occupations
Ranked by 2016 Employment Share

Detailed Occupation	Median Earnings (2016 Dollars)				2016 Employment Share (%)
	2010	2016	Change	% Change	
Retail Salespersons	\$21,346	\$22,970	\$1,624	7.6	5.4
Registered Nurses	59,668	58,080	-1,588	-2.7	3.0
Cashiers	19,379	19,900	521	2.7	3.0
Food Prep and Server, Fast Food	18,422	19,430	1,008	5.5	2.9
Bookkeeping Clerks	30,541	33,160	2,619	8.6	2.5
Janitors	23,443	24,090	647	2.8	2.3
Waiters and Waitresses	19,020	19,300	280	1.5	2.1
Customer Service Representatives	23,835	26,580	2,745	11.5	1.9
Stock Clerks and Order Fillers	22,585	23,600	1,015	4.5	1.6
Secretaries	25,943	27,980	2,037	7.9	1.5
All Occupations	\$27,320	\$30,930	\$3,610	13.2	

3.7: Additional Demand Considerations

Before moving on to housing demand estimates, several additional considerations affecting the demand for affordable housing bear discussion. First, homelessness has become an issue of increasing concern within the Rapid City community. Section 3.7.1 provides current estimates for the number of homeless persons in Rapid City. These persons are not represented in the demand estimates presented in Section 3.8, and therefore represent additional demand for housing by some of the market area’s most vulnerable residents.

Section 3.7.2 provides a discussion of Section 8 housing subsidies and their impact on housing demand. A brief overview of the Section 8 program and discussion of recent statistics for Section 8 usage and wait times is provided.

The adoption of motels as semi-permanent housing in the market area is discussed in Section 3.7.3. Following the closing of several motels including the Imperial Inn and the Colonial Hotel, a number of families and individuals found themselves without housing. These closures brought a great deal of public attention to the role motels play in housing some of the area’s lowest income individuals and families. Section 3.7.3 provides some insight into how significant role motels play in the housing market and some of the problems that arise when motels are used for long-term housing.

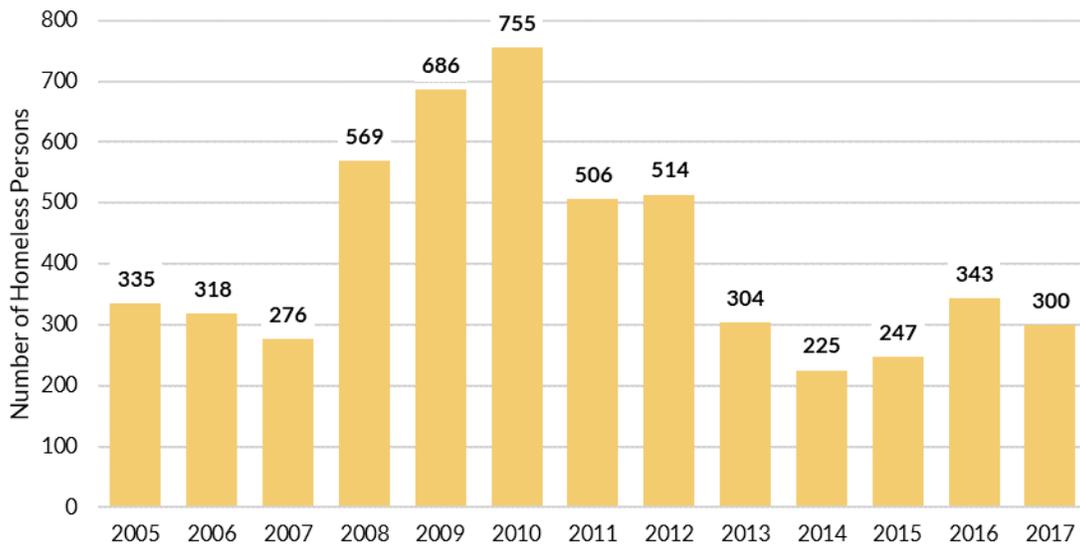
Finally, Section 3.7.4 discusses the effect of Ellsworth Air Force Base on local housing demand. Both Ellsworth’s role as a major employer and the housing allowances given to its enlisted employee households noticeably affects housing market dynamics. Section 3.7.4 attempts to quantify these effects.

3.7.1: Homelessness and Housing Demand

Though this study has focused on the supply and demand for affordable housing, the numbers do not address a key population subgroup, the homeless. According to the South Dakota Housing for Homeless Consortium, homelessness is defined as “an extreme manifestation of poverty characterized by not having a residence. Homelessness occurs for a variety of reasons and can last for short or long periods of time.”²⁴

Every year, Pennington County conducts a Point-in-Time homelessness count. Per the U.S. Department of Housing and Urban Development, the Point-in-Time (PIT) count is “a count of sheltered and unsheltered homeless persons on a single night in January.”²⁵ This annual count is required by HUD and is intended to quantify homeless persons sheltered in emergency or transitional housing every year. A count of unsheltered homeless persons is conducted every other year. Each count is planned, coordinated, and carried out locally.

Figure 10: PIT Counts of Homeless Population in Rapid City 2005-2017



Research suggests that the methods employed by HUD to conduct the PIT count result in a significant undercount of the homeless population for a number of reasons. First, HUD data collection guidelines change from year to year. According to the National Law Center on Homelessness and Poverty, “in 2013 homeless people in Rapid Rehousing (RRH) were separated from the Transitional Housing (TH) classification and were no longer included in the homeless count. Therefore,

²⁴ The South Dakota Housing for Homelessness Consortium. Frequently Asked Questions. <http://www.housingforthehomeless.org/primary-content/frequently-asked-questions.html>

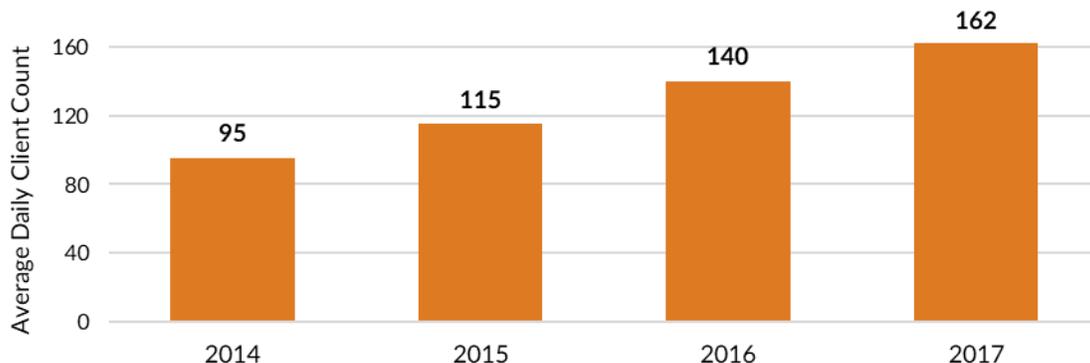
²⁵ U.S. Department of Housing and Urban Development. PIT and HIC Guides, Tools, and Webinars. <https://www.hudexchange.info/programs/hdx/guides/pit-hic/#general-pit-guides-and-tools>

the reported number of homeless people declined from 2012 to 2013 even where there was no actual change in homeless population.”²⁶ Secondly, the PIT count is limited to visual street counts, meaning that people need to be seen in order to be counted. Thirdly, the HUD definition of homelessness is narrow. It does not include people that are staying with friends or family or populations in institutions such as jails or hospitals. Lastly, the PIT count does not account for the transitory nature of homelessness.

According to PIT counts in Figure 10, the current homeless population is estimated to be 300 persons. The variation in yearly totals is likely a symptom of varied data collection methods and circumstances, rather than an accurate representation of variation in the levels of homelessness. This number also does not adequately capture the demand for services or actual living situations of Rapid City area residents. The HOPE Center, a drop-in day center that offers unduplicated services to those living in poverty and without homes, offers service usage numbers that provide a deeper picture of homelessness in Rapid City. The services offered by the HOPE Center include a mail center, a telephone/messaging center, and a storage facility for short and long-term storage, a free laundry facility, among others needed by those without stable housing.

Since 2014, average daily client counts at the HOPE Center have risen by 71% — from 95 to 162 as shown in Figure 11 below. Furthermore, the number of clients utilizing the mail center service (which enables those without a permanent address to receive mail) was estimated at 3,809 individuals in 2017. Individuals are tracked by staff and those that do not receive or pick up their mail in three months are removed from the list.

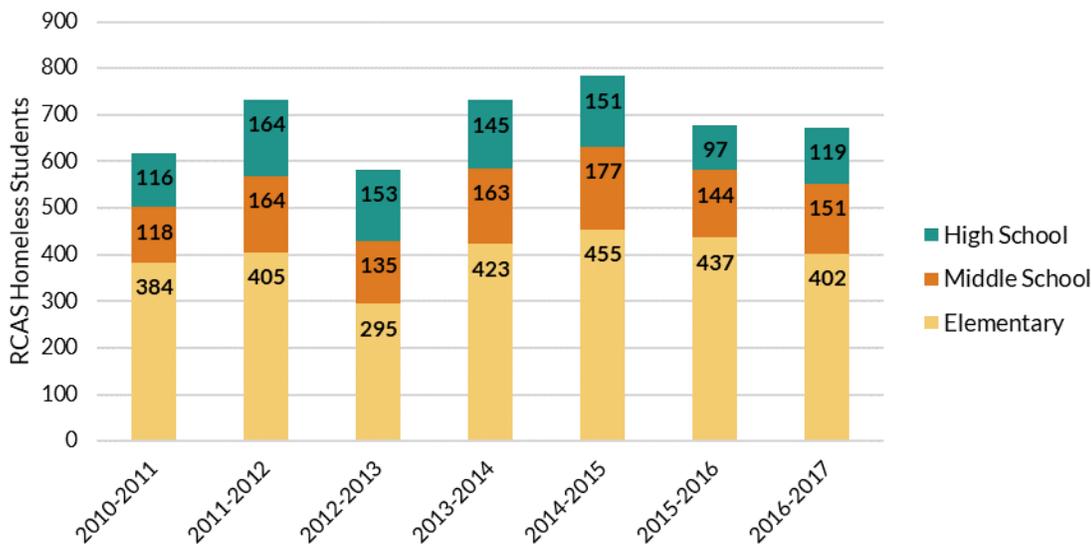
Figure 11: HOPE Center Daily Client Visits 2014-2017



²⁶ National Law Center on Homelessness & Poverty. Don't Count On It: How the HUD Point-in-Time Count Underestimates the Homeless Crisis in America. pg 6.

Rapid City Area School District’s McKinney-Vento Program tracks the number of homeless youth in the school system.²⁷ Homeless youth counts from this survey are shown in Figure 12 below. In 2016, 674 students, or 4.9% of the student body, were considered homeless. Though this number has dropped slightly from a recent high of 783 during the 2014-2015 school year, the 7-year homeless student rate has stayed relatively constant at around 5%. The relative consistency of the child homelessness rate from the McKinney-Vento Program indicates that the PIT homelessness counts likely underestimates the number of homeless in Rapid City by a large margin.

Figure 12: Rapid City Area Schools Homeless Students



3.7.1: Section 8 Housing Subsidies

The Section 8 housing subsidy program is the single largest support program in the Rapid City market area that helps make housing affordable for low-income households. The Section 8 program is managed by the US Department of Housing and Urban Development (HUD) and provides rental assistance to families in financial need. Section 8 subsidies generally take one of two forms: (1) Section 8 vouchers are given direction to tenants who may use them with any landlord accepting such vouchers, or (2) project based subsidies are tied to specific rental units rather than individuals.

In the case of both voucher- and project-based Section 8 subsidies, tenants are required to pay 30% of their incomes towards housing. The Section 8 subsidy then covers the difference between the

²⁷ Subtitle VII-B of the McKinney-Vento Homeless Assistance Act (as amended by the Every Student Succeeds Act) defines "homeless children and youths" as students who lack a fixed, regular, and adequate nighttime residence. This includes children and youths who are sharing the housing of other persons due to loss of housing, economic hardship, or a similar reason; are living in motels, hotels, trailer parks, or camping grounds due to the lack of alternative adequate accommodations; are living in emergency or transitional shelters; or are abandoned in hospitals; are living in cars, parks, public spaces, abandoned buildings, substandard housing, bus or train stations, or similar settings; and migratory children.

individual's portion and the total rent payment. Section 8 subsidies can also be used to pay for qualifying utilities. Finally, HUD sets maximum subsidy amounts for individual markets based on Fair Market Rents, which are adjusted on an annual basis.²⁸

The Pennington County Housing and Redevelopment commission (PCHRC) administers the Section 8 program in Pennington County. PCHRC additionally owns and operates several public housing properties in the community. PCHRC is therefore the primary actor in the market area working with vulnerable population to secure affordable housing.

As of April 2018, approximately 1,345 families received Section 8 housing vouchers through PHCRC — project based Section 8 subsidies are not typically used within Pennington County. PCHRC housed another 500 families in public housing properties across Rapid City. PCHRC also assisted an additional 150 families with housing through various other subsidy programs outside of the Section 8 program. PCHRC is therefore limited to providing housing assistance to approximately 1,995 individuals and families at any one point in time.

An estimated 4,289 households in 2016 earned less than \$20,000 per year. In large part, this is the target population for Section 8 vouchers as it includes individuals and families making less than 50% of AMI.²⁹ However, as discussed above, PCHRC only has the capacity to assist up to 1,995 individuals and families at any given time. As such, current subsidies in the market are unable to meet the demand for housing at the \$500 a month or less level.

As with all other communities in the United States, demand for Section 8 vouchers in Rapid City far exceeds supply, leading to extended wait times for many individuals and families. As of April 2018, approximately 2,489 individuals and families were on the waitlist for Section 8 vouchers. The time spent on the waitlist can vary greatly depending on individual situations.

PCHRC gives preference to the elderly and veterans in assigning vouchers. Even so, individuals receiving preferential status can expect to wait for approximately one year before receiving a Section 8 voucher, according to PCHRC staff. Individuals that do not receive preference may never be approved for the program.

3.7.2: Motels as Long-Term Housing

One final consideration that has promoted a great deal of discussion in the Rapid City market area is the extent to which motels serve as semi-permanent housing for low-income families. Rapid City has always had a relatively large number of hotels and motels because of its large tourism industry. Over the last several decades, aging motels in the market area have increasingly shifted their business away from booking rooms for travelers and tourists and towards weekly and monthly rentals for low-income individuals and families.

²⁸ As of April 2018 Fair Market Rents for the Pennington County were: \$676 per month for a one-bedroom unit, \$899 for a two-bedroom unit, \$1,251 for a three-bedroom unit, and \$1,491 for a four-bedroom unit.

²⁹ HUD income requirements for Section 8 vouchers are tied to both family size and income so not all individuals and families with incomes below \$20,000 per year would qualify for Section 8.

According to data provided by the Rapid City Police Department (RCPD), there were approximately 400 motel rooms serving as long-term housing for individuals and families in 2017. The number of motel units providing long-term housing has been reduced by roughly 280 units in recent years, however, following the closing and subsequent demolition of several motels including the Imperial Inn and the Colonial Hotel.

The closing of older motels forced many individuals and families to find housing elsewhere. According to RCPD, the average occupancy for area motel rooms can often be as high as six or eight persons per room. Given these statistics, it is likely that area motels are currently providing housing for between 1,200 and 2,400 persons. And the recent loss of up to 280 motel units may have forced between 840 and 1,680 persons to find new housing.³⁰

Most of motels in the Rapid City market area rent on a week-to-week or month-to-month basis, through most of the year. Typical rental rates for the motel rooms discussed here were approximately \$200 per week or \$800 per month in 2017, including utilities and furnishings. The all-inclusive nature of the motel rent along with minimal credit and background check requirements are among the most salient features for individuals and families that use motels as semi-permanent housing.

During the tourist season, however, many families and individuals living in motels may be forced to find alternative housing options as weekly and monthly rental rates may increase significantly beyond what residents may be able to afford. In light of these realities, motels must be recognized for the niche they serve in the community. They are meeting the demand of up to 400 of the market area's lowest-income households and very few comparative alternative options presently exist, but by nature these housing options are not stable and should not be considered a suitable solution to Rapid City's affordable housing need.

3.7.3: Ellsworth Air Force Base and Housing Demand

Ellsworth Air Force Base plays a major role in the communities of Box Elder and Rapid City, especially Box Elder. A 2016 Economic Impact report published by the 28th Bomb Wing Public Affairs office placed the 2016 economic impact of Ellsworth in the region at \$359 million. The same report stated that Ellsworth Air Force Base employed an estimated 3,611 active duty military personnel and another 1,095 civilian personnel. Ellsworth Air Force Base was therefore the single largest employer in the Rapid City market area and the second largest single employer in the whole Black Hills region.

Ellsworth Air Force Base not only has a large economic impact on the region, it has pronounced effects on the housing markets of Rapid City and Box Elder. The 3,611 active duty personnel employed by Ellsworth support an additional 3,879 family members. Each of these 3,611 households require housing, and the majority of them find it in the surrounding communities. Currently Ellsworth provides 730 dormitory rooms for on-base housing, and another 497 off-base single-family

³⁰ Based on a lower bound occupancy of three persons per room and an upper bound of six persons per room.

homes managed by Balfour Beatty Communities. The remaining 2,384 households therefore find housing within the Box Elder and Rapid City communities.³¹

Perhaps more important for the current analysis, however, is the influence that Basic Allowance for Housing (BAH) may have on the local housing market. Military personnel are eligible for a monthly housing allowance to cover housing expenses such as rent and utilities. Monthly BAH rates for the Ellsworth Air Force Base in 2018 range from a low of \$909 per month for E-1 grade Airman with no dependents to a high of \$1,830 per month for O-6 grade Colonel with dependents.

BAH compensation provides enlisted personnel with additional income above and beyond traditional compensation.³² According to the Ellsworth Air Force Base Finance Office, the majority of base personnel are Airmen receiving an E-1 through E-5 grade BAH each month.³³ These BAH allowances typically range between \$1,000 and \$1,200 per month. As a result BAH exerts a potentially significant influence on housing prices, and especially on rental rates in the Rapid City market area.

3.8: Demand for Affordable Housing

With the aforementioned demographic and labor market analyses in mind, this section estimates affordable housing demand within the Rapid City market area. As discussed earlier in Section 2, this report does not limit the definition of affordable housing to housing for low-income households. This report instead takes the position that all households regardless of income, need housing options that do not cause undue housing burden, which occurs when households spend more than 30% of annual income on aggregate housing costs.

Table 10 displays the principle housing demand estimates used in this report. Census data were used to estimate housing demand across multiple price points based on annual household income and the 30-percent affordability criteria.³⁴ Table 10 reports these demand estimates for both owner and renter households in 2010 and 2016.

Table 10 reports 36,806 households in the study area during 2016 (23,921 owner households + 12,885 renter households). During 2016, 35% of area households lived in rental housing while the remaining 65% lived in owner-occupied housing. As might be expected, lower income

³¹ Assuming each active duty service member is either a 1-person household or part of a larger household, the base draws in an estimated 3,611 households. On- and off-base housing provides only 1,227 housing units (730 dormitory rooms + 497 single-family units) leaving an unmet demand for 2,384 housing units.

³² Census ACS income estimates do count military housing benefits as income and thus these benefits are reflected in the household incomes in Table 10.

³³ The Ellsworth Air Force Base Finance Office provided an estimate that between 50% and 60% of personnel at the base have grades E-1 through E-5. For Airmen with no dependents BAH for these grades would range from \$909 to \$933 per month; for Airmen with dependents the BAH would range from \$1,089 to \$1,242 per month in 2018.

³⁴ Household income includes income from numerous sources including: wage and salary income, social service benefits not including SNAP benefits, pensions and social security income, military benefits such as Basic Allowance for Housing, as well as various forms of capital income. See the 2016 Subject Definitions for further details. <https://www.census.gov/programs-surveys/acs/technical-documentation/code-lists.html>.

Table 10: Demand for Affordable Housing at Various Income Levels by Housing Tenure

Income Level	Affordable Monthly Price Range	Units of Owner-Occupied Housing			Units of Rental Housing		
		2010	2016	Change	2010	2016	Change
Under \$20,000	Under \$500	1,465	1,936	471	4,736	4,289	-447
\$20,000 - \$34,999	\$500 to \$899	3,861	2,945	-916	3,395	3,132	-263
\$35,000 - \$49,999	\$899 to \$1,249	3,647	3,674	27	1,909	2,384	475
\$50,000 - \$74,999	\$1,250 to \$1,899	5,676	5,448	-228	1,528	1,850	322
\$75,000 - \$99,999	\$1,900 to \$2,499	3,777	4,082	305	973 ^{ab}	1,230 ^{ab}	257
\$100,000 - \$149,999	\$2,500 to \$3,750	2,611	3,465	854			
\$150,000 and above	\$3,750 or more	1,653	2,371	718			
Total		22,690	23,921	1,231	12,541	12,885	344

^a Includes all households with incomes at or above 75,000 per year.

^b The margin of error for this estimate exceeds the estimate itself.

households tended to favor renting while higher income households tended to favor homeownership.

Table 10 also reports that an estimated 6,225 households had incomes of less than \$20,000 in 2016, 1,936 of whom lived in owner occupied housing and 4,289 lived in rental housing. Based on these estimates, the market demanded 1,936 owner-occupied housing units and another 4,289 rental units with monthly costs of ownership or gross rents of less than \$500.³⁵

Finally, Table 10 displays how market demand changed between 2010 and 2016. Estimates for changes in demand should be approached with caution, however, as there is no way to control for inflationary bias which artificially inflates the number of higher income households in 2016 relative to 2010.³⁶

³⁵ The current analysis cannot account for possible substitution effects in housing. If the supply of affordable rentals increased, it is likely that owner households might become renters, thus decreasing the demand for owner housing.

³⁶ The Census provides estimates for the number of households within defined income ranges, but these tabulations cannot be adjusted for inflation. Due to data privacy laws, Census does not provide access to household level income data which prevents inflation indexing.

4: SUPPLY OF AFFORDABLE HOUSING

The previous section analyzed the demographics of the Rapid City market area and explored economic and labor market trends in the region. These trends and insights informed the estimates for affordable housing demand within the Rapid City market area. The analysis showed significant demand for low-cost housing options, especially in the rental market. This section analyses the existing housing stock within the market area and establishes the current supply of affordable housing.

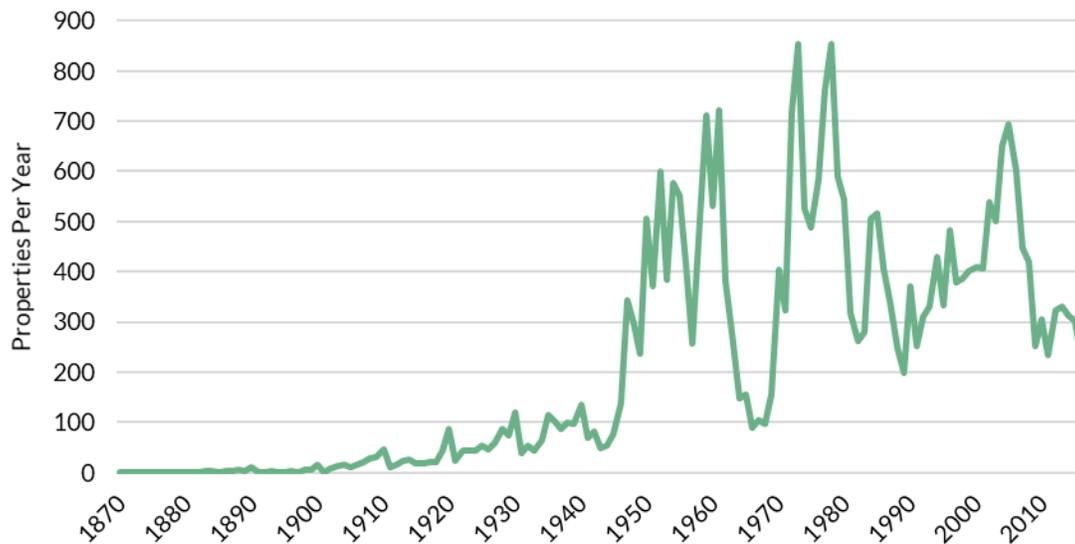
The discussion begins with a broad overview of the overall housing stock including descriptions of past construction trends, housing types, and a discussion of unit quality. After characterizing the housing stock at an aggregate level, we move to a detailed analysis of the current housing stock in both owner-occupied and rental markets.

4.1: Characterizing the Housing Stock

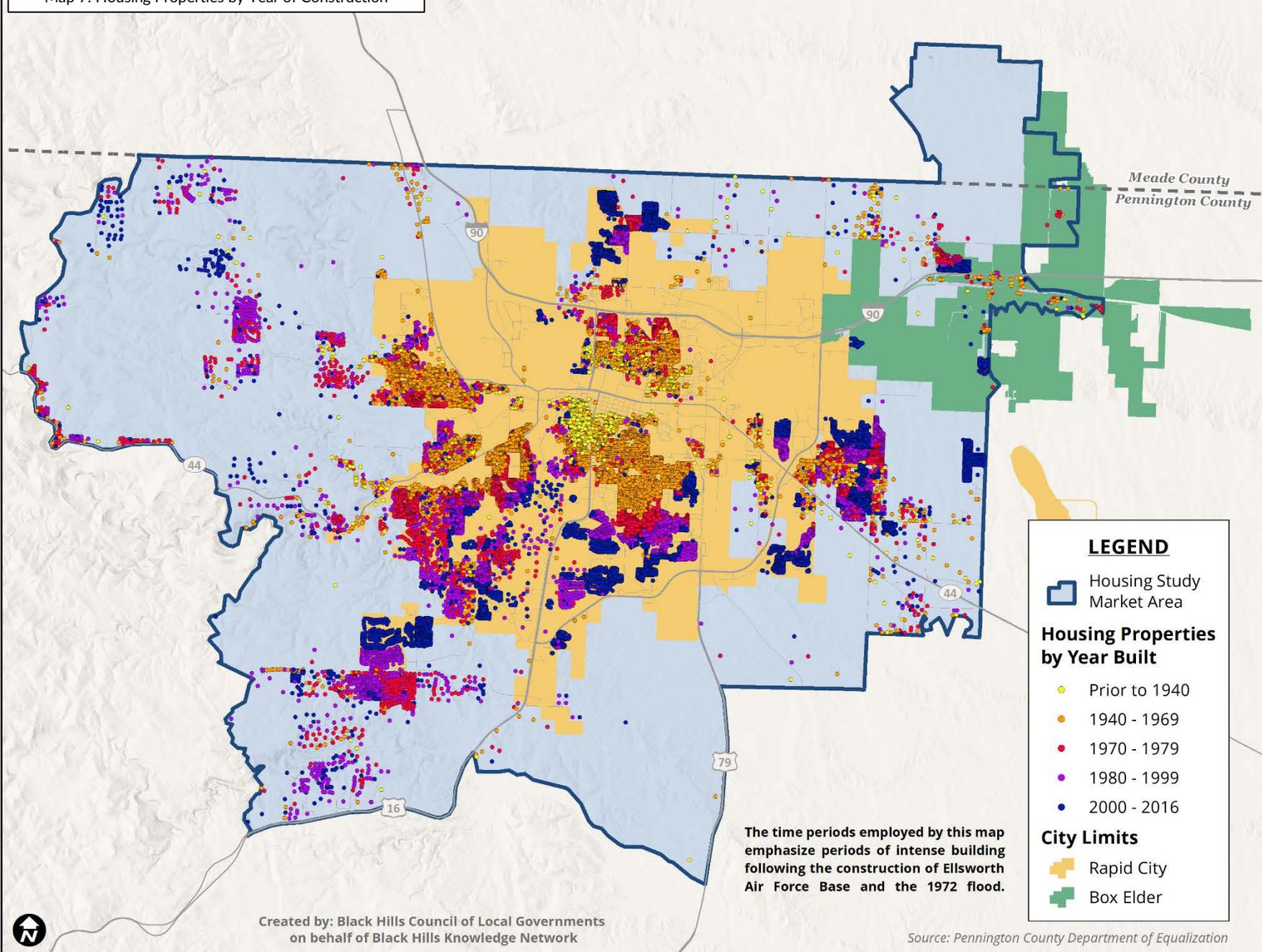
4.1.1: Construction Trends

The first step in understanding the overall housing market is to characterize the existing housing stock. Pennington County property tax records were used to facilitate this analysis. Pennington County property tax records report the year of construction for all existing structures built prior to 2017. Figure 13 shows that Rapid City underwent several periods of rapid expansion in the residential housing stock. The 1950s and 1960s was the period of most rapid construction, peaking in 1959. The 1970s was another period of intense construction with a peak in 1973 following the 1972 flood. The final period of intense construction was in the 2000s with the most intense construction having occurred in 2004 and 2005. Map 6, on the following page, displays the distribution of construction geographically.

Figure 13: Pace of Residential Construction



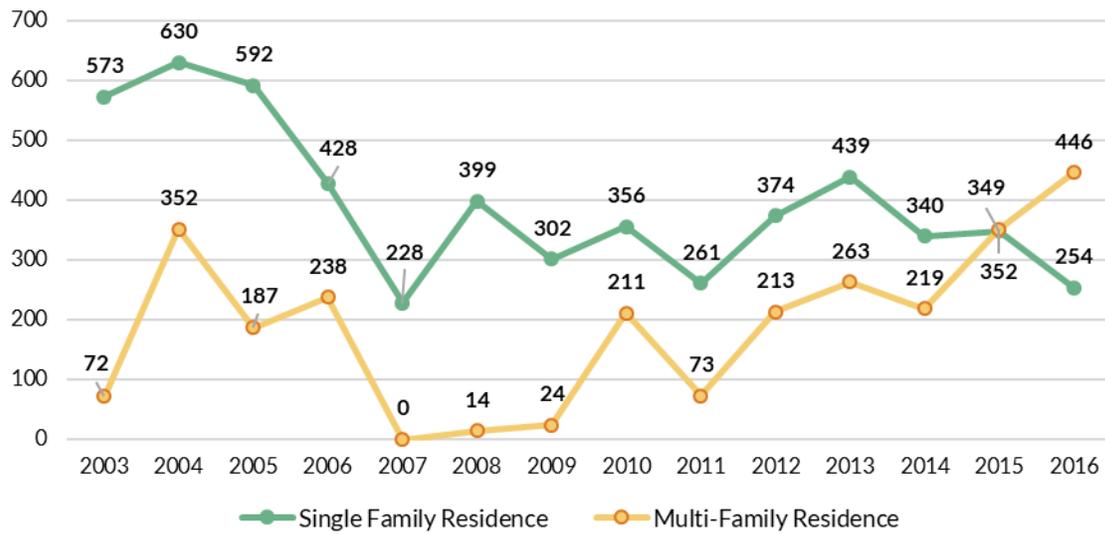
Map 7: Housing Properties by Year of Construction



Created by: Black Hills Council of Local Governments
on behalf of Black Hills Knowledge Network

Source: Pennington County Department of Equalization

Figure 14: Building Permits Issued per Year



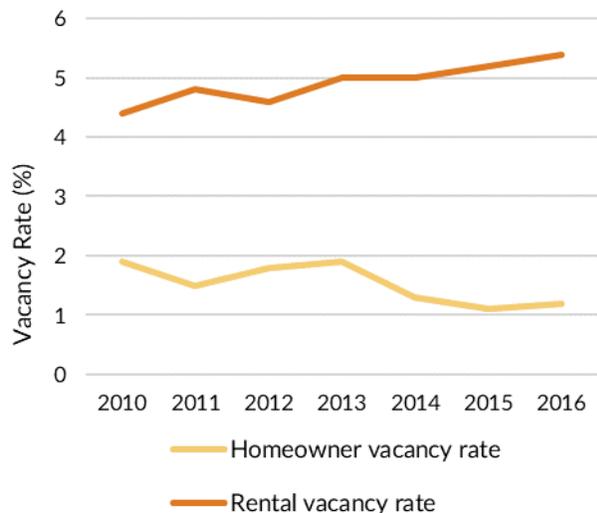
4.1.2: Recent Construction Trends

The 2007-2009 recession did not severely impact the housing markets in South Dakota overall, but the impact of the recession was clearly felt in the Rapid City market area. Figure 15 shows the number of new building permits issued for the construction of single-family residences (SFR) and multi-family residences (MFR) for the period 2003-2016. The data show that recent SFR constructions peaked prior to the recession in 2004. As of 2016, new SFR housing starts remained approximately 50% below the pre-recession peak.

Construction of multi-family residences is typically more sensitive to macroeconomic fluctuations, and the permit data for the market area reflect this fact. Figure 14 shows that new multi-family starts almost disappeared during the 2007-2009 recession but have since recovered. MFR permit issuance in 2016 surpassed the pre-recession peak in 2004.

The change in relative building patterns seems to have influenced vacancy rates. Comparing Figures 14 and 15 shows that as the pace of multi-family construction increased, starting in 2010, vacancy rates began to rise, though only slightly. In 2010 there were an estimated 552 vacant rental units

Figure 15: Census Bureau Vacancy Rate Estimates by Housing Tenure



within the market area, representing 4.4% of the rental stock. By 2016 the estimated number of vacant rental units had risen to 709, or 5.5% of the rental stock in that year.

In contrast, the vacancy rate for owner-occupied housing has trended downward. In 2010 the estimated vacancy rate for owner-occupied housing units was 1.9%. By 2016 the vacancy rate for owner housing was estimated at only 1.2%. This trend largely mirrored changes in building permit issuance. Increased building activity in 2012 and 2013 occurred alongside slight increases in the owner-occupied vacancy rate. As SFR construction slowed again in 2014 the vacancy rates began to fall as well.

4.1.3: Overview of the Housing Stock

According to Pennington County property tax records and Census housing estimates, there were 35,184 housing units (including both permanent and semi-permanent housing) in the Rapid City market area in 2016. Table 11, displays a breakdown of these units by their tenure and structure type. Maps 8 and 9 on the following pages display the geographic distribution of the owner-occupied and rental properties throughout the Rapid City market area using the parcel data contained in the Pennington County property tax records.

Table 11: Number of Existing Housing Units by Property Type

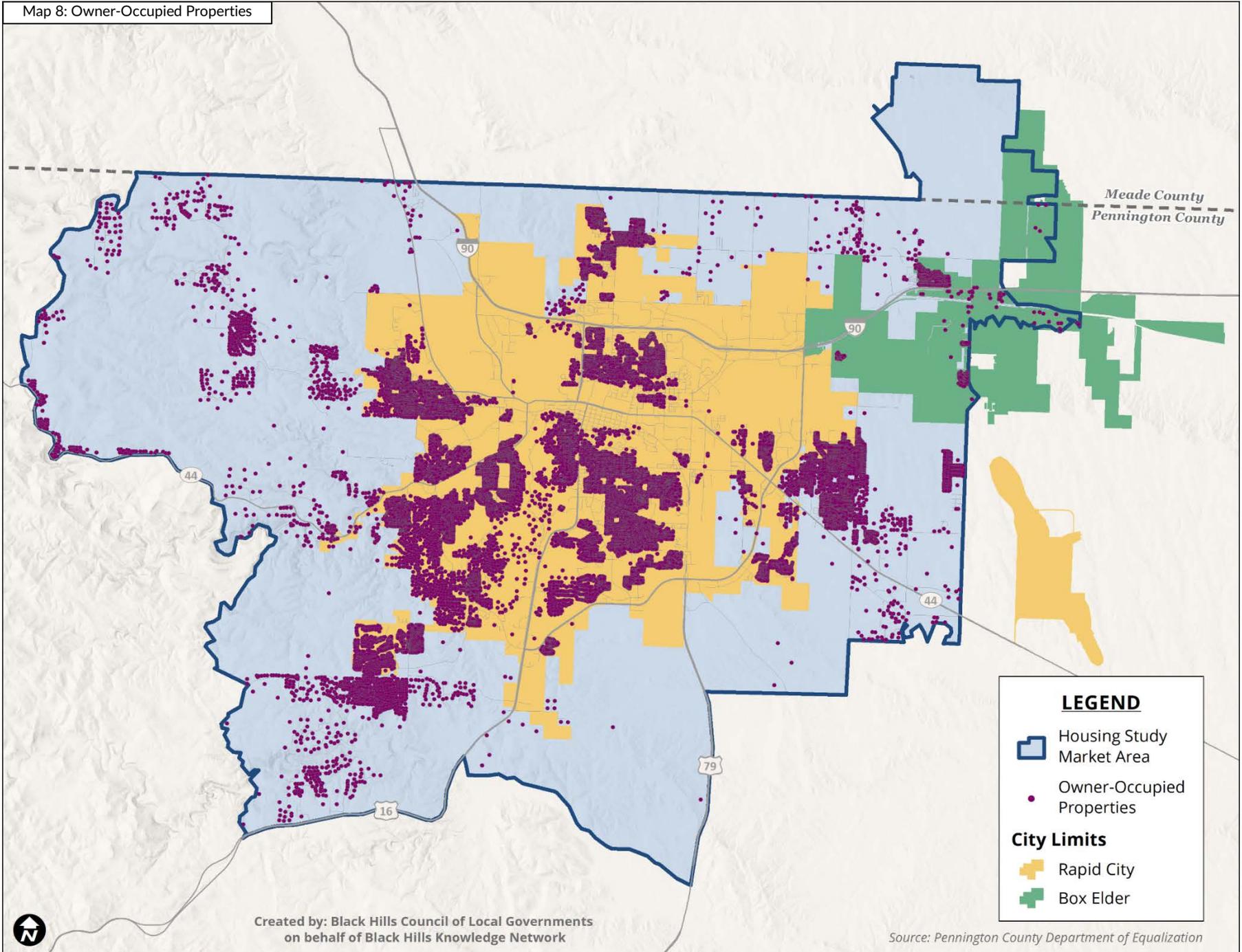
Tenure	Number of Properties	Percent of Tenure ¹
Owner-Occupied		
Single Family Residence	19,408	88.6
Town House/Condominium	1,472	6.7
Mobile Home	989	4.5
Duplex	30	0.1
Total	21,899	100.0
Rental		
Single Family Residence	4,159	32.3
Mobile Home	2,686	20.8
Apartment ³	5,182	40.2
Town House/Condo	490	3.8
Duplex	368	2.9
Total	12,885	100.0
Motel	400	100.0
Total	35,184	

¹ Totals may not sum to 100 due to rounding

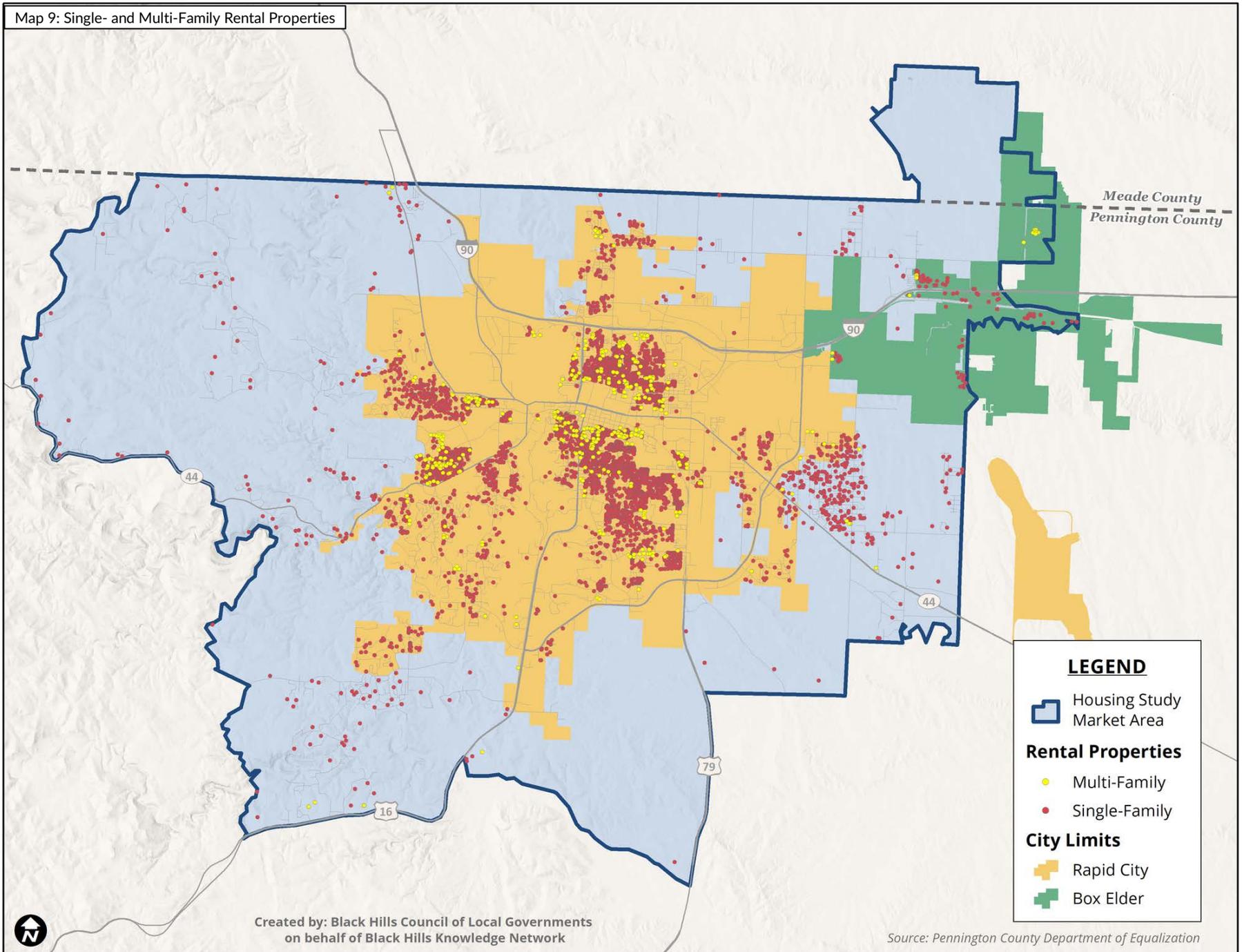
Table 11 shows that there were 21,899 owner-occupied properties in the market area during 2016. Single-family homes made up the majority of these properties with 19,408 individual properties representing 88.6% of the existing owner-occupied stock. Townhouses and condominiums accounted for 6.7% (1,472 properties) of the owner-occupied housing stock. Pennington County tax records also reported 989 owner-occupied mobile homes in 2016.³⁷

³⁷ Includes both mobile homes with and without land.

Map 8: Owner-Occupied Properties



Map 9: Single- and Multi-Family Rental Properties



Created by: Black Hills Council of Local Governments
on behalf of Black Hills Knowledge Network

Source: Pennington County Department of Equalization

Table 11 additionally reports there were an estimated 12,885 rental units within the study area during 2016, according to county tax records and Census estimates. The plurality of rental units (40%) were traditional apartments located in structures with three or more units. Single-family residences were the next largest source of rentals with 4,159 properties, comprising 32% of the rental stock. Mobile homes were the third largest component of the rental market contributing an estimated 2,686 units or 21% of the rental stock. Townhouses/Condos and Duplexes made up the remaining 7% of the rental stock with 490 and 368 units respectively.

4.2: Age and Quality of the Housing Stock

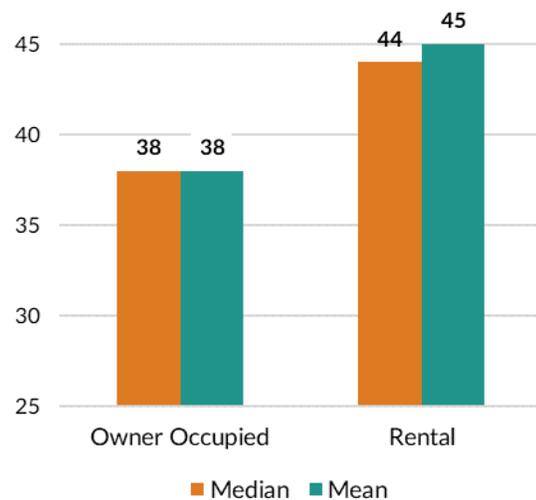
Construction trends in the Rapid City market area have changed over time. The age and quality of the existing housing stock is closely correlated with these changing patterns of development. In light of these realities, we present statistics regarding the age and quality of the housing stock for only the broadest definitions of owner-occupied and rental housing.

4.2.1: Age of the Housing Stock

Figure 16 shows that the average and median age for owner-occupied property types was 38 years at the end of 2017. The average rental property in the market area was 44.8 years old as of 2017. The median age for rental properties was 44 years.

Given the recent pace of construction for multi-family residences (see Section 4.1.2) the relative age of the rental stock might seem surprising. In practice, many older apartment properties date back to the late 1800s and early 1900s. Newer apartment complexes tend to be much larger and currently supply the majority of the actual rental units in the market. As a result, the average and median ages of rental properties age does not correlate well with average or median age of individual rental units.

Figure 16: Mean and Median Property Age by Tenure

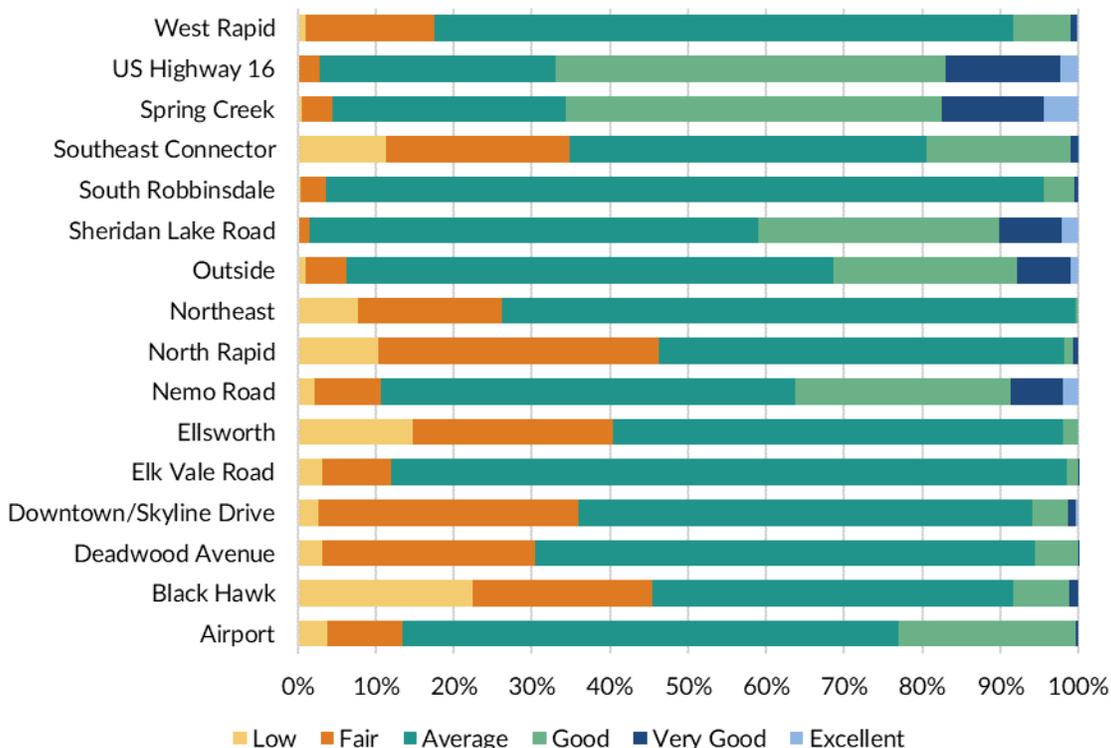


4.2.2: Quality of Owner-Occupied Housing Units

In addition to structure age, Pennington County property tax records report a qualitative measure regarding a structure's overall condition. Figure 17 presents a summary of these quality rankings by FLU neighborhood to provide general insights into the condition of the housing stock in each neighborhood. These ratings were based on visual and/or onsite inspection by county staff. Due to

natural staffing constraints, however, inspections are conducted only every few years. As a result, this analysis limits itself to presenting and discussing the data in only the broadest of terms.

Figure 17: Rapid City Housing Quality by Neighborhood



In general, the Pennington County quality ratings roughly aligned with both building and income patterns that have developed over time. The FLU neighborhoods that have seen increased development recently (e.g. the U.S. Highway 16, Spring Creek, and Sheridan Lake Road neighborhoods) tended to have a greater percentage of properties rated “Very Good” or “Excellent”. Older and generally poorer FLU neighborhoods in the study area (e.g. the North Rapid and Downtown/Skyline Drive neighborhoods) tended to have a larger percentage of properties rated as “Low” or “Fair”.

4.3: Housing Costs

The primary measures needed to determine the supply of affordable owner-occupied housing are: (1) the costs of homeownership, and (2) measures of household income. As discussed earlier in this report, the current analysis made no distinction between affordable versus workforce housing based on household incomes. This report focused on measuring the supply of housing that was affordable for households at various point along the income ladder. This section discusses the methods used to estimate housing costs in both the owner-occupied and rental markets using both property tax records and Census estimates.

4.3.1: Owner-occupied Housing Costs

Section 3 of this study explored the various factors that influenced the demand for affordable housing. The first step in understanding the supply of affordable housing is to understand recent trends in home prices as the mortgage is the largest component of the total cost of ownership.

Data on home sales were gathered from the Black Hills Association of Realtors (BHMLS) and the Mount Rushmore Association of Realtors (MRMLS). The sales data recorded 10,952 unique sales with closing dates between January 1, 2010 and December 31, 2017.

The sales data summarized in Figure 18 shows that annual home sales have increased in four out of the past seven years. Only in 2011, 2014, and 2017 did the number of home sales fall below the prior year's number of sales.

Median home prices, in contrast to median household incomes, rose over the 2010 to 2016 period causing increased housing burden and increased need for affordable housing, especially for low-income families.

Figure 18: Annual Homes Sales in Market Area

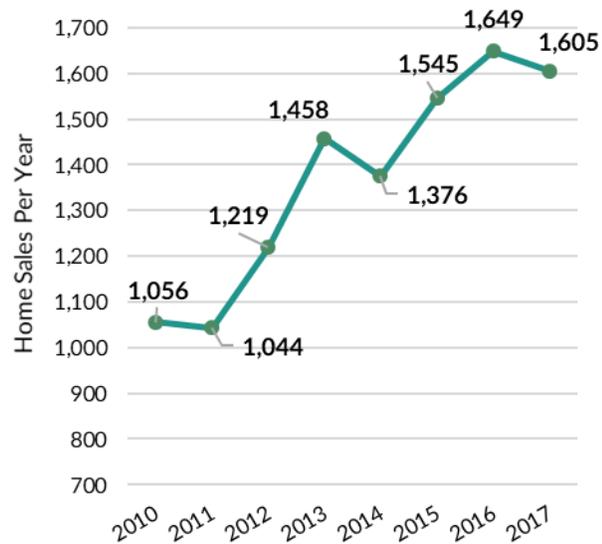
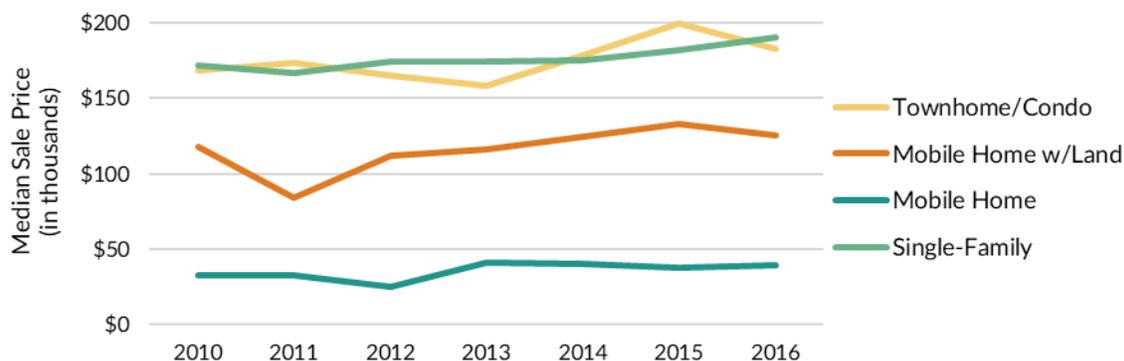


Figure 19, on the following page, depicts real median home prices from 2010-2016.³⁸ The BHMLS and MRMLS sales data show that, on average, median prices increased 11.5% from 2010-2016. The fastest rate of price growth occurred in the market for Mobile Homes without land, where median prices rose by 22.0%, from \$32,606 in 2010 to \$39,800 in 2016. Median single-family home prices rose by 10.6% over the period, rising from \$171,723 to \$190,000. Median sale prices for Townhomes/Condos and Mobile Homes with land rose by 8.3% and 6.3% respectively.

The selling price of a home and the accompanying mortgage is not the only ownership cost to consider, however. Homeowners must also pay property taxes and carry homeowners insurance, for example. The costs of utilities and fuels can also be substantial given the heating and cooling needs associated with the local climate. In order to estimate the supply of affordable housing, these associated costs were also accounted for.

³⁸ All prices were adjusted for inflation and are reported in constant 2016 dollars. See Footnote 17 for details.

Figure 19: Real Median Home Prices by Housing Type



The first step in estimating the cost of ownership was to establish market values for all single-family residences in the market area. Because only a subset of properties are sold in any given year, it was not possible to use the BHMLS and MRMLS sales data for this task. We therefore employed property tax records from Pennington County to estimate the costs of ownership for all owner-occupied property types within the market area.³⁹ The remainder of this section describes how these tax records were used to estimate total ownership costs.

We began by establishing whether assessed property values bore any relation to market values. The South Dakota Department of Revenue (SDDOR) regularly performs a statistical analysis to evaluate the accuracy of counties in their appraisal of home values for the purposes of property taxes. Based on the most recent statistical report available, covering the two-year period, November 2012 to October 2014, the median sales ratios for Rapid City and Box Elder were 94.0% and 94.3% respectively.⁴⁰ In other words, the median assessed value was 94.0% and 94.3% of the median sale price in Rapid City and Box Elder respectively. We therefore applied a 6% correction to the assessed property values to bring assessed values more into line with potential market values.

To establish that the Pennington County tax data adequately predicted market values and selling prices in the study period. We compared price data on home sales within the market area from 2016 with adjusted property values from the county tax records.

Figure 20, on the following page, shows two box plots summarizing the distributions of home values across the two data sets. The box plot on the left shows the distributions of estimated market

³⁹ The Pennington County Department of Equalization provides the following disclaimer on their website regarding the public property tax data. *Every effort has been made to offer the most current and correct information possible in these files. The information included has been compiled by county staff from a variety of sources, and is subject to change without notice. The Pennington County Equalization Department makes no warranties or representations whatsoever regarding the quality, content, completeness, accuracy or adequacy of such information and data.*

http://www.pennco.org/index.asp?SEC=306C6FFA-BCA7-4575-A613-4881E8F1DEE9&Type=B_BASIC

⁴⁰ The median sales ratio is the ratio of the median sale price to the median assessed value. SDDOR published a statistical analysis report in 2015 evaluating the accuracy of assessment values for South Dakota cities. The report can be found at http://dor.sd.gov/Taxes/Property_Taxes/Publications/PDFs/pg%2078-103_CityStatistical20142.pdf

prices using the adjusted Pennington County tax data. This box plot summarizes estimated property values for the 21,899 owner-occupied properties located within the Rapid City market area.⁴¹ The box plot on the right summarizes the distribution of all 1,649 observed selling prices for properties with closing dates in 2016.

The distributions of the two data sets were highly similar with small deviations observed across the most expensive of properties. The median estimated selling price in 2016 was \$189,000 while the median observed market price was \$189,104.

The “x” located in the middle of the box plots depicts the mean, or average, selling price across the two data sets. The average estimated market price was \$210,815 and the average observed selling price was \$205,568.

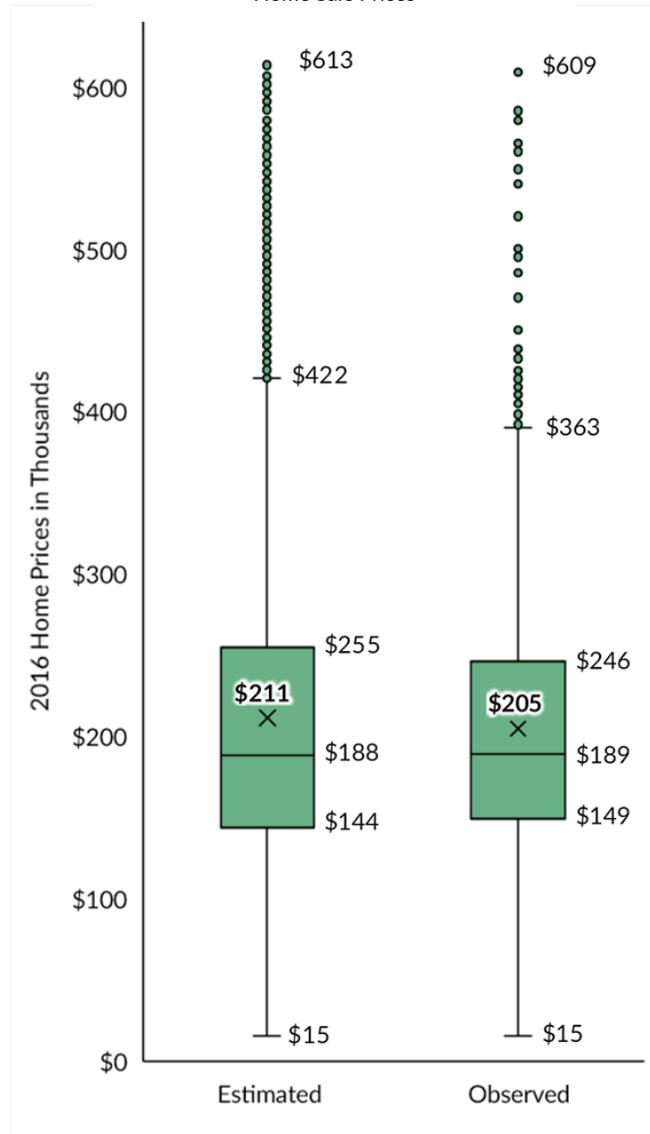
Based on the similarities of the two home price distributions, and the statistical analysis conducted by SDDOR, we determined that the Pennington County assessments served as an appropriate starting point for modeling market prices.

The next step was to compute estimates for the total annual cost of homeownership. We provide a brief discussion of this process below, but Appendix B contains a thorough explanation of this cost calculation and an example calculation to illustrate the process.

We began by estimating the market price of each property based upon its assessed value. Based upon the estimated market price, we calculated the financing costs of purchasing the property assuming a 30-year fixed rate mortgage with a 5% interest rate. We additionally assumed a 5% down payment at signing.

In addition to mortgage costs we included a fixed 1.45% annual property tax costs applied to the taxable value of the property and

Figure 20: Estimated Home Prices versus Observed Home Sale Prices

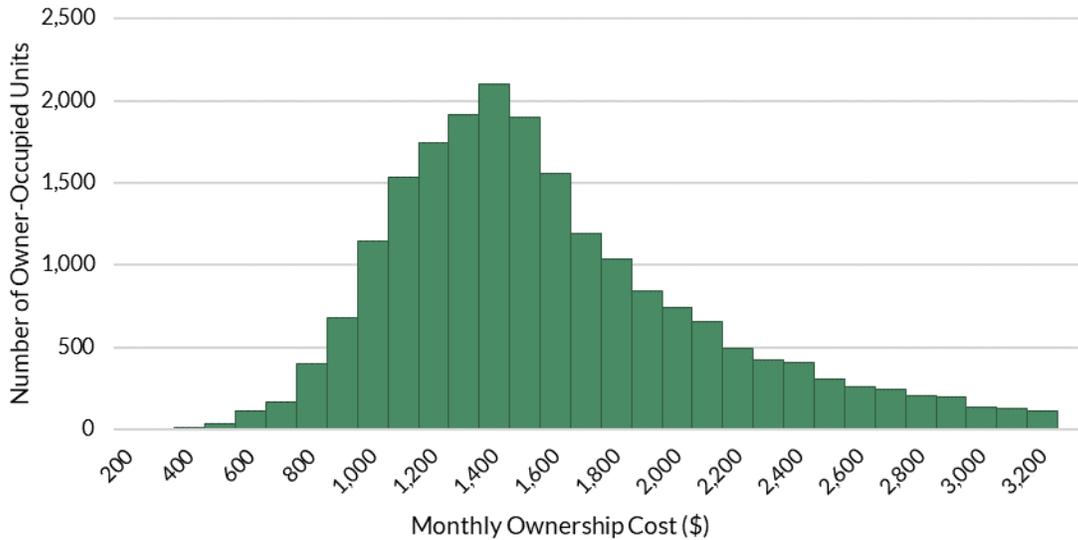


⁴¹ Figure 20 does not display estimated market values in excess of \$613,104 in order to more closely match with the highest observed selling price in 2016 of \$608,600.

an annual cost of homeowners insurance of \$1,500.⁴² Finally, we include an annual estimate for utilities and fuel equal to \$2,040.⁴³

Having estimated the annual and monthly costs of ownership for owner-occupied housing in the Rapid City market area, we determined the current supply of housing units that would be affordable at various income levels. Figure 21 displays a histogram showing the number of housing units with specified monthly ownership costs.⁴⁴ The lack of affordable housing units with ownership costs below \$800 or even \$1,000 per month is readily apparent from the histogram.

Figure 21: Histogram of Owner-Occupied Units by Monthly Ownership Cost



4.3.2: Rental Housing Costs

Pennington County does not track either the number of rental units or the cost of rental units in the County. The same is true for the city governments of Rapid City and Box Elder. In order to estimate the supply of affordable rental apartments, we used estimates of gross rental rates from the most recent ACS data published by the Census Bureau.⁴⁵

4.3.3: Proximity to Public Transportation

Transportation costs were not included in the housing or rental costs described above. Such costs can be considerable however, especially for low-income households. Rapid City is a car dependent geography with limited access to public transportation and a less walkable geography for its residents. According to recent U.S. Census and Longitudinal Employer-Household Dynamics data,

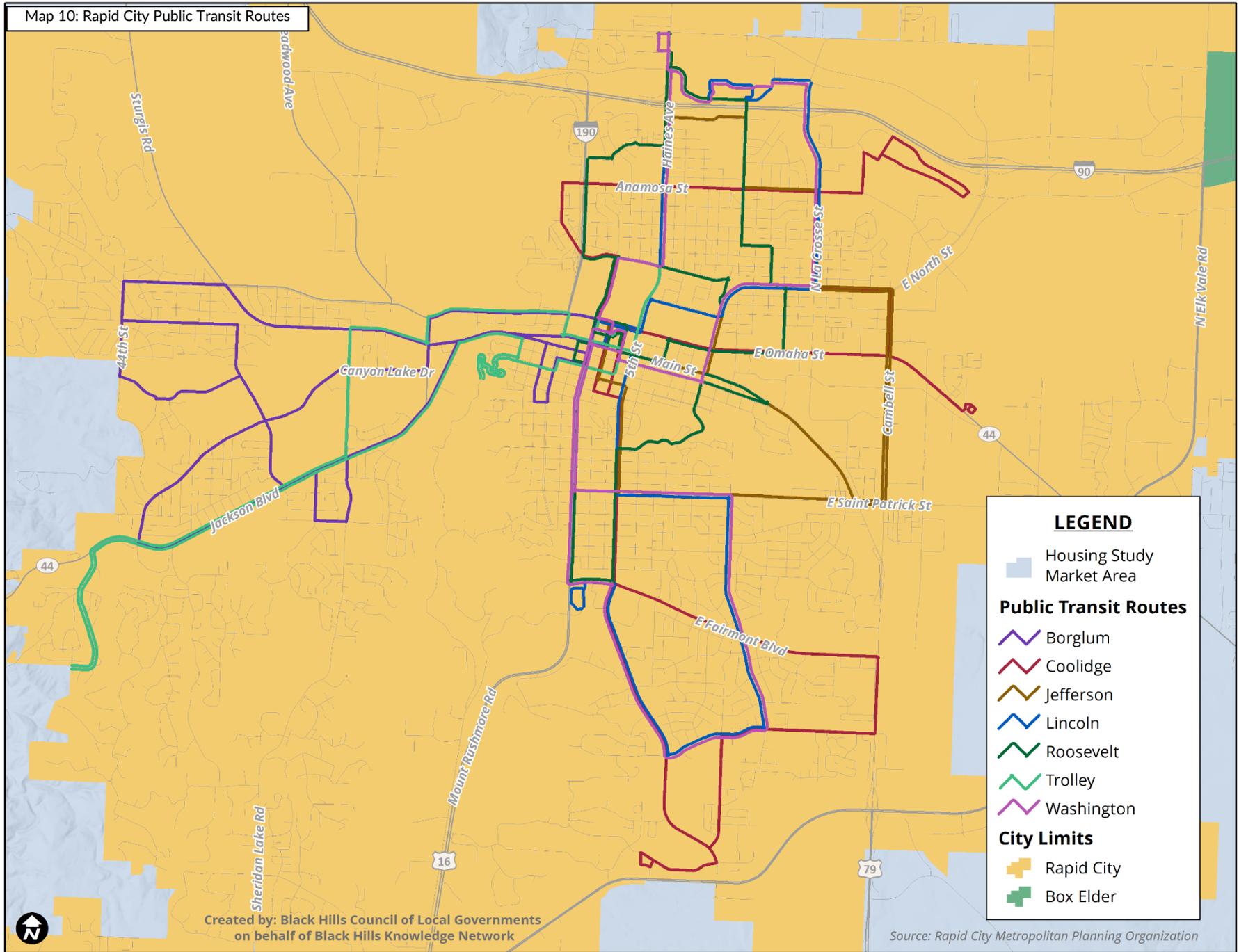
⁴²In South Dakota the taxable value is set at 85% of assessed value.

⁴³Annual utility and fuels cost estimates are based on fuel usage data provided by Montana Dakota Utilities Co. (approximately \$504 per year) and average monthly household electricity costs (approximately \$130 per month) found at https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf

⁴⁴ To improve readability, properties appraised at values greater than \$449,600 are not graphed.

⁴⁵ The Census Bureau defines gross rental rate to be the contractual rent plus utility and fuel costs. See the 2016 Subject Definitions for further details. <https://www.census.gov/programs-surveys/acs/technical-documentation/code-lists.html>.

Map 10: Rapid City Public Transit Routes



Created by: Black Hills Council of Local Governments
on behalf of Black Hills Knowledge Network

Source: Rapid City Metropolitan Planning Organization

Rapid City households drove an estimated 21,395 miles per year, resulting in average transportation expenditures of over \$12,000.⁴⁶

Rapid Transit is the only available public transportation option available to residents of either Rapid City or Box Elder. The current public transit routes limit housing options to certain areas of Rapid City for those who are unable to own, maintain, or operate a vehicle. As shown by Map 9 on the previous page, within Rapid City limits, the Northeast, Deadwood Avenue, Elk Vale Road, and US Highway 16 neighborhoods are currently underserved or without access to Rapid Transit. Neighborhoods outside city limits including Nemo Road, Spring Creek, Southeast Connector, Airport, Ellsworth, Piedmont Valley, and Black Hawk Neighborhoods are not served at all.

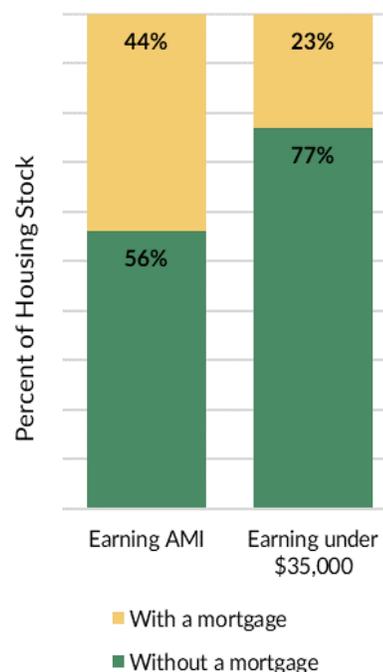
4.4: Supply of Affordable Owner-Occupied Units

Two strategies can be used for estimating the supply of affordable housing and thereafter any gaps that exist between supply and demand. First, the supply of housing can be estimated with respect to current homeowners and their contemporaneous housing costs. The second strategy is to estimate the supply of housing from the viewpoint of individuals or families that are looking to purchase a home. The two methods produce different estimates for the supply of low-cost housing and thus any affordability gaps that may exist.

The first scenario, because it uses costs reported by current homeowners, provides insights into how current homeowners perceive affordability. A current-cost analysis cannot provide an accurate picture of affordability, however, when a large number of householders have paid off their mortgages as mortgage-free homes have significantly lower ownership costs. For example, the median monthly ownership costs of mortgage-free homes in 2016 was \$427 versus \$1,146 for homes with a mortgage, according to 2016 Census estimates for the Rapid City market area.

Figure 22 shows that the mortgaged versus non-mortgaged distinction was significant during 2016. An estimated 56% of owner-occupied housing units that would have been affordable to a family that earned the AMI were actually mortgage free. Moreover, an estimated 77% of all homes that would have been affordable to families and households earning \$35,000 per year or less were actually mortgage free. As a result these homes with low reported ownership costs would not have been similarly affordable to a new home buyer once the home was remortgaged.

Figure 22: Mortgage Status of Owner-Occupied Stock by Annual Income



⁴⁶ The Center for Neighborhood Technology Housing and Transportation Affordability Index. 2017. <https://htaindex.cnt.org/fact-sheets/?lat=44.0805434&lng=-103.23101489999999&focus=place&gid=23831#fs>

In light of this finding, it was necessary to assess any market gaps from the perspective of a new homebuyer. Using this method it is possible to estimate gaps in the market based on current market prices, which eliminates the bias that results from having a large share of the affordable housing stock being mortgage free.

In order to provide such analysis, this report employs data from the Pennington County Department of Equalization. The Pennington County tax records are used to show how well the current housing stock meets the needs of new buyers by simulating current market prices for all owner-occupied properties in the market area. See Section 4.3.1 for details.

4.4.1: Affordable Housing at Area Median Income

This section estimates the number of owner-occupied housing units that would be affordable to a new homebuyer earning the area median income. As discussed in Section 3.5, the median household income in the Rapid City market area was \$48,784 in 2016. Based on the 30-percent affordability criteria, the maximum affordable housing costs for a family earning the AMI would be \$14,635 per year, or \$1,220 per month.

Table 12 reports the number of homes that were affordable to a household earning the AMI in 2016, according to the 30-percent rule. The results are broken down by number of bedrooms in the home. The table indicates that approximately 28.56% of owner-occupied housing types (6,193 out of 21,682 properties) in the Rapid City market area met the 30-percent affordability threshold when all ownership costs are taken into account.

Table 12: Number of Owner-Occupied Housing Units Affordable at the Market Area AMI ¹

Bedrooms	Total Units	Affordable Units	Percent Affordable
1	203	109	53.7%
2	4,650	1,858	40.0%
3	10,083	2,779	27.6%
4	4,566	508	11.1%
5 or more	1,200	116	9.7%
Mobile Home	980	823	84.0%
Total	21,682	6,193	28.56%

¹ Excludes 217 properties (1% of all records) with various property tax exemptions for which no market based ownership costs could be calculated.

4.4.2: Affordable Housing at Various Income Levels

Table 13, on the following page, shows the estimated supply of owner-occupied housing in 2016 based on the “new-owner” methodology described previously. Table 13 shows that much of the housing stock that would be affordable to households at the AMI, is concentrated in the upper end of the affordable range, with monthly ownership costs between \$900 and \$1,249. Additionally, Table 13 shows that the plurality of the housing stock, 44% of the total stock, would have been best targeted at the subset of the population earning between \$50,000 and \$74,999 annually.

Table 13: Supply of Owner-Occupied Housing Units at Various Income Levels and Price Points¹

Income Level	Affordable Monthly Price Range	Market Price Range	Supply of Affordable Units	Percent of Total Stock
Under \$20,000	under \$500	under \$33,700	37	0.2
\$20,000 - \$34,999	\$500 to \$899	\$33,700 to \$99,399	1,354	6.2
\$35,000 - \$49,999	\$900 to \$1,249	\$99,400 to \$156,699	5,353	24.7
\$50,000 - \$74,999	\$1,250 to \$1,899	\$156,700 to \$263,499	9,606	44.3
\$75,000 - \$99,999	\$1,900 to \$2,499	\$263,500 to \$361,899	3,020	13.9
\$100,000 - \$149,999	\$2,500 to \$3,499	\$361,900 to \$525,999	1,561	7.2
\$150,000 and above	\$3,500 and above	\$526,000 and above	751	3.5
Total			21,682	100.00

¹ Excludes 217 properties (1% of all records) with various property tax exemptions for which no market based ownership costs could be calculated.

Finally, using the Pennington County tax records to facilitate the analysis allows for geo-coding of all properties in the database. We exploit this fact in order to generate Map 11, on the following page. Map 10 color codes all properties in the market area based on their estimated total annual cost of ownership. This geographic display reveals important patterns of affordability.

For example, Table 13 shows that there were an estimated 1,354 properties that could have been affordably owned by households earning between \$20,000 and \$34,999 annually. Nearly all of these properties were located in: North Rapid, Box Elder, Rapid Valley, and Green Valley. The neighborhoods of North Rapid, Robbinsdale, South Robbinsdale, and West Rapid provided a great deal of housing options for middle-income households. Upper-income households tended to locate further west and, in many cases, far outside city limits.

4.5: Supply of Affordable Rental Units

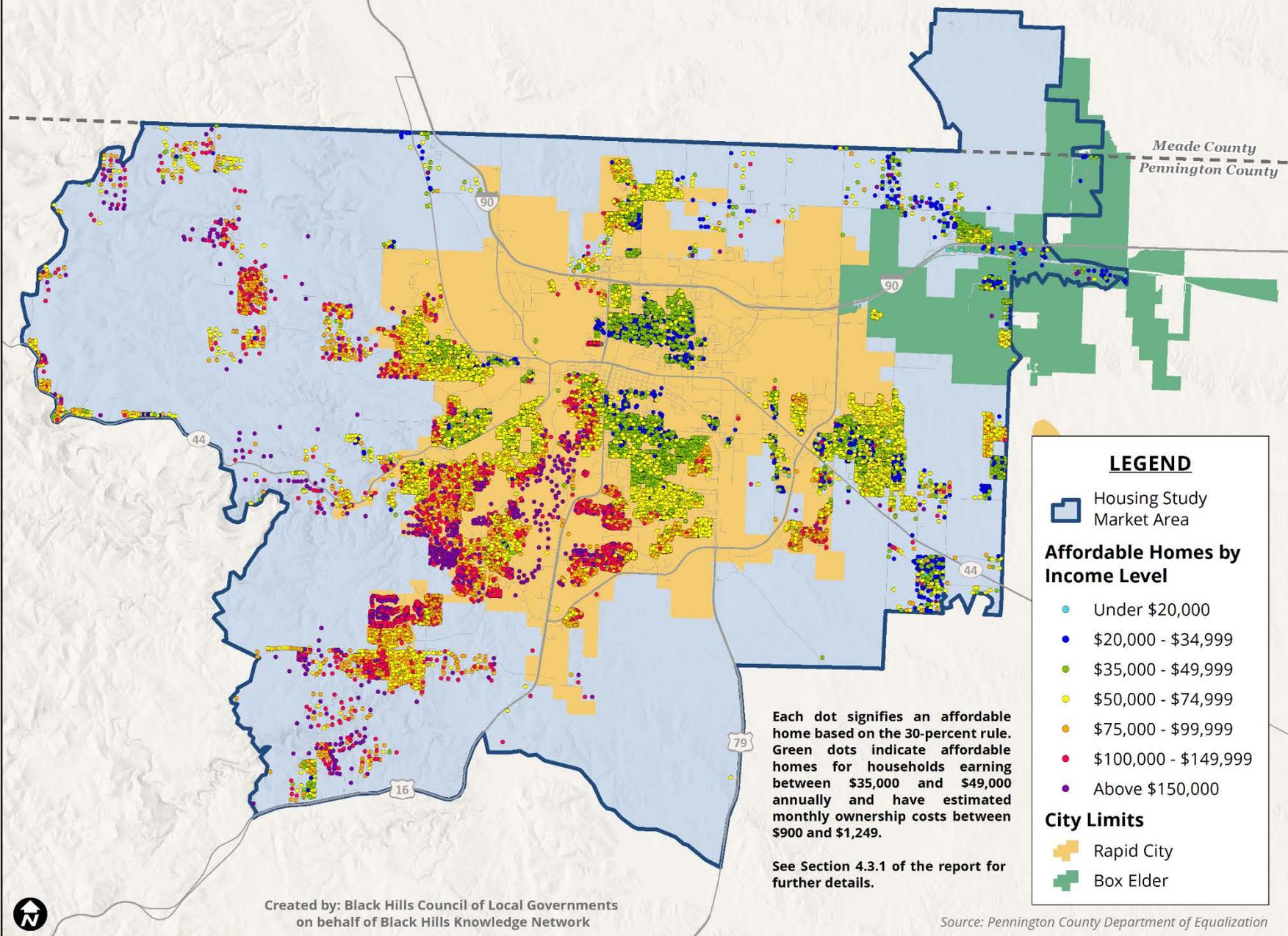
As discussed previously, the Pennington County property tax records provide highly detailed records regarding residential properties in the Rapid City and Box Elder communities. The detailed residential records allow for unique insights into the composition of the housing stock and its affordability. The property tax records do not contain the same level of detail regarding the number and type of commercial rental properties, however. This section therefore combines both local property tax data and Census data to describe the supply of rental properties.

4.5.1: Mix of Rental Property Types

Table 14 shows that the majority of all rental units in the market area were traditional apartments, accounting for an estimated 5,182 units, or 40% of all rental units in 2016.⁴⁷ Numerous new apartment complexes have been constructed in recent years, however, and Census estimates may not fully reflect recent constructions. In light of this consideration, the number of apartment units in the area may be as high as 5,873 according to estimates obtained from local developers.

⁴⁷ Apartments here are categorized as properties with three or more rental units per structure.

Map 11: Affordable Housing by Income Level



The second largest component of the rental stock was single-family residences which comprised 32% of the rental stock and represented an estimated 4,159 units. Mobile homes also represented a large portion of the rental stock in 2016, providing 1,941 units to the market, or 15% of the total rental stock. The remaining 7% of the rental stock was made up of town houses/condos and duplexes which accounted for 490 and 368 units respectively.

Table 14: Census Estimates of Rental Units by Property Type

Property Type	Number of Units	Percent of Total
Single Family Residence	4,159	32.3
Mobile Home	2,686	20.8
Apartment	5,182	40.2
Town House/Condo	490	3.8
Duplex	368	2.9
Total	12,885	100.00

4.5.2: Rental Rates and Unit Sizes

ACS estimates from the Census Bureau provide additional information regarding the mix of rental units and rental rates. Table 16 displays the estimated number of rental units in the Rapid City market area broken down by the number of bedrooms. The 2016 5-year ACS estimates report there were 12,885 rental units in the Rapid City market area. The plurality of rental units were 2-bedroom units.

Table 15: Distribution of Rental Units by Unit Size and Median Gross Rent¹

Bedrooms	Number of Units	Median Gross Monthly Rent (\$)
No Bedrooms	519 ^a	621
One	2,800	623
Two	5,969	806
Three	2,501	1,031
Four or more	1,118 ^a	1,302
Total	12,885	

¹ Census estimates do not report mobile homes separately and are included in the overall estimates.

^a The margin of error for this estimate exceeds the estimate itself.

Importantly, as indicated in Footnote A to Table 15, ACS estimates for the number of no bedroom, and four or more bedroom units are uncertain estimates. The margins of error for these estimates were larger than the estimates themselves.⁴⁸ Table 15 also reports the median monthly gross rent for each unit size. Gross rents include both contract rent and other costs including utilities and fuels.

⁴⁸ The 2016 5-Year ACS estimate for the number of no bedroom rental units was 519 and the margin of error was 594. The estimate for the number of four or more bedroom units was 1,118 and the margin of error was 1,171.

The data show that median gross rents ranged from a low of \$621 for no bedroom apartments (studio type rentals) to a high of \$1,302 for the largest four or more bedroom rentals.

A significant degree of heterogeneity in rental rates exists within any given unit size, but the ACS estimates indicate that the majority of rental units in the Rapid City market area appear to have been affordable to households earning the area median income of \$48,784, based on the monthly affordable housing cost threshold of \$1,219. Table 15 does not, however, provide detailed estimates for the number of affordable rental units. That discussion is left to the next section.

4.5.3: Number of Affordable Rental Units

Table 16, below, shows that the majority of rental units in the Rapid City market area were affordable at the area median income. ACS estimates indicate that 90.47% of all renting households in 2016 had gross rents at or below \$1,249 per month. Moreover, 54.51% of renting households (7,024 households) faced gross rents at or below \$899 per month.

Table 16: Supply of Affordable Rental Units at Various Income Levels and Price Points ¹

Income Level	Affordable Monthly Gross Rent	Supply of Affordable Units	Percent of Total Stock ²
Under \$20,000	under \$500	2,830	22.0
\$20,000 - \$34,999	\$500 to \$899	5,673	44.0
\$35,000 - \$49,999	\$900 to \$1,249	3,155	24.5
\$50,000 - \$74,999	\$1,250 to \$1,999	1,147	9.0
\$75,000 or more	\$2,000 or more	80 ^a	0.6
Total		12,885	100.00

¹ The Census Bureau defines Gross Rent to include contracted rent, utilities, and fuels.

² Totals may not sum to 100% due to rounding

^a The margin of error for this estimate exceeds the estimate itself.

5: MARKET GAPS IN AFFORDABLE HOUSING

The previous two sections of this analysis explored both the demand for and supply of housing in the Rapid City market area. This section takes the next step and provides estimates for current market shortfalls or surpluses across multiple income levels using the supply and demand estimates presented in the previous section.

5.1: Owner-Occupied Market Gaps

The estimates presented here reflect market gaps as they would appear to new homebuyers and do not reflect market gaps as they appear to current homeowners. This hypothetical scenario purposefully does not take into account situations where current homeowners have paid off their mortgages and thus have lower costs of housing. This method presents a more complete picture of the long-term and systematic gaps in affordable housing by avoiding the bias introduced when a large number of properties are owned mortgage free. See Section 4.4 for further details.

Table 17, on the following page, presents the primary estimates for market gaps with respect to affordable owner-occupied housing in the Rapid City market area. The left-hand column of the table shows income ranges representing possible levels of annual household income. The second column presents a range of monthly housing costs that would meet the 30% housing burden criteria used in this report to define the affordability threshold. Column three of Table 18 reports the range of estimated market prices for homes with the identified monthly ownership costs.

The fourth and fifth columns of Table 17 display estimates for housing supply and demand within the market area. The supply column presents housing stock estimates based on monthly ownership costs. The demand column presents 2016 estimates for the number of households with annual incomes within the specified income ranges.

Finally, the rightmost column of Table 17 provides market gap estimates for each income and price range. The gap estimate is calculated by subtracting the demand estimate from the supply estimate. A positive gap indicates that the number of units available within the identified price range exceeds the number of households with incomes in associated income range.⁴⁹

⁴⁹Table 17 reports a total estimated market gap of -2,239 (shown in the bottom right hand corner of Table 18). This total gap results from the combined use of property tax records and census estimates. The estimated total number of owner-occupied housing units from the property tax records (21,682) is within the estimated 90% confidence interval from the Census Bureau (23,921 ± 2,526). It is therefore likely that the Census overestimates the true number of owner-occupied housing units in the study area.

Table 17: Gaps in Affordable Owner-Occupied Housing Based on Estimated Market Values

Income Level	Affordable Monthly Price Range ¹	Market Price Range	Supply	Demand	Market Gaps
			Number of Properties	Number of Households	
Under \$20,000	under \$500	under \$33,700	37	1,936	-1,899
\$20,000 - \$34,999	\$500 to \$899	\$33,700 to \$99,399	1,354	2,945	-1,591
\$35,000 - \$49,999	\$900 to \$1,249	\$99,400 to \$156,699	5,353	3,674	1,679
\$50,000 - \$74,999	\$1,250 to \$1,899	\$156,700 to \$263,499	9,606	5,448	4,158
\$75,000 - \$99,999	\$1,900 to \$2,499	\$263,500 to \$361,899	3,020	4,082	-1,062
\$100,000 - \$149,999	\$2,500 to \$3,499	\$361,900 to \$525,999	1,561	3,465	-1,904
\$150,000 and above	\$3,500 and above	\$526,000 and above	751	2,371	-1,620
Total			21,682	23,921	-2,239^a

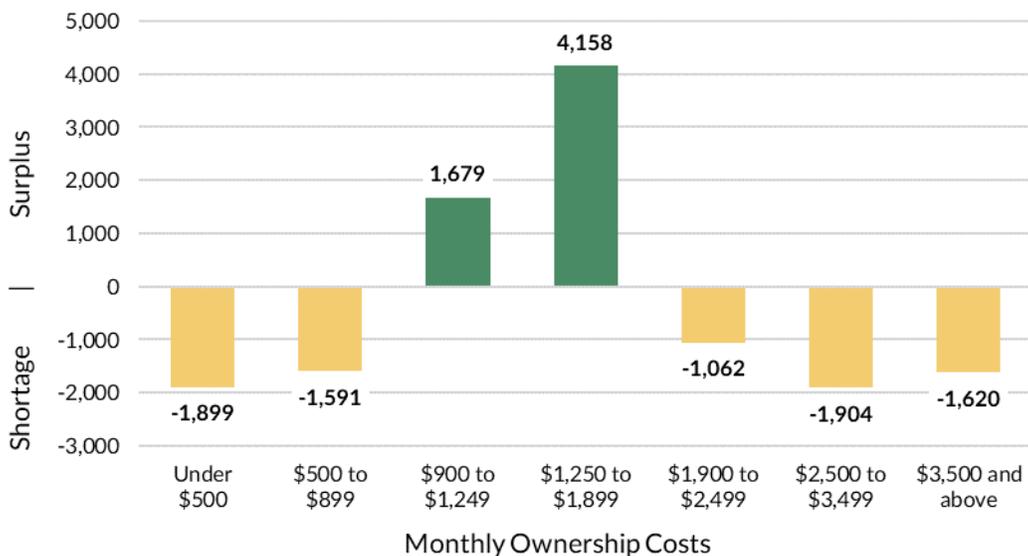
¹ Monthly price range reflects mortgage costs and the costs of utilities, insurance, and property taxes.

^a The total number of owner-occupied housing units does not balance with the estimated number of owner households because two different data sets are employed for this estimation.

Figure 23, below, presents a graphical depiction of findings provided by Table 17. The salient result depicted by both Table 17 and Figure 23 is the estimated market gap of 3,490 housing units costing \$899 or less per month. As discussed previously, this gap overstates the current gap in affordability by not accounting for households that who were no longer paying on a mortgage. An estimated 1,939 households earning under \$35,000 per year were currently paying mortgages in 2016, however. At the same time, the gap estimate does not account for the estimated 400 households currently living in hotels or the hundreds of homeless persons living within the market area. As a result, the real-world market gap was likely very near that reported by Table 17.

The overall impression of Table 17 and Figure 23 is that the housing stock was ill suited for the household incomes of the Rapid City and Box Elder populations. Figure 23 shows large shortages of affordable housing at the low-income range, large surpluses across the middle-income range, and large shortages at the upper-end of the income range.

Figure 23: Gaps in Affordable Owner-Occupied Housing



The proper interpretation of these results is that the housing stock exhibited too little price variation causing a misalignment of costs and incomes. Slightly more than 44% of the owner-occupied housing stock in the market area would have been priced between \$156,700 and \$263,499 (if it had entered the market in 2016) and would have had monthly ownership costs between \$1,250 and \$1,899. But only 23% of the market area households had annual incomes between \$50,000 and \$74,999, based on 2016 income estimates. This is shown in Figure 23 by the large surplus of 4,158 housing units costing between \$1,250 and \$1,899 per month.

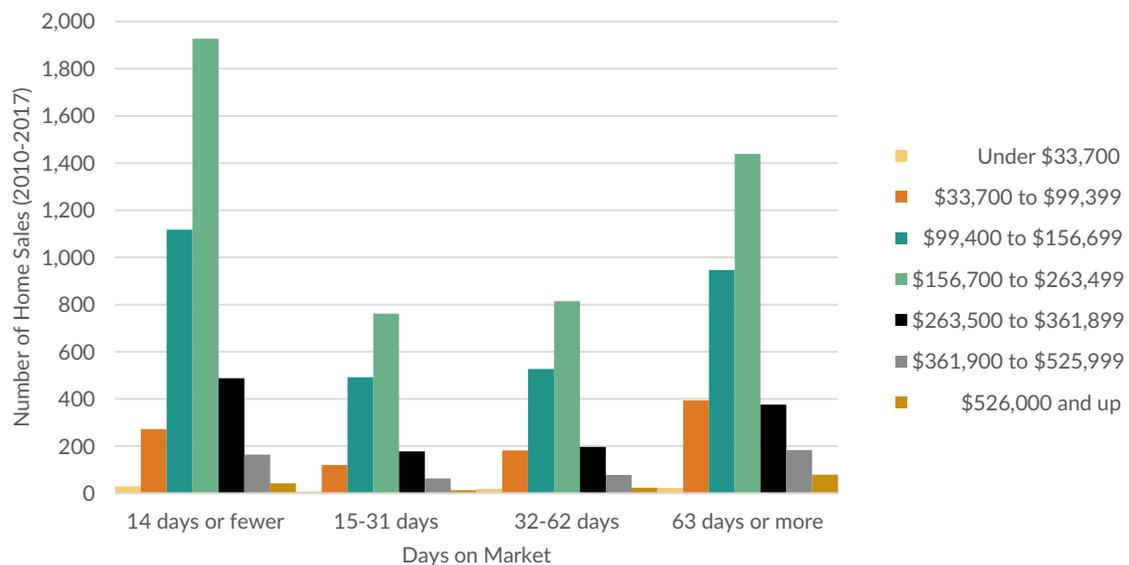
Importantly, the surplus identified above exists because there were more homes with selling prices between \$156,700 and \$263,499 than there were households with incomes between \$50,000 and \$74,999 in 2016. The estimated surplus of 4,158 units does not imply that homes priced between \$156,700 and \$263,499 did not sell readily in the market. In reality, the \$156,700 to \$263,499 price range was the most competitive market segment from 2010 to 2017.

Table 18: Median and Average Days on Market by Selling Price Range (2010 to 2017)

Days on Market	Under \$33,700	\$33,700 to \$99,399	\$99,400 to \$156,699	\$156,700 to \$263,499	\$263,500 to \$361,899	\$361,900 to \$525,999	\$526,000 and up
Median	34	49	28	23	29	36	61
Average	51	74	55	54	57	72	107
Total Sales	77	966	3,084	4,942	1,237	488	158

Table 18 shows the median and average days on market across the market price ranges defined in Table 17. Table 18 shows that 45% of all home sales occurring between 2010 and 2017 were for homes priced between \$156,700 and \$263,499. The \$156,700 to \$263,499 price bracket also had the lowest median days on market, 23 days, and the second lowest average days on market, 54 days, of

Figure 24: Distribution of Days-on-market by the Selling Price of Homes



all price segments. Looking beyond the \$156,700 to \$263,499 price range, Table 18 also shows homes priced from \$99,400 to \$361,899 sold far more quickly than those priced outside that range.

Further evidence of how competitive the Rapid City housing market was can be found in Figure 24, on the previous page. Figure 24 displays the distribution of days on market across the seven distinct price ranges. The data illustrate two key trends. First, more expensive homes tended to stay on the market longer than less expensive homes. A disproportionately large fraction of homes priced at \$361,900 or more remained on the market for 63 days or more, indicating weaker demand for such housing as wealthier households tended to purchase down-market.

Second, homes with selling prices between \$33,700 and \$99,399 also tended to stay on the market longer. Conversations with local realtors indicates that this trend was typically due to such homes being older and in need of costly deferred maintenance. Additionally, because of issues surrounding deferred maintenance, financing these lower-costs homes is more difficult, with banks requiring higher down payments than would be needed for homes in better condition. As a result, these units of naturally occurring affordable housing were often purchased as investment properties and converted into higher-cost rentals, thereby destroying potentially affordable owner-occupied housing.

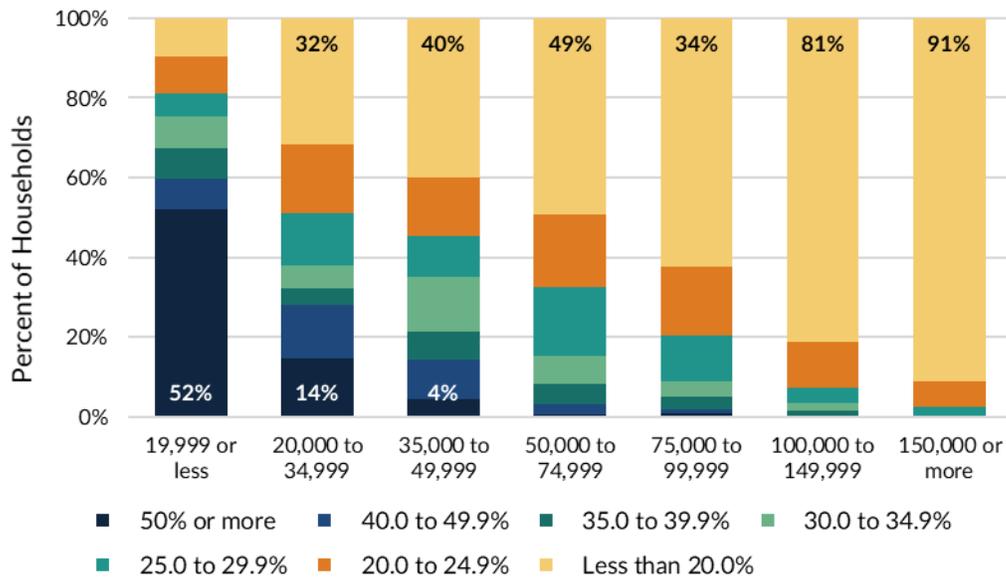
The reality of the housing market within the study area was thus one of intense competition for homes priced between \$99,400 and \$361,899. In this situation, market competition ensured that lower-income households paid far more than 30% of their incomes for housing. The problem was further compounded in the Rapid City market area by the large number of properties that were no longer mortgaged. These homes were affordable to their existing homeowners, but the homeowners faced a market where their incomes likely would not support the purchase of a newer home. When this “housing lock” occurs, the supply of homes made available for sale is further reduced, leading to even higher housing costs.

On the other end of the income distribution, higher-income households in 2016 were often paying far less than 30% of their incomes on housing. These homeowners, in contrast to lower-income homeowners, enjoyed low levels of housing burden. Figure 25, on the following page, demonstrates this market reality. The first bar in Figure 25 shows that 52% of all households earning \$19,999 or less in 2016 paid more than 50% of their annual income towards housing in 2016. Moreover, Census estimates indicate that 75% of households making less than \$20,000 annually paid more than 30% of their incomes to housing, and an estimated 56.5% of households with annual incomes below \$35,000 were cost burdened.

Figure 25 also shows a dramatic the shift in housing burden is as incomes rose. An estimated 35% of households earning between \$35,000 and \$49,999 were cost burdened in 2016, and approximately 15% of households with annual incomes between \$50,000 and \$74,999 were cost burdened in 2016. Census estimates report that no households with annual incomes in excess of \$150,000 per year were cost burdened in 2016, however, and 91% of these households paid less than 20% of their incomes towards housing.

The market gaps in housing for households with incomes at or below AMI, coupled with the high levels of housing burden for households of similar income, are indicative of a housing market that

Figure 25: Owner-Occupied Housing Burden by Income Level



is not meeting the needs of lower- and middle-income households. Importantly, both younger and older homeowners were equally effected. Approximately 25% of homeowners aged 35 and younger were cost burdened and 22% of homeowners aged 65 and older were cost burdened in 2016. Such high levels of housing burden can be especially problematic for older homeowners seeking to age in place given the high costs of home healthcare and associated services.

This shortfall becomes even more significant given the negative median income growth and rising population of the market area over the recent past. As new residents move to the area, and as first-time homebuyers enter the market, they will find it increasingly difficult to secure housing at the lower end of the market.

5.2: Rental Market Gaps

Section 5.1 of this report showed that affordable housing options were limited for households earning at or below AMI. Limited availability of affordable housing led to high levels of housing burden for both younger and older householders — i.e. householders aged 18 to 35 and those aged 65 and over. This section shows that the rental market exhibited many of these same characteristics, but perhaps even more so.

Table 19, on the following page, presents estimates for market gaps that existed in the rental market. The two leftmost columns displaying income levels and their associated affordable monthly housing costs. The third and fourth columns display estimates for the supply and demand of rental units in the defined cost range. Finally, the rightmost column of Table 19 displays the estimated market gap calculated by subtracting the estimated demand from the estimated supply.

Table 19: Gaps in Affordable Rental Housing Based on Reported Gross Rental Rates

Income Level	Affordable Monthly Price Range	Supply	Demand	Market Gaps
		Number of Units	Number of Households	
Under \$20,000	under \$500	2,830 ^a	4,289	-1,459
\$20,000 - \$34,999	\$500 to \$899	5,673	3,132	2,541
\$35,000 - \$49,999	\$900 to \$1,249	3,155	2,384	771
\$50,000 - \$74,999	\$1,250 to \$1,999	1,147	1,850	-703
\$75,000 or more	\$2,000 or more	80 ^b	1,230 ^b	-1,150
Total		12,885	12,885	0

^a Monthly price range reflects gross rents which include contract rent and utilities and fuel.

^a Includes an estimated 565 rentals for which no rent was paid.

^b The margin of error for this estimate exceeds the estimate itself.

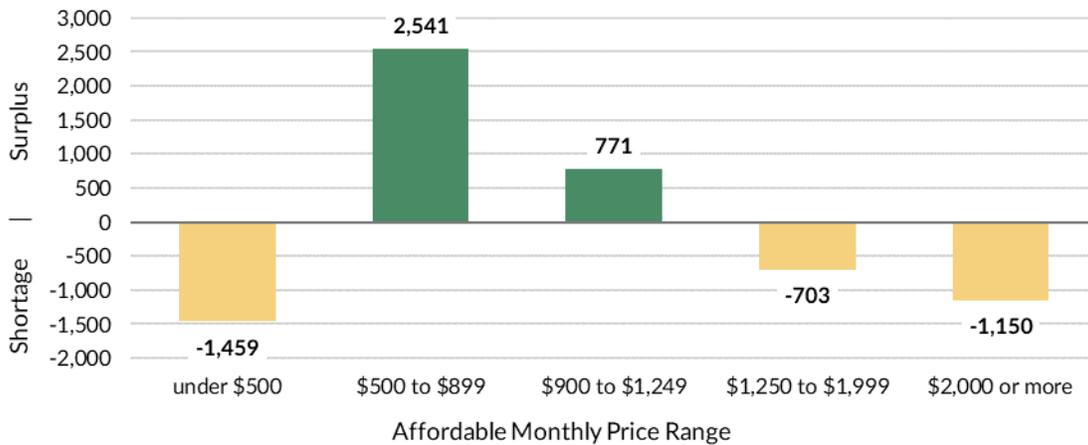
Table 19 shows the same pattern of shortages and surpluses as the owner-occupied market discussed above. The most salient shortage displayed in Table 19 is that of an estimated 1,459 units with gross rents of \$500 or less per month. It is likely that the true shortage of units with gross rents under \$500 per month is larger than reported in Table 19, however. First, households receiving Section 8 vouchers tend to report their total rental costs as lower than they are in reality due to the presence of the housing subsidy.⁵⁰ This could cause the supply of lower-cost rental units to be overestimated. Second, as discussed previously, there were roughly 400 households who resided in area motels that were also not reflected in demand estimates, and finally, the demand estimates do not account for additional housing units that would be demanded by homeless individuals. As a result, it is highly likely that the supply of low-cost rentals is overestimated and the demand for low cost rentals is simultaneously underestimated.

Table 19 also shows an estimated surplus of 3,312 rental units with gross rents between \$500 and \$1,249 per month. As with the owner-occupied market gap estimates, the surplus does not indicate that rental units sat vacant, rather that there existed a mismatch between the number of households with incomes appropriately aligned with market rental rates. The majority of the estimated surplus was in units with gross rents between \$500 and \$899 per month, primarily in units priced at \$700 or more per month.

Figure 26 provides a visual summary of the results presented by Table 20. The pattern of market gaps is highly similar to that displayed earlier by Figure 23. As in the owner-occupied market, the pattern of shortages and surplus is indicative of a situation where lower-income households experience high levels of housing burden while upper-income households have much lower levels of housing burden.

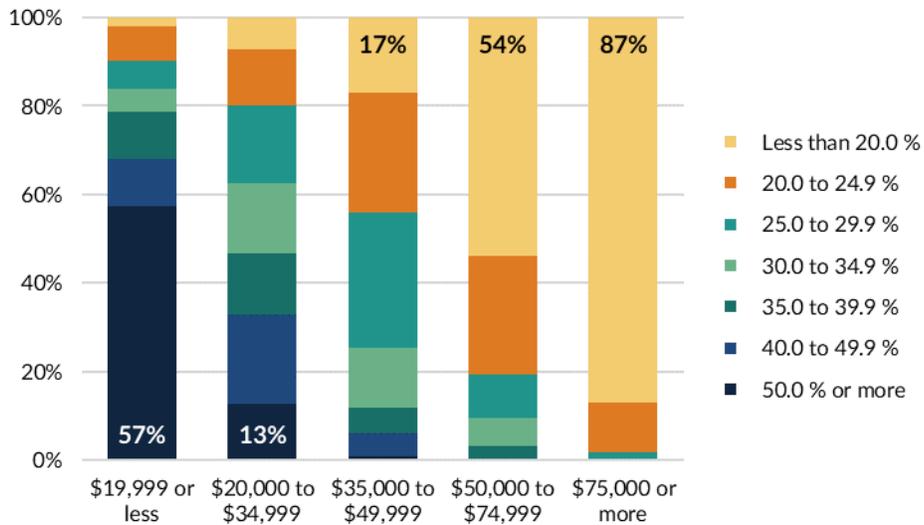
⁵⁰ Kingkade, W. Ward. "What Are Housing Assistance Support Recipients Reporting as Rent?," 2017. <https://www.census.gov/content/census/en/library/working-papers/2017/demo/SEHSD-WP2017-44.html>.

Figure 27: Gaps in Affordable Rental Housing



Finally, Census data also provide insights into the cost burden faced by renters in the market area. Figure 27 shows that the housing burden disparities in the rental market were even larger than those in the owner-occupied market. The data show that an estimated 57% of renting households earning less than \$20,000 per year paid 50% or more of their incomes towards housing in 2016. In contrast, an estimated 87% of households earning \$75,000 or more per year paid less than 20% of their incomes to housing.

Figure 26: Renter-Occupied Housing Burden by Income Level



After evaluating the owner-occupied and rental markets, the data clearly showed that affordable housing was in short supply for low-income households in the Rapid City market area. An estimated 4,417 households, or 12% of the area population, were forced to pay more than 50% of their incomes towards housing in 2016. If recent income and housing costs trends have continued over the intervening years, the number of highly cost-burdened households has surely risen.

6: TOOLS FOR DEVELOPING AFFORDABLE HOUSING

The objective of this report has been to provide stakeholders and policy makers with a common understanding of the need for affordable housing. The preceding analysis has demonstrated that housing costs and household incomes are not balanced across multiple price and income ranges. The resulting need for additional units of affordable owner and rental housing is therefore significant within the Rapid City market area. Bringing the market more into balance is not an easy task, however, and situation is likely to become more challenging in the future due to recent income and demographic trends.

The population of the market area is growing slowly but aging rapidly. It is beyond the scope of this report to investigate options in the market area for aging in place, but a 2017 AARP report, *Housing Policy Solutions to Support Aging with Options*, reports that 80% of adults 45 and older would prefer to remain in their homes and communities rather than have to move into retirement communities.⁵¹ Given the aging of the market area population, developing new housing options designed with accessibility and visitability in mind, as well as supporting home modifications to support the same will be key.^{52, 53}

The market area has also experienced a decline in median incomes over the recent past. Inflation adjusted median incomes in the market fell by 3.2% from 2010 to 2016. The decline in area median income was also accompanied an increase in the number of persons and families in poverty and the number of children eligible for reduced price school lunches. Changes in housing costs over the same period put additional pressure on the budgets of area households. Between 2010 and 2016, real median home prices rose by 11.5% and median gross rents rose by 8.1%.

In addition to divergent income and housing costs trends that made housing increasing unaffordable, the existing housing stock was found to have too few affordable units. The current shortfall in affordable owner-occupied housing for households earning less than 35,000 per year was estimated to be between 2,330 and 3,490 units in 2016. Similarly, the shortfall in affordable rental options for households earning less than 20,000 per year in 2016 could have been as high as 1,459 units.

The trends summarized above present unique challenges for the Rapid City market area. This section provides an overview of tools available to communities for developing new affordable housing options. The primary focus is on tools that support affordable housing for lower and middle-income households (i.e. households at or below 120% of AMI and especially at or below 60% of AMI).

⁵¹ Shannon Guzman, Janet Viveros, and Emily Salomon, "Insight on the Issues Housing Policy Solutions to Support Aging with Options" (Washington DC, 2017), <https://www.aarp.org/ppi/info-2017/housing-policy-solutions-to-support-aging-with-options.html>.

⁵² Visitability refers to the design philosophy that basic household features such as bathrooms and doorways should be accessible to persons with physical impairments. For further information see, Fuller, Katherine. "Assuring Accessible Housing: The Visitability Code of the Village of Bolingbrook." SPNA Review 4, no. 1 (2008): 5.

⁵³ Jon Pynoos with the USC Leonard Davis School of Gerontology defines home modification as, "adapting the environment to increase use, safety, security, health, social interaction, and independence." Pynoos, Jon. "Housing for Older Adults: A Personal Journey in Environmental Gerontology." Annual Review of Gerontology and Geriatrics 38, no. 1 (2018): 147-164. Page 157.

These methods and tools outlined below are broadly differentiated as (1) regulatory tools involving changes to local land use policies or (2) financial tools that try either increase funding for affordable housing or lower housing costs through non-regulatory methods. The above tools are discussed in sections 6.1 and 6.2 respectively. Section 6.3 concludes this report with a discussion of Impact Investing and how it can provide a uniquely powerful tool for both the development of new affordable housing units and, perhaps more importantly, the preservation of existing affordable housing.

6.1: Land-Use Policy Tools

A wide variety of land-use policy tools to encourage development of affordable housing is available to municipalities. In this section we focus on two of the more common policy tools, inclusionary zoning and incentive zoning ordinances.

6.1.1: Inclusionary Zoning

Municipalities can enact inclusionary zoning rules to ensure that new housing developments provide affordable housing. These planning ordinances require developers to reserve, or set aside, a fraction of new housing units specifically for households that meet predefined income requirements. Most inclusionary zoning programs set income requirements in the range of 60% to 100% of AMI, but thresholds as high as 120% of AMI are also seen. Typical inclusionary zoning policies set targets of ten to thirty percent for the number of reserved properties within a new development. Cities will often allow developers some flexibility in meeting inclusionary requirements by allowing properties to be built in off-site locations or to pay a fee in place of meeting the inclusionary requirements.

The 2014 Rapid City Master Plan contained policy recommendations to enact inclusionary zoning rules that could help increase the availability of affordable housing. Changes to local zoning rules being pursued by Rapid City along these lines include allowing accessory dwellings and reducing minimum lots sizes. These changes would more typically be known as non-exclusionary zoning rules rather than inclusionary zoning rules, but such rules can still support affordable housing through increased density and may additionally allow for housing options more suited to aging in place.

There are both benefits and complications that must be considered when exploring inclusionary zoning policies. The benefits of inclusionary zoning are greatest in market areas where development is skewed towards more expensive homes. In areas like Rapid City with higher-than-average land and construction costs, the costs would therefore mostly be borne by the more affluent. The result of such a policy would be progressive in nature as households with higher incomes that could afford new constructions would pay the costs needed to supply more affordable units.

One potential downside to inclusionary zoning in the Rapid City market area is that new housing developments are currently concentrated in southern end of Rapid City. Services such as schools and public transit are not widely available in these areas. As a result, lower income households that gain affordable housing in newer developments might face significantly higher costs in other area of their lives.

6.1.2: Incentive Zoning Ordinances

Incentive zoning ordinances, or simply incentive zoning, is similar to inclusionary zoning in many ways, but differs in one key aspect. Inclusionary zoning requires that developers set aside a portion of housing units, while incentive zoning does not. In contrast, incentive zoning is more flexible and enables cities to use affordable housing set-asides as a bargaining chip. Cities can impose affordable housing requirements when developers request changes in land use, parking requirements, and changes in height or density restrictions.

Cities can also leverage the increased flexibility of incentive zoning ordinances as part of a larger affordability strategy. While inclusionary housing policies often only apply to new developments, incentive based zoning programs can be written more broadly to apply to both residential and commercial developments. Additionally, cities can provide numerous options for meeting affordability set asides triggered by the incentive zoning ordinances. For example, local governments could require the building of affordable housing, a permanent set aside of existing properties for affordable housing, or even cash payments in the form of a buyout. In the last case, cash payments could be used to fund other affordable housing efforts.

The benefits of incentive zoning lie in the flexibility of the instrument. Policy makers can write the ordinances in a manner that a broad variety of projects trigger set aside rules, and there is again flexibility in the manner in which developers can meet the affordability requirement. However, there are potential drawbacks to incentive ordinances as well.

First, the value of the incentives (e.g. zoning variances, reduced parking requirements, additional lot coverage, or density bonuses) can change over time. More importantly, the market value of the incentives will depend on the type and scope of proposed project. If incentives are not strong enough, then developers will not respond and the policy will not lead to additional affordable housing. A related concern is that, depending on market conditions, the size of necessary incentives may be politically unfeasible.

Second, the approval process for incentive ordinances has the potential to devalue the incentives themselves. If approval processes are discretionary, and each project requires approval by an individual or committee, then the potential for political gaming arises. Additionally, the prospect of lengthy and costly approval processes reduces the value of potential incentives and reduces the ability of incentive zoning to foster affordable housing. The better strategy is to have incentives built into the code so that builders, developers, and planners operate from a clearly understood rulebook. In such a scenario, the costs and benefits are more clearly defined prior to the start of a project. Greater certainty reduces the risks and costs of development.

6.2: Financial Tools

In this section we discuss several financial policy tools available to cities for increasing the supply of affordable housing. The following programs or policies that may prove useful in the context of the Rapid City market area: (1) housing authorities, (2) land trusts, (3) tax abatements, (4) tax increment financing, and (5) cost reduction measures.

6.2.1: Housing Authorities

Housing authorities are often quasi-governmental organizations that have the ability to own, manage, and even develop affordable housing on behalf of the public. The Pennington County Housing and Redevelopment Commission (PCHRC) serves as a Housing Authority for the Rapid City market area. Importantly, PCHRC does not receive tax funding from either Pennington County or the cities of Rapid City or Box Elder. PCHRC's operations are funded through revenues derived from tenants or through numerous state and federal grants from organizations like the U.S. Department of Housing and Urban Development (HUD) and the United States Department of Agriculture (USDA).

PHRC currently owns and manages 500 public housing units in the Rapid City area. These housing units are of several types including 110 single-family homes, 258 apartments in high-rise buildings, 95 townhouses or low-rise apartments, and another 37 units specifically reserved for developmentally disabled persons in residential group homes.

As the local housing authority, PCHRC provides many other housing options for lower income households and families. PCHRC manages several other affordable housing developments through the USDA Rural Development program, the HOME program, and former Low-Income Tax Credit properties.^{54, 55} PCHRC administers Section 8 housing vouchers for the Rapid City market area.

To be eligible for Public Housing, a family's total annual gross income must not exceed 80% of AMI, and meet some citizenship requirements as defined by PCHRC. Additionally, PCHRC is required to allocate a minimum of 40% of available Public Housing units to families or individuals with annual incomes below 30% of AMI. Section 8 eligibility is also dependent on annual income as percent of AMI; income thresholds are set by HUD and are defined for various family sizes.

Current issues facing PCHRC relate to long waitlists for access to Public Housing and Section 8 vouchers. Over 2,000 individuals are currently on the Section 8 voucher waitlist. More problematic however is that as few as 20% of persons on the Section 8 wait list ever receive a housing voucher once their application reaches the front of the queue. PCHRC records indicate that 52% of applicants never respond when notified of eligibility, 11% of applications are ultimately denied when they come up for review, and 17% of vouchers expire before the voucher recipient can find qualifying housing within the 60-day window after being approved.⁵⁶

PCHRC may be able to turn the issues it faces concerning Section 8 waitlists and delays to its advantage. Allison Allbee, Rebecca Johnson, and Jeffrey Lubell advocated in a Kresge Foundation encourage housing authorities to promote transparency around affordable housing by collecting

⁵⁴ Rural Development properties receive subsidies and mortgage interest credits provided by the USDA Rural Development and the South Dakota Housing Development Authority to provide income based rents.

<https://www.rd.usda.gov/about-rd/agencies/rural-housing-service>

⁵⁵ HOME projects received favorable financing rates which allow rents to be set below market levels.

<https://www.hudexchange.info/programs/home/>.

⁵⁶ The 60-day voucher execution window can and is often extended by an additional 60 days to allow a voucher holder more time to find approved housing.

and disseminating information about properties and projects within their communities that support affordable housing.⁵⁷ These resources would report on, “types of subsidies and rent restrictions that apply to each development and find out when those subsidies are going to expire.” Making this information easily accessible could help to build support in the community for furthering affordable housing goals.

PCHRC could also take advantage of the federal Low-Income Housing Tax Credit (LIHTC) program alongside efforts to expand project-based Section 8 housing. LIHTC monies can be used to refurbish and renovate existing properties, and by design, LIHTC housing units are re-served for households earning below 60% of AMI. The LIHTC program could therefore be used effectively to modernize and update numerous properties in the Down-town/Skyline Drive and North Rapid neighborhoods. These neighborhoods were largely built out in the 1940’s and 1950’s following the construction of Ellsworth Air Force Base, and many of the homes do not meet modern construction standards. Combining LIHTC funds with project-based Section 8 housing could support the development of more permanent affordable housing. It could also improve the quality of housing available to the lowest income families in the region.

6.2.2: Tax Abatements

Tax abatements or exemptions are long standing policy tools used by municipalities to support the creation of affordable housing. In many cases property or real estate taxes comprise a significant portion of development and/or ownership costs. Tax abatements can reduce the cost of housing by exempting all or a portion of property and/or real estate taxes on affordable housing.

Tax abatements are often given with significant conditions attached. The term of the abatement can be either for a specified length of time, or for the life of the structure. Tax abatements for affordable housing often require that units be rented or sold to households meeting certain income requirements. It is also possible that some fraction of units be reserved for affordable housing and others be allows to either rent or sell at market rates.

6.2.3: Tax Increment Financing

Tax Increment Financing (TIF) is another option for lowering the development cost of housing. These cost savings can then be passed on to future renters and/or homebuyers. In February of 2018, the South Dakota State Legislature specifically in relation to affordable housing. At the time of this writing, the legislation has not yet signed into law by the Governor, but both the House and Senate have approved the legislative language.

The power of a TIF lies in its ability to be leveraged and used in conjunction with other affordable housing tools.

⁵⁷ Allbee, Allison, Rebecca Johnson, and Jeffrey Lubell. “Preserving, Protecting and Expanding Affordable Housing,” 2015. <https://kresge.org/library/preserving-protecting-and-expanding-affordable-housing-policy-toolkit-public-health>.

Going forward South Dakota law will allow TIFs specifically targeted at promoting affordable housing. The proposed rules state that a TIF may be used to promote affordable housing development under the following conditions:

(1) The original selling price of any house in the district will be at or below the first-time homebuyer purchase price limit being used by the South Dakota Housing Development Authority as of the date the house is sold; or

*(2) The monthly rental rate of all multifamily housing units in the district will be at or below the calculated rent for the state's eighty percent area median income, being used by the South Dakota Housing Development Authority, as of the date the district is created, for a minimum of five years following the date of first occupancy.*⁵⁸

As of March 2018, the South Dakota Housing Development Authority has set the borrowing limit for a first-time homebuyer at \$250,200. Homes priced at this upper threshold would be considered affordable to households earning approximately \$70,000 per year, or roughly 143% of AMI (\$47,784 in 2016).

Unlike the other policy tools discussed here, TIFs cannot provide long-term affordable housing on their own. In the case of single-family housing, a TIF may be used to lower initial development costs, but the costs savings are wholly captured by the initial homebuyer. Similarly, TIF requirements for affordable multi-family housing could expire in as little as five years.

In order for TIFs to encourage permanent affordable housing they should be used alongside other incentive zoning tools or in combination with other tools such as inclusionary zoning practices. For example, a TIF application could require that a certain number of lots be put into a CLT to provide for permanent affordability. The power of a TIF lies in its ability to be leveraged and used in conjunction with other affordable housing tools.

6.2.4: Land Trusts

Housing Trusts Funds (HTFs) and Community Land Trusts are potentially powerful tools for promoting affordable housing. HTFs, similarly to housing authorities, can own and manage affordable housing developments. Unlike housing authorities, however, HTFs often collect and then distribute public funds raised through various revenue mechanisms such as sales or excise taxes because they typically exist as part of state, county, or city governments.

Community Land Trusts (CLTs), in contrast to HLTs, are not governmental entities. CLTs are non-profit organizations that support affordable housing by purchasing land and holding it in trust. CLTs leverage the land held in trust to generate permanently affordable housing reserved for qualified lower income families. Dakota Land Trust is an example of a community land trust operating in several communities throughout the Black Hills.

⁵⁸ South Dakota, Legislature, "An Act to Revise Certain Provisions Regarding Tax Increment Financing Districts." SD Legislative Research Council, 2018. Ninety-third session legislative assembly.

Land held in trust is transferred under long-term leases for development and then to homeowners, typically for a nominal fee. When the home is resold, the ownership of the land remains with the CLT. Because the value of the land is removed from the sale price, the home can remain affordable for future households and families. Sale prices are often set in accordance with a predefined resale formula that allows the homeowner to realize some return on her investment, but also keeps the home affordable for low-income buyers.

There are several benefits to CLTs relative to other tools discussed above. First, CLTs create permanently affordable housing while still allowing for home-ownership. Public housing through housing authorities may allow for permanently affordable rental housing, but home ownership is not possible under the housing authority model. Second, CLTs have the ability to pursue external funding through HUD programs including CDBG and HOME. CLTs can also be eligible for South Dakota Housing Opportunity Fund (HOF) grants. According to the SD Housing Authority, “HOF funds may be used for new construction or the purchase and rehabilitation of rental or homeownership housing, housing preservation, including home repair grants and grants to make homes more accessible to individual with disabilities, homelessness prevention activities [...]”⁵⁹

Another potential benefit to the CLT model is its flexibility. The typical CLT might purchase undeveloped land or purchase land currently under new development. CLTs also have the ability to purchase land with existing housing structures on them and then lease the land back to the current landowner. This model would enable a CLT to create permanently affordable housing in existing neighborhoods that already have access to robust public services and existing schools. Additionally, purchase of land with existing structures can be tied to neighborhood revitalization efforts. Land purchase agreements with existing homeowners could require that a portion of monies derived from the sale be devoted to renovations and improvements. Such efforts could be specifically targeted towards enabling aging in place for elderly homeowners.

- **Dakota Land Trust (DLT)** – Established in 2007 by NeighborWorks Dakota Home Resources (NWDHR), Dakota Land Trust is a 501(c)(3) nonprofit community-based organization established to create and preserve a permanent supply of affordable homes for households otherwise priced out of the market in the communities of Western South Dakota. Dakota Land Trust is the only currently operating community land trust in South Dakota, and operates in Pennington, Meade, Lawrence, and Fall River Counties. Dakota Land Trust often partners with other non-profits in the region, especially NeighborWorks Dakota Home Resources, to support affordable housing through education, new construction, and rehab/repair.

DLT has used the land trust model to support affordable housing for 26 families on DLT leased land in Belle Fourche, Box Elder, Sturgis, Spearfish, and Rapid City. One example

⁵⁹ South Dakota Housing Development Authority, housing opportunity fund. <http://www.sdhda.org/housing-development/housing-opportunity-fund.html>

of success using the CLT model comes from Spearfish. In 2010, The City used Tax Increment Financing to fund the purchase 10 lots within a new development known as the McGuigan Ranch Subdivision, which the City reserved for DLT. Within three years, homes were built on all 10 DLT lots. The City of Spearfish has since been paid in full and the project has produced ten units of permanently affordable housing.

6.2.5: Cost Reduction Measures

Cost reduction strategies are policy tools that are often directly under the control of local administrations. These tools and policies relate to planning, permitting, and approval of building projects. These policy decisions directly affect development costs at all stages of the development process. This report does not make any recommendations regarding current fee levels and their current impacts on affordable housing development. Such an analysis is possible and a natural next step, but is beyond the scope of this work. This section merely provides an overview of common best practices with regard to cost reduction strategies.

In most development projects, the most significant components of the project's cost are for land and hard costs. City fees and taxes contribute to overall project cost but the economies of scale involved with larger projects allow permitting costs to be effectively absorbed. In situations where the end project is affordable housing, there is less margin for permitting fees and taxes to be absorbed. In many cases city codes implicitly incentivize the production of larger and less affordable housing units. The best remedy is then to reduce the marginal cost of producing affordable units relative to other housing types.

One method of reducing the marginal cost of producing affordable units is to pursue a tiered fee structure for permit and plan checking. A threshold can be set such that units under a specified square footage could incur a lower fee. At the extreme, certain fees could be waived entirely for development of affordable housing. It would be necessary to perform a legal nexus study to establish the relationship between tiered or waived fees and the supply of affordable housing before implementing such a policy.

Code harmonization is another avenue that could disproportionately affect the costs of developing affordable housing. The Rapid City market area encompasses three different municipalities — Rapid City, Box Elder, and Rapid Valley — with differing building codes. To the extent that it is possible, harmonizing codes and requirements would reduce both the hard and soft costs of development. While the absolute cost savings might be small, the marginal cost reductions would represent proportionally larger costs savings in affordable housing construction.

6.3: Impact Investing

Sections 6.1 and 6.2 discussed various tools that can be used to increase the stock of affordable housing within communities. Producing more affordable housing is only part of an effective strategy, however. The preservation of currently affordable housing units should also be a priority because the preservation of affordable housing can, similarly to land trusts, promote permanently affordable housing.

Impact investing is a vehicle for non-profit and for-profit companies to drive social change in a way that generates positive financial returns for investors. Impact investing is a tool that can not only be used to finance the construction of new affordable units, but can also be used to finance the purchase and preservation of existing units.

Impact investing has gained traction in the affordable housing world in recent years because cash flows are naturally generated through rental payments. One of the largest and longest operating entities in this field is the Washington DC- based Housing Partnership Equity Trust (HPET). In an interview with REIT Magazine, Cynthia Parker, Chair of the HPET Board, describes the strength of the impact investing model in the affordable housing space by saying,

From a market standpoint, there is basically an infinite demand right now for affordable housing[.] If you have properties that are located in good markets and good operators operating them, they are going to be full and they are going to generate a very predictable cash flow.⁶⁰

The impact investing model can be particularly effective in the current context because non-profits and philanthropy can be used to provide seed funds and initial capital that traditional banks and financial institutions might not due to either risk or regulatory considerations. This initial capital can be the crucial component needed to finance the initial steps of pre-development and/or site acquisition.

Several examples of effective impact investing in affordable housing can be found in the Twin Cities region of Minnesota. The Greater Minnesota Housing Fund (GMHF), based in Saint Paul, operates a \$55 million revolving loan fund to support the development and preservation of affordable housing. The largest investment fund managed by GMHF is its CDFI Development Loan Fund, which funds both new affordable housing constructions and rehabilitation of existing affordable housing. The CDFI Development Fund attracts both private and institutional investors, especially from charitable foundations in the form of program related investments. GMHF also manages a NOAH Impact Fund whose investments promote the preservation of Naturally Occurring Affordable Housing (NOAH).^{61, 62} In 2017 GMHF partnered with local affordable housing provider Aeon and the national Enterprise Community Investment organization to raise \$12.65 million in equity to

⁶⁰ Borchersen-Keto, Sarah. "Minding the Gap in Affordable Housing." Nareit. November 14, 2016. Accessed May 25, 2018. <https://www.reit.com/news/reit-magazine/november-december-2016/minding-gap-affordable-housing>.

⁶¹ For further details about the investment programs of the Greater Minnesota Housing Fund see <https://gmhf.com/invest/investment-opportunities/>.

⁶² The definition of naturally occurring affordable housing is not fixed, but GMHF defines NOAH units as, "[...] typically Class B and Class C rental buildings or complexes with 50+ units, built between 1940 and 1990. Rents are lower-ranging, generally between \$550 and \$1,200 per month, affordable to low- and moderate-income households". "NOAH Impact Fund." Accessed May 29, 2018. <https://gmhf.com/finance/noah-impact-fund/>.

purchase and preserve 768 affordable rental apartments in the Twin Cities area for approximately \$77 million.⁶³

Another example of impact investing success can be found in CommonBond Communities. CommonBond Communities owns and manages over 6,000 affordable rental apartments in 56 cities throughout Minnesota, Wisconsin, and Iowa making CommonBond the largest provider of affordable housing in the Upper Midwest. CommonBond develops new affordable housing, but a large part of its affordable housing portfolio has come from purchasing and preserving NOAH units.

CommonBond distinguishes itself not only by the size of its impact in affordable housing, but also by the scope of tenant services they provide. According to its 2016 annual report, 43% of CommonBond renters were older adults and another 10% were adults with special needs. In this way, CommonBond demonstrates that affordable housing can be combined with additional services to provide both affordable and accessible housing.

A partial example of impact investing can also be found in the Rapid City community. The Owens Apartments contains 23 units of low-cost affordable housing. These apartments, located in downtown Rapid City, are privately owned, but the owners work with Pennington County Behavior Management Systems, Cornerstone Housing, and the John T. Vucurevich Foundation to provide low-cost transitional housing for individuals with a history of substance abuse, mental health issues, or have recently been released from prison.

Behavior Management Systems manages the Owens Apartments and provides wrap-around case management services to assist tenants as they work to find more permanent housing. Tenants' rents are capped at 30% of their incomes with the balance being made up for with grants from the John T. Vucurevich Foundation, who has contributed up to \$1.1 million since 2012 as part of its New Start Housing Collaborative. In a true impact investment model, the rental assistance would be derived from tax credits and/or Section 8 vouchers rather than philanthropic donations. Nevertheless, the experience and knowledge gained through the Owens Apartment model could be built upon to create a fully realized impact investment project that could support affordable housing in the community.

⁶³ Buchta, Jim. "Real Estate Notebook: Aeon Makes Biggest Deal yet to Preserve Lower-Cost Apartments." Star Tribune, November 9, 2017. <http://www.startribune.com/real-estate-notebook-aeon-makes-biggest-deal-yet-to-preserve-lower-cost-apartments/456471233/>.

APPENDIX A – RAPID CITY MSA EMPLOYMENT BY MAJOR OCCUPATION GROUP

Table A-1: Employment by Major Occupations Group Ranked by 2016 Employment Share

Major Occupation	2016 Employment Share (%)	Employment		
		2010	2016	Change
Office and Administrative Support	15.9	10,000	10,360	360
Sales and Related	12.6	7,720	8,210	490
Food Preparation and Serving Related	11.4	6,260	7,430	1,170
Healthcare Practitioners and Technical	7.8	4,210	5,090	880
Construction and Extraction	6.6	3,890	4,330	440
Transportation and Material Moving	5.4	3,610	3,510	-100
Education, Training, and Library	5.1	3,060	3,340	280
Building and Grounds Cleaning and Maintenance	4.8	2,560	3,120	560
Installation, Maintenance, and Repair	4.4	2,270	2,900	630
Production	3.9	2,170	2,560	390
Business and Financial Operations	3.9	2,170	2,550	380
Personal Care and Service	3.3	2,000	2,140	140
Management	2.7	1,650	1,750	100
Healthcare Support	2.4	1,480	1,600	120
Protective Service	2.0	1,170	1,290	120
Community and Social Service	1.9	970	1,220	250
Arts, Design, Entertainment, Sports, and Media	1.5	760	950	190
Computer and Mathematical	1.4	660	940	280
Architecture and Engineering	1.3	760	830	70
Life, Physical, and Social Science	1.2	590	760	170
Legal	0.5	280	340	60
Farming, Fishing, and Forestry	0.1	150	90	-60
All Occupations	100.0	58,390	65,320	6,930

APPENDIX B – AFFORDABILITY CALCULATION

In order to estimate the number of affordable owner-occupied housing units it is necessary to first calculate the cost of ownership. The core component of ownership cost is the mortgage payment but other costs must also be accounted for (e.g. property taxes, insurance, and utilities). Below we present an example calculation for how we arrive at the cost of ownership estimate.

Step One – Assessed Value to Market Value

The South Dakota Department of Revenue (SDDOR) regularly performs a statistical analysis to evaluate the accuracy of counties in their appraisal of home values for the purposes of property taxes. Based on the most recent statistical report available, covering the two-year period, November 2012 to October 2014, the median sales ratios for Rapid City and Box Elder were 94.0% and 94.3% respectively.⁶⁴ In other words, the median assessed value was 94.0% or 94.3% of the median sale price in Rapid City and Box Elder respectively.

Because assessed property values underestimate the market value of homes by 6%, on average, we apply a correction factor of 6% to the assessed value.

$$\frac{\text{Assessed Value}}{\$150,000} \times \frac{\text{Correction Factor}}{1.06} = \frac{\text{Estimated Market Value}}{\$159,000}$$

Step Two – Calculating Mortgage Payment

In order to estimate the monthly and then annual mortgage payment, we must make assumptions regarding the interest rate on the loan and the down payment. We assume a 5% interest rate, and a down payment of 5%.

$$\frac{\text{Estimated Market Value}}{\$159,000} - \frac{\text{Less the Down Payment}}{\$7,950} = \frac{\text{Amount Mortgaged}}{\$151,050}$$

The formula for determining the monthly mortgage payment on a 151,050 loan with a 30-year term and a fixed annual interest rate of 5% is

$$\text{Monthly Payment} = \$151,050 \left(\frac{.0042(1.0042)^{360}}{1.0042^{360} - 1} \right) = \$814.57$$

The annual mortgage costs would therefore be $814.57 \times 12 = \$9,774.84$

⁶⁴ The median sales ratio is the ratio of the median sale price to the median assessed value. SDDOR published a statistical analysis report in 2015 evaluating the accuracy of assessment values for South Dakota cities. The report can be found at http://dor.sd.gov/Taxes/Property_Taxes/Publications/PDFs/pg%2078-103_CityStatistical20142.pdf

Step Three – Calculating Annual Property Taxes

Property taxes in South Dakota are applied to the taxable value of a home, which is set at 85% of the assessed property value. Pennington County applied an effective tax rate on property of 1.43% in 2017.⁶⁵ We apply an effective tax rate of 1.45% in order to account for rising property tax rates in the future. For a home assessed at 150,000, the taxable value of the home would be $.85 \times 150,000 = 127,500$

$$\frac{\text{Taxable Value}}{\$127,500} \times \frac{\text{Effective Property Tax Rate}}{.0145} = \frac{\text{Property Tax Due}}{\$1,848.75}$$

Step Four – Adding Insurance and Utilities Costs

For the cost of ownership calculation, we assume an annual home insurance cost of 1,500.⁶⁶ Additionally we assume an annual utilities cost of 2,040.⁶⁷ The total assumed insurance and utilities costs is $\$1,500 + \$2,040 = \$3,540$.

Step Five – Estimating Total Cost of Ownership

The total cost of ownership must account for all of the costs detailed above. We then calculate the level of income necessary for the annual costs of ownership to be less than 30% of annual income.

$$\frac{\text{Annual Mortgage}}{\$9,774.84} + \frac{\text{Annual Property Tax}}{\$1,848.75} + \frac{\text{Annual Insurance and Utilities}}{\$3,540} = \frac{\text{Annual Ownership Cost}}{\$15,163.59} \text{ and } \frac{\text{Monthly Ownership Cost}}{\$1,263.63}$$

⁶⁵ Full details regarding effective property tax rates are available at http://www.pennco.org/vertical/sites/%7B94B870DC-F4F5-409E-B25D-A72449C5D7C0%7D/uploads/Assessment_and_Taxation_2017.pdf

⁶⁶ Based on Rapid City average home insurance rates as reported by valuepenguin.com in November 2017. Current average rates may differ from historical averages. <https://www.valuepenguin.com/best-cheap-homeowners-insurance-south-dakota>

⁶⁷ The annual utilities and fuel cost estimate is based on projected average monthly costs for: water and sewer estimated at \$60 per month, gas estimated at \$42 per month, and electricity estimated at \$68 per month resulting in an average monthly utilities bill of \$170 per month.

Annual utility and fuels cost assumptions are based on estimates for fuel usage provided by Montana Dakota Utilities Co. (approximately 504 per year for fuel usage including taxes and fees) and estimates for average monthly household electricity costs (approximately 130 per month for electricity usage including taxes and fees) found at https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf