
Section 5

Household & Housing Projections

This section of the plan discussed the projected housing demand for all of Buchanan County. Projections of specific cities can be found in their respective City Profile in Section 6. Note, these projections represent a best estimate based on the historic and projected trends discussed in this study. If variables are adjusted, the projections will adjust. As projected rates and quantities are realized, the projections should be updated. These forecasts should not be strictly interpreted, but rather serve as a reasonably expected guidepost of future needs.

Household Projections

In order to establish future housing projections, a number of factors must be considered. First, is population. As explained in Section 2: Population Projections on page 10, a forecast of Buchanan County’s future population was calculated using an average of three different population projections. Figure 5.1 shows these projections. A small portion of the county’s population will live in Group Quarters, such as group homes, skilled nursing facilities, treatment facilities, correction facilities, or similar institutions. The projected group quarters population increased is weighted higher than the county’s overall population rate increases due to the expected increase in persons living in group nursing facilities as the population continue to live longer and the “Baby Boomer” generation ages. Subtracting the number of persons living in group quarters from the county’s estimated population results in the population of the county’s residents requiring housing.

At the time of the 2010 Census, 20,615 of county residents did not live in group quarters. In the coming decades, this number is expected to increase to 20,714 in 2020, 20,805 in 2030, and 20,896 in 2040.

Figure 5.1: Projected Population to be Housed, Buchanan County

	2010	2020	2030	2040
Total Population	20,958	21,074	21,180	21,291
Population in Group Quarters	343	360	375	395
Total Population in Housing	20,615	20,714	20,805	20,896

Another important consideration is average household size. Following national trends, Buchanan County’s average household size and family size have consistently declined over the past several decades, as shown in Figure 4.15 in Section 4. From 1980 to 2010, the county’s household size declined at an average rate of 0.12 per decade. Figure 5.2 shows the County’s projected household size. The projection are conservative estimates given the rate change trend experienced in the county from 1980 to 2010.

Figure 5.2: Projected Household Size, Buchanan County

Year	2010	2020	2030	2040
Average Household Size	2.53	2.45	2.36	2.26

Based on the forecasted assumptions in Figures 5.1 and 5.2, Buchanan County will grow by an estimated 667 new households by 2030 from their 2010 count. Growth in this forecast scenario is primarily attributed to the county's projected population increase and a decline in the household size. Figure 5.3 shows the projected number of households through 2040.

Figure 5.3: Projected Number of Households, Buchanan County					
Year	2010	2020	2030	2040	
Household Population	20,615	20,714	20,805	20,896	
Household Size	2.53	2.45	2.36	2.26	
Total	8,148	8,455	8,816	9,246	
Change from 2010	-	306	667	1,098	
Percent Change from 2010	-	3.8%	8.2%	13.5%	
Change from Previous	-	306	361	430	
Percent Change from Previous	-	3.8%	4.3%	4.9%	

Figure 5.4 displays the historic number of households in the County since 1970 as well as a linear projection (dotted green line) based on changes from 1970 to 2010 (same data as shown in Figure 4.16). In orange, is the projected number of households as determined by forecasts in Figure 5.3. The dashed green line is the linear trendline based on the rate of change experienced from 1990 to 2010. As is evident, the projections in Figure 5.3 are consistent with this trend.



Housing Unit Projections

To maintain a healthy housing market, a percentage of housing units must turn over and become vacant to provide a ready housing supply. Typically, a five (5) percent housing vacancy rate is considered a standard of the housing market equilibrium – where the quantity of demand and quantity of supply are equal.

A low vacancy rate can be an indicator of less affordable housing as the limited supply drives up the price. Too low of a vacancy also can discourage persons from relocating to a community because lack of housing options. It can also prevent a homeowner with a middle-value home from moving up to a higher-value home in town and thus opening up a more-affordable home on the market. Too high of a vacancy rate can flatten home values as supply outweighs demand. Vacant homes with absent property owners may fall into disrepair or lead to building code maintenance issues.

Figure 5.5 shows the historic vacancy rates in Buchanan County, Iowa and the United States as determined by US Census data. The average vacancy rate in Buchanan County in 2000, 2010, and 2015 was 8.6 percent.

Figure 5.5: Historic Vacancy Rate

Year	2000	2010	2015
Buchanan County	8.8%	9.0%	8.0%
Iowa	6.8%	8.6%	8.7%
United States	9.0%	11.4%	12.3%

Figure 5.6 shows the projected number of housing units that will be needed to house the forecasted number of households (Figure 5.3) and maintain a housing vacancy rate of 8 percent. According to the projections, by 2030, it is estimated that there will be demand for an additional 721 housing units in the county than existed in 2010.

Figure 5.6: Projected Number of Housing Units

Year	2010	2020	2030	2040
# of Units to be Occupied by Households	8,148	8,455	8,816	9,246
Vacant Units at Given Time (8%)	652	676	705	740
Total	8,800	9,131	9,521	9,986
Change from 2010	-	332	721	1,186
Percent Change from 2010	-	3.8%	8.2%	13.5%
Change from Previous	-	332	390	464
Percent Change from Previous	-	3.8%	4.3%	4.9%

Figure 5.7 shows the historic number of housing units in the County and the projected number of units based on the data in Figure 5.6. The Figure below illustrates that the County's historic rate (linear trend shown in green) of increasing its total housing unit will be adequate to provide for the projected 2040 demand.



Figure 5.8 shows the historic number of housing units in the County from 1980 to 2010. The County's housing stock increased by 9.1 percent during this 30-year period. The average percent of the per decade unit increase between 1990 and 2010 is 4.1 percent. As shown in Figure 5.6, the County's historic rate lags compared to the county's projected growth rate.

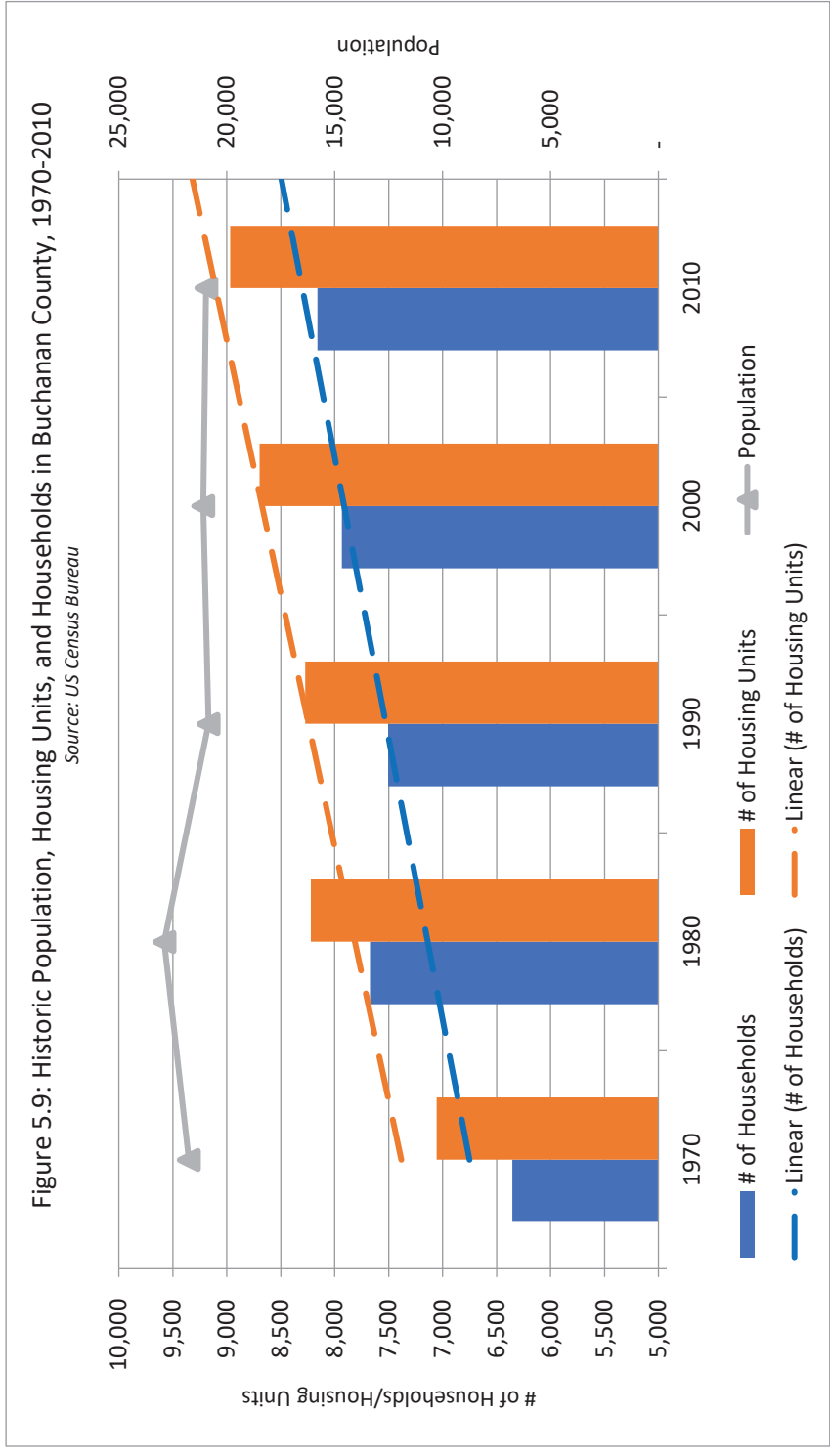
Over the 30-year period, from 1980-2010, the number of housing units in the county increased at an average rate of 24.9 homes per year. As shown in Figure 5.7, there will be demand to support an estimated 721 additional housing units in the county from 2010 to 2030. To add this number of housing units in this time frame, the county would need to average 36 new units per year over 20 years.

Figure 5.8: Historic Number of Housing Units in Buchanan County, 1980-2010

	1980	1990	2000	2010
Buchanan County	8,222	8,272	8,697	8,968
% Change from Previous	-	0.6%	5.1%	3.1%
% Change from 1980	-	0.6%	5.8%	9.1%

An alternative way to show the historic trends discussed in the projections above, is shown as Figure 5.9, which displays Population, Housing Unit, and Household data of Buchanan County from 1970 through 2010. Figure 5.9 illustrates how, despite population decline, housing demand has and is expected to continue to increase as the number of households in the county increases. Consider, that from 1970 to 2010, in Buchanan County:

- The population decreased by 3.2 percent (-804) from 21,762 to 20,958
- The number of Housing Units increased by 27.1 percent (+1,913) from 7,055 to 8,968
- The number of Households increased by 28.4 percent (+1,806) from 6,355 to 8,161



New Construction Trends

Construction of new housing units will be necessary to replace annual losses but to also provide for new demand.

Figure 5.10 shows the number of new unit construction build starts from 2012 through 2016. During the past five years, the County has experienced an annual average of 40.8 new housing units. This is primarily made-up of single family homes as well as some multi-unit structures. From 2012 to 2016, unincorporated Buchanan County generated the single most number of housing units starts – accounting for 39 percent of new units. This is fairly representative as the unincorporated area makes-up 37 percent of the county’s total population.

At 33 percent, Independence (29 percent of county population) had the next highest number of new housing unit starts followed by Jesup (12 percent of population), which accounted for 15 percent of starts. The other eight cities, which represent 22 of the County population, were responsible for 13 percent of new unit starts.

Figure 5.10: New Housing Unit Starts in Buchanan County, 2012-2016

Jurisdiction	2012	2013	2014	2015	2016	5-Year Totals	Annual Average	10-Year Average
Aurora	1	1	1	0	0	3	0.6	6
Brandon	1	1	0	0	0	2	0.4	4
Fairbank	0	0	1	0	0	1	0.2	2
Hazleton	1	0	2	0	1	4	0.8	8
Independence	12	14	18	8	16	68	13.6	136
Jesup	4	6	7	5	8	30	6.0	60
Lamont	0	1	1	0	0	2	0.4	4
Stanley	0	0	0	0	0	0	0.0	0
Quasqueton	1	0	3	1	3	8	1.6	16
Rowley	0	1	0	0	0	1	0.2	2
Winthrop	2	1	0	1	1	5	1.0	10
Buchanan County	18	19	16	12	15	80	16.0	160
Total	40	44	49	27	44	204	40.8	408

Source: Buchanan County Assessor's Office; Does not include construction data from the portions of Hazleton or Stanley in Fayette County

Housing Loss Trends

Over time, some existing housing units will also be lost due to demolition, deterioration, or otherwise being removed from the housing market by their owners. The 2010 *Iowa Housing Needs Assessment* by Iowa State University estimates an annual loss rate of 1 percent of units for areas like Buchanan County (“All Other” Category). The Projected Annual percentage loss of housing stock by county projected by the study are shown in Figure 5.11. As stated in the study,

“[Figure 5.11] contains Iowa-specific annual loss factors by tenure and occupancy status, type of structure and major urbanization level....

“The loss factors represent the expected percentage loss during any given year due to conversion, merger, commercial use, damage or condemnation, demolition or disaster, and other causes. The estimates were derived from national rates of loss, with adjustments to reflect the relative age of Iowa’s housing stock. The differences in values across the county types primarily reflect the differing age composition of housing stock in the state’s metropolitan, micropolitan, and all other regions.”

Using the Iowa Housing Needs Assessment projection of an annual housing unit loss of 1 percent of counties like Buchanan, it is estimated that Buchanan County will lose an estimated 1,028 units between 2015 and 2030, as shown Figure 5.14 on the following page.

Buchanan County’s housing demolition records from 2012 through 2016 (Figure 5.13) show a demolition rate of 47.2 units per year. Based on 2015 housing unit estimates, this 47.2-unit loss equates to approximately 0.5 percent per year. Based on this most recent 5-year demolition rate, the county will lose an estimated 708 housing units between 2015 and 2030.

Figure 5.11: Projected Annual Percentage of Iowa Housing Stock by County Type

Tenure and Occupancy Status	Estimated Percentage of Total Units Lost Per Year			
	Iowa	Metropolitan	Micropolitan	All Other
Owner Occupied	0.83	0.81	0.86	0.85
Single Family	0.70	0.67	0.72	0.74
2 to 4 multi-family	1.61	1.56	1.74	1.65
5+ multi-family	0.77	0.79	0.78	0.68
Mobile home	2.88	2.84	2.91	2.92
Renter Occupied	1.02	0.99	1.10	1.06
Single family	0.76	0.73	0.76	0.78
2 to 4 multi-family	1.57	1.55	1.62	1.56
5+ multi-family	0.83	0.82	0.92	0.79
Mobile home	3.01	2.94	3.09	3.03
Vacant	1.86	1.53	2.04	2.07
Grand Total:	0.95	0.90	1.02	1.00

Source: Annual Percentage loss factors for the 2010 Iowa housing stock by county type, estimated by Iowa State University Department of Economics, as prepared for the Iowa Housing Needs Assessment: Key Issues and Indicators, www.extension.iastate.edu

Figure 5.12: Homes Demolished in Buchanan County, 2012-2016	
Year	# of Homes Demolished
2012	51
2013	62
2014	39
2015	38
2016	46
5-Year Average	47.2
47.2 / 8,989	0.53%
<i>Source: Buchanan County Assessor's Office; estimated # of housing units in County per 2015 ACS</i>	

Figure 5.13 shows the projected County housing unit losses, in five-year increments, based on an average of the data in Figures 5.11 and 5.12. Readers should note that the annual loss factors apply only to the inventory that exists in the year 2010, and they exclude new units built post 2010.

Figure 5.13: Housing Unit Loss Projections, Five Year Increments			
Year	1% Annual Attrition*	Historic Demo Rate**	Average
	Net Units Lost	Net Units Lost	
2020	365	236	301
2030	1,028	708	868
2040	1,615	1,180	1,398
<i>Note: * Assumes loss rate by housing type (Figure 5.11), annual loss rate of units that existed as of 2010, as projected from 2016-2040; ** Assuming 47.2 annual average of units lost due to demolition from 2015 ACS Housing unit count; Projections from 2015 ACS Housing unit count estimate of 8,989</i>			

Housing Demand Based on New Construction and Loss Rates

Based on projected demolition, attrition, and new construction rates discussed, the County is not producing an adequate supply of housing to meet the projected demand. Below, Figure 5.14 shows the projected number of housing units necessary for the county to meet demand while factoring in the projected housing loss and new construction rates described above.

By 2030, the projected housing unit demand in the County is estimated to be 9,521 (Row A). Using the projected housing loss attrition rates, it is estimated that by 2030, the County will lose 868 housing units that existed in 2010 (Row C) – resulting in only 8,100 remaining units of the city's 8,968 2010 housing count (Row D).

Based on the recent new unit construction trends (Figure 5.10), Row F shows the projected number of new housing units that will be built. Row H shows, the total shortage of housing units that is expected at the loss and new construction rates discussed. It is estimated that, at the current rate, by 2030 the County will be short 809 housing units of the a reasonable potential demand.

Figure 5.14: Projected Housing Demand with Loss/New Construction Trends				
Row		2020	2030	2040
A	Projected Total Unit Demand (Figure 5.6)	9,131	9,521	9,986
B	2010 Housing Unit Count (Figure 4.7)	8,968		
C	Projected # of Units Lost (Figure 5.13)	-301	-868	-1,398
D	Projected # of Remaining 2010 Units (Rows B-C)	8,667	8,100	7,570
E	Unit Shortage with Loss (Rows A-D)	464	1,421	2,416
F	Projected # of New Const. Units (Figure 5.10)	204	612	1,020
G	Projected # of Total Units (Rows D+F)	8,871	8,712	8,590
H	Unit Shortage with Proj. New/Loss (Rows A-G)	260	809	1,396

Owner and Renter-Occupied Housing

Since 2000, the percent of renters of the county's occupied households has averaged 21 percent. See Figure 4.26 for additional information on historic rental rates in the county.

Figure 5.15 displays the anticipated number of households in the county by expected housing tenure (i.e. rent or own). Assuming the county's rental household rate maintains at 21 percent, by 2030 there is reasonably expected demand for an additional 524 owner-occupied and 131 renter-occupied households from 2010 count.

Figure 5.15: Projected Number Households by Housing Tenure

	2010	2020	2030	2040
Total Number of Households (Figure 5.3)	8,161	8,455	8,816	9,246
Owner-Occupied (79%)	6,441	6,679	6,965	7,304
Change from 2010	-	238	524	863
Percent Change from 2010	-	3.7%	8.1%	13.4%
Renter-Occupied (21%)	1,720	1,776	1,851	1,942
Change from 2010	-	56	131	222
Percent Change from 2010	-	3.3%	7.6%	12.9%

Figure 5.16 is the structure make-up of the county's housing units as of 2015, according to the American Community Survey. See Figure 4.2 for additional information, as well as state and national rates, of housing units by structure. At 87 percent, notably high percentage of the city's housing units are 1 unit, attached/detached structures (i.e. traditional single-family home). While it is anticipated the county will maintain this character, as the number of household and demand for developable land increases, so will the county's density. Reference Figure 4.2 to see how the county's unit by structure compares to state and national averages.

Figure 5.16: Housing Units by Structure in Buchanan County, 2015

	Number	Percent
1-unit, detached	7,637	85.0%
1-unit, attached	165	1.8%
2 units	142	1.6%
3 or 4 units	296	3.3%
5 to 9 units	175	1.9%
10 to 19 units	117	1.3%
20 or more units	57	0.6%
Mobile Homes	400	4.4%
Total	8,989	100%

Source: American Community Survey, 2011-2015

Figure 5.17 is an example of how the housing demand for the city could be achieved balancing the units by structure type. The data assumes an adjustment towards a higher rate of multi-family construction.

		2020						2030						2040					
Projected Unit Need with Losses (Figure 5.14, Row E)		464						1,421						2,416					
		# of Structures	# of Units	% of Units	Owner Occupied	Renter Occupied	# of Structures	# of Units	% of Units	Owner Occupied	Renter Occupied	# of Structures	# of Units	% of Units	Owner Occupied	Renter Occupied			
1-Unit		385	385	83%	331	54	1,185	1,185	83%	1,019	166	2,025	2,025	84%	1,697	328			
2 Units		10	20	4.3%	12	8	32.5	65	4.6%	39	26	54	108	4.5%	5	103			
3 or 4 Units		7	24	5.2%	8	16	18	64	4.5%	22	42	29	102	4.2%	4	98			
5 to 9 Units		3	17	3.7%	3	14	4	32	2.3%	6	26	7	56	2.3%	1	55			
10 or more Units		0	0	0%	0	0	2	20	1.4%	0	20	2	35	1.4%	1	34			
Mobile Homes		18	18	3.9%	13	5	55	55	3.9%	40	15	90	90	3.7%	3	87			
Totals		423	464	100%	368	97	1,297	1,421	100%	1,125	296	2,208	2,416	100%	1,712	704			

Home Ownership Affordability Analysis

Estimates of housing affordability for sample price ranges for owner-occupied units was developed based on current household income. As previously discussed, spending 30 percent of household income on housing is the standard threshold used to determine if housing is affordable. A household that spends more than 30 percent of their household income on housing costs is not considered to live in “affordable” housing.

Figure 5.18 shows the number of households in Buchanan County by income range. This data is used for projecting number and percent of County households which could afford one of the homes in the scenario under the “Affordability of Buchanan County Households” in Figure 5.19. For the purposes of calculations, it was assumed that the count within a given range would be evenly balanced throughout the range. For example, of the 431 households with an income between \$10,000 to \$14,999, the count rate of \$11.60 per household. Therefore, it would be estimated that there are 86 households making less than more than \$10,000 but less than \$11,000 and 345 households between \$11,000 and \$14,999.

Figure 5.19 is a home-owner affordability analysis of Buchanan County and, based on household income, and percent of households that would be able to purchase the house at an affordable rate – spending either 30 percent or 20 percent on housing costs. Three home scenarios are used, with values of \$100,000, \$175,000, and \$250,000. The scenario assumes good credit and a 30-year mortgage at 4.25 annual rate and 10 percent down. The monthly expense analysis includes estimated mortgage payment as well as property tax, homeowner’s insurance, and monthly utilities.

Variations in total household income and percent of income spent on housing by any given household results in an array of housing types that households are able to afford. The typical Buchanan County homeowners spends less than 30 percent on housing. Of Buchanan County households with a mortgage, 53 percent spend less than 20 percent, 28 percent spend between 20 and 30 percent, and 19 percent spend more than 30 percent on their household income on housing.

Using 30 percent of their annual income, estimated 52 percent of households in Buchanan County can afford a \$175,000 house. However, as noted, the majority of households spend less than 30 percent of income on housing. Therefore, the number of households able to afford paying 20 percent of income to housing was also calculated. Under this scenario, 42 percent of households could still afford a \$175,000 house. A majority of county households can afford a home valued at \$100,000 or less at both 20 percent and 30 percent rates.

Figure 5.18: Buchanan County Household Income, 2014

Annual Income	# of Households	% of Households
Less than \$10,000	336	4.0%
\$10,000 to \$14,999	431	5.2%
\$15,000 to \$24,999	690	8.3%
\$25,000 to \$34,999	750	9.0%
\$35,000 to \$49,999	1,359	16.4%
\$50,000 to \$74,999	1,868	22.5%
\$75,000 to \$99,999	1,292	15.6%
\$100,000 to \$149,999	1,079	13.0%
\$150,000 to \$199,999	234	2.8%
\$200,000 or more	259	3.1%
Total	8,298	100%
Median Household Income		\$56,393
Mean Household Income		\$72,508

Source: 2014 American Community Survey

Figure 5.19: Buchanan County Housing Affordability based on Household Income

Home Value and Financing Assumptions			
	Starter Home	Move-Up	Executive
Home Value	\$ 100,000	\$175,000	\$250,000
Down Payment (10%)	\$10,000	\$17,500	\$25,000
Loan Principal	\$90,000	\$157,500	\$225,000
Interest Rate	4.25%	4.25%	4.25%
Monthly Payments (30 year)	360	360	360
Monthly Expenses			
Mortgage Payment	\$442.75	\$774.81	\$1,106.86
Homeowners Insurance	\$80.00	\$100.00	\$120.00
Property Tax	\$150.00	\$262.50	\$375.00
Utilities	\$250.00	\$250.00	\$250.00
Total Monthly Expense	\$922.75	\$1,387.31	\$1,851.86
Annual Expense	\$11,073.00	\$16,647.72	\$22,222.32
Affordability to Buchanan County Households			
Housing Cost as % of Household Income	<u>30%</u>	<u>30%</u>	<u>30%</u>
Minimum Monthly Household Income	\$3,075.83	\$4,624.37	\$6,172.87
Minimum Annual Household Income	\$36,910.00	\$55,492.40	\$74,074.40
% of County Households able to Afford	71%	52%	35%
Housing Cost as % of Household Income	<u>20%</u>	<u>20%</u>	<u>20%</u>
Minimum Monthly Household Income	\$4,613.75	\$5,549.24	\$7,407.44
Minimum Annual Household Income	\$55,365.00	\$66,590.88	\$88,889.28
% of County Households able to Afford	52%	42%	26%