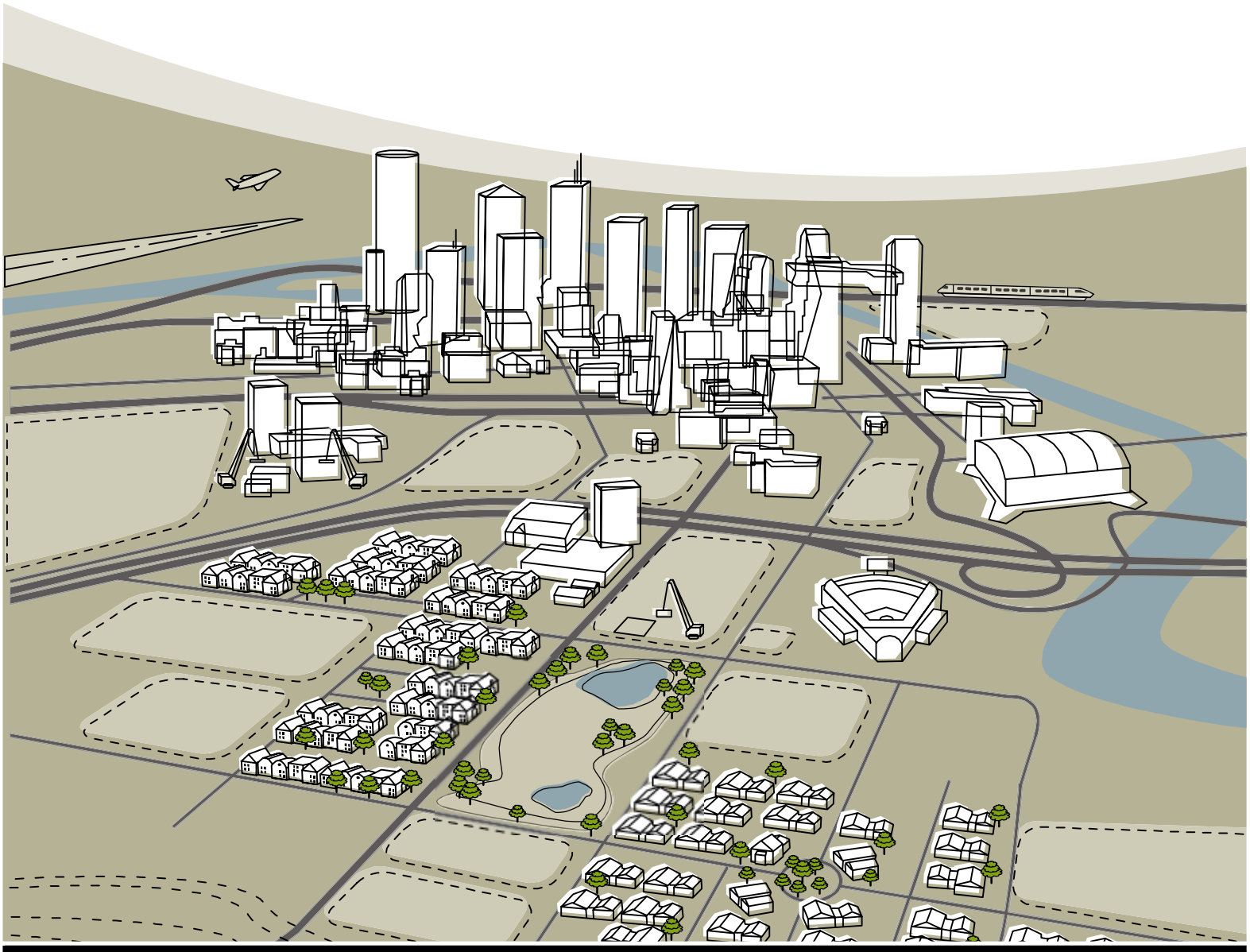
Real Estate RESEARCH
CONSULTANTS

City of Bowling Green, KY

Affordable Housing Market Analysis

November 20, 2008



STRATEGISTS ■ ECONOMISTS ■ PLANNERS ■ ADVISORS

Real Estate RESEARCH
CONSULTANTS

Alice A. Burks, Director
Housing and Community Development
1017 College Street
P. O. Box 430
Bowling Green, KY 42102-0430

Dear Ms. Burks,

Real Estate Research Consultants, Inc. (RERC) has completed our affordable housing market analysis for the City of Bowling Green. The study was completed as outlined in our contract with you dated July 18, 2008.

The attached report summarizes the results of our analysis and is based on estimates, assumptions, and other information related to the above. Such estimates, assumptions, or other information were developed from prior research, knowledge of the industry, and discussions with you. The sources of information and basis of estimates and assumptions are stated in the report. Since our documentation is based on estimates and assumptions which are inherently subject to uncertainty and variation depending upon evolving events, we do not represent the data as results which would actually be achieved.

The following paragraphs express conditions and limitations which our firm necessarily states with any engagement of this nature. Please call us if you should have questions. Our services did not include legal and regulatory counseling, comments on matters associated with zoning or other state and local government regulations, permits and licenses. Further, no effort was made to determine the possible effects on any specific projects as they may be influenced by present or future federal, state, or local legislation, including any bond restrictions, changes in tax structure or tax law, environmental or ecological matters, or interpretations thereof.

Any conclusions and/or any prospective financial information that is included in our documentation were based on estimates and assumptions from previous studies, information developed from supplemental research, knowledge of the industry, and other sources, including certain information that you have provided. These sources of information and bases of significant estimates and assumptions are stated in our documentation. Some assumptions inevitably will not materialize and unanticipated events and circumstances may occur. Therefore, actual results achieved will vary from any estimates, and the variations may be material.

The terms of this engagement are such that we have no obligation to revise the document to reflect events or conditions, which occur subsequent to the date of the documentation. Our documentation is intended solely for your information, internal planning, potential financial partners, lenders, and presentation to other interested parties. Neither our documentation nor its contents, nor any reference to our firm may be included or quoted in any real estate offering or registration statement, or other agreement or document without our prior permission. Permission will be granted upon meeting certain conditions.

Please contact us if you have any questions about this report. It was a pleasure working with you on this assignment. It has been a pleasure to assist you in this assignment. If you have any questions concerning the analysis, please contact us.

Sincerely,

Owen M. Beitsch, AICP, CRE
Executive Vice President

Todd C. DeLong, AICP
Sr. Associate

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EXECUTIVE SUMMARY

Real Estate Research Consultants, Inc. (RERC) was retained by the City of Bowling Green (the City) to conduct a city-wide Housing Market Analysis. The analysis is a required component of the City's Consolidated Plan for the Community Development Block Grant (CDBG) program. The results of the analysis will assist housing policy decisions related to the investment of grant funding and the execution of programs and projects. The results of our analysis are summarized into the following findings, statements and conclusions:

- Population growth between 2000 and 2008 represented a 1.5 percent compounded annual growth rate compared with a 2.2 percent annual growth rate during the decade prior to 2000.

- Population growth between 2008 and 2030 is expected to achieve rates around 1.5 percent annually. This growth in population is expected to require more than 8,300 housing units over the next 22 years.

- Population growth is expected to continue observed trends between 1990 and 2000 with strongest growth in the 45 to 49, 50 to 54 and 20 to 24 year old age cohorts.

- In 2000, renter-occupied households accounted for 53 percent of total occupied households; well above national average which fall somewhere between 35 and 40 percent. This imbalance of owner- versus renter-occupied households is quite common in comparable cities with universities similar in size to WKU.

- Headship (head of household) and ownership rates are highest among the 25 to 44 year old age cohorts. These cohorts make up more than 37 percent of the total households in the city.

- Housing prices have also increased moderately along with growth in population, permitting, and sales activity. Average single-family home prices in the city increased from $113,000 in 2000 to $142,000 in 2007 representing a 3.9 percent compound annual growth rate. During the same period, however, households within the city were also able to afford more housing costs. The AMI for households in the city increased from $49,000 to $52,100 between 2000 and 2007.

- More than 2,500 new housing units have been added to residential stock since 2000 compared with a change of only 1,400 during the decade prior to 2000.

- Single-family size "creep" is a common dilemma across the region. Recent single family new construction on average is 37 percent larger than homes built before 2000.

- Population growth, housing starts, and residential property sales have increased moderately within the city since 2002. These changes in single-family residential activity since 2002 include:

  - the number of sales increased by 11.4 percent annually
  - sale prices increased by 3.6 percent annually

- In 2000, households headed by a person between ages of 25 and 34 accounted for 20 percent of the total households. The U.S. average for households headed by persons between ages of 25 and 34 was 17 percent in 2000.

- In 2000, roughly 23 percent or 4,500 households within the city did not receive wages and salaries or self-employment income. Other sources of income such as corporate and government retirement, social security, public assistance, and other sources contributed to household income.

- In 2000, slightly less than 2 percent of households had at least one criterion to qualify as substandard (i.e. lacked complete kitchen or complete plumbing).

- Cost burdened households pay more than 30 percent of income for rent or home-owner costs. Severely cost burdened households pay more than 50 percent of household income for rent or home-owner costs.

- In 2000, slightly less than 30 percent (4,970) of all owner- and renter-occupied households were cost burdened by monthly housing costs. Over 14 percent (2,529) of all owner- and renter-occupied households were severely cost burdened. Compared to the state, approximately 22 percent of all renter- and owner-occupied units were reported as cost burdened and 10 percent of all renter- and owner-occupied units were severely cost burdened.

- In 2000, the 15 to 24 and 75 and over age cohorts experienced the highest rates of cost-burdened households with nearly 53 percent and 24 percent of households having monthly housing costs of more than 30 percent.

- In 2000, nearly 74 percent of cost burdened households represented renter-occupied households. Consistent with lower income households renting versus owning.

- Based on affordability calculations outlined in this report, 38 percent of all houses sold between 2000 and 2007 were affordable to those making between 51 and 80 percent of the AMI.

- For units sold in 2007 less than 1 percent of housing units built between 2002 and 2007 was affordable to households earning less than 50 percent of the AMI, compared to 26 percent of units built prior to 2002.

- Construction needs by income through 2030 will require between 7,500 and 8,500 of housing units with prices or rents affordable to households at less than 120 percent of the AMI. These households would be distributed as follows:

  - Approximately 22 percent of new housing units would be required to be affordable to households at less than 30 percent of the AMI
  - 14 percent would be required to be affordable for households between 31 and 50 percent of the AMI

  - 21 percent would be required to be affordable for households between 51 and 80 percent of the AMI
  - Households between 81 and 120 percent of the AMI would require approximately 17 percent of new housing units

- The existing severely cost burdened households and renter- and owner-occupied households up to 120% of the AMI represent the segments with the greatest need for more affordable housing in the future.

- There are multiple factors affecting the supply of affordable housing. Some of which include land cost, housing density, infill policy, public-private relationships, inclusionary housing, linkage fees, and other regulatory measures.

- The City of Bowling Green is not known for intrusive regulatory measures limiting affordable housing offerings. In fact, HUD recently acknowledged the City as one of the few cities within the country creating a more inviting regulatory environment for providing affordable housing to its residents.

- A future land use plan and map would assist the City in educating the public regarding future growth and making decisions regarding the dilemma of greenfield versus infill development. Within the city's corporation limits much of the land has already been developed, leaving few opportunities for the development of new residential communities. While the City encourages infill development there are few incentives available for the private sector to undertake this more expensive and time consuming type of development. Such incentives may include the City purchasing land and reselling it to an approved developer at a discount price or other public-private partnerships that are mutually beneficial to the City and the developer.

- Without proper incentives in place these developers may simply opt to pursue development opportunities outside city limits and in the surrounding areas, such as unincorporated Warren County or other neighboring counties, where policies and regulations are more conducive to greenfield development. While new development on greenfield sites within the city may be less expensive to develop at this time, it may not be consistent with the community's goals as set forth in the City's comprehensive plan.

- Annexation is popular in some communities because it is recognized as an "easy" method for increasing property tax revenue for the City and school system. Annexation, however, can be costly for communities when important infrastructure, such as water, sewer or transportation is non-existent or insufficient to meet the demands of new development. The City should only consider this option if the terms of the annexation are consistent with the community's goals for growth and sufficient analysis has been conducted on the costs and benefits of the proposed annexation.

Real Estate Research Consultants, Inc. (RERC) was retained by the City of Bowling Green (the City) to conduct a city-wide Housing Market Analysis. The analysis is a required component of the City's Consolidated Plan for the Community Development Block Grant (CDBG) program. The results of the analysis will assist housing policy decisions related to the investment of grant funding and the execution of programs and projects.

The Consolidated Plan, as required by the U.S. Department of Housing and Urban Development (HUD), is intended to act as a community-wide vision for community development activities. The plan is also the means to meet the submission requirements for various federal grant programs such as CDBG and HOME Investment Partnerships (HOME).

This analysis is organized into the following sections:

1. Introduction
2. Social and economic characteristics
3. Population and household projections
4. Housing affordability
5. Current demand and supply
6. Future housing demand
7. Factors affecting affordable housing

1.0 INTRODUCTION

Determining net housing requirements is relatively straight-forward. Without regard to housing issues related to tenure, condition or affordability, net housing requirements in units is simply arithmetically derived from population demand and the social make-up of households.

The need for and desirability of providing housing attainable to many income levels has become the centerpiece of a policy debate challenging conventional ideas about the costs of housing and affordability.

Home ownership is a recognized national priority and represents the primary mission of the Federal Housing Administration (FHA). Since 1934, the FHA has opened the door to home ownership for over 34 million American individuals and families. The success of the FHA and many other federal, state and local programs and initiatives has propelled U.S. households to the highest ownership rates ever. As presented in Figure 1-1, nearly 70 percent of all households were owner-occupied in 2007 compared with as low as 64 percent in the early 1990s.

Figure 1-1: U.S. home ownership rates, 1980-2008

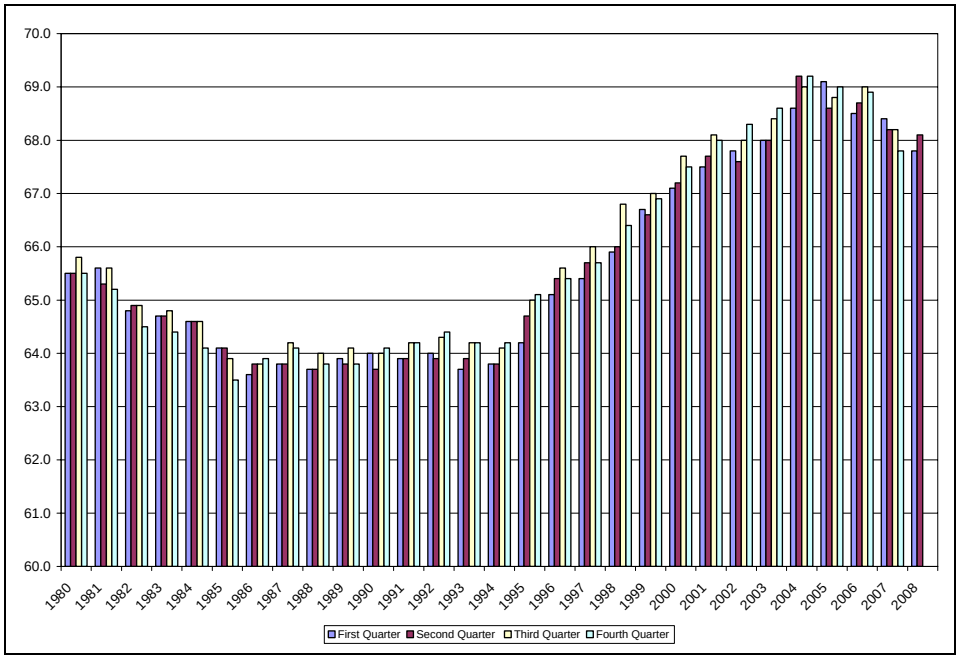
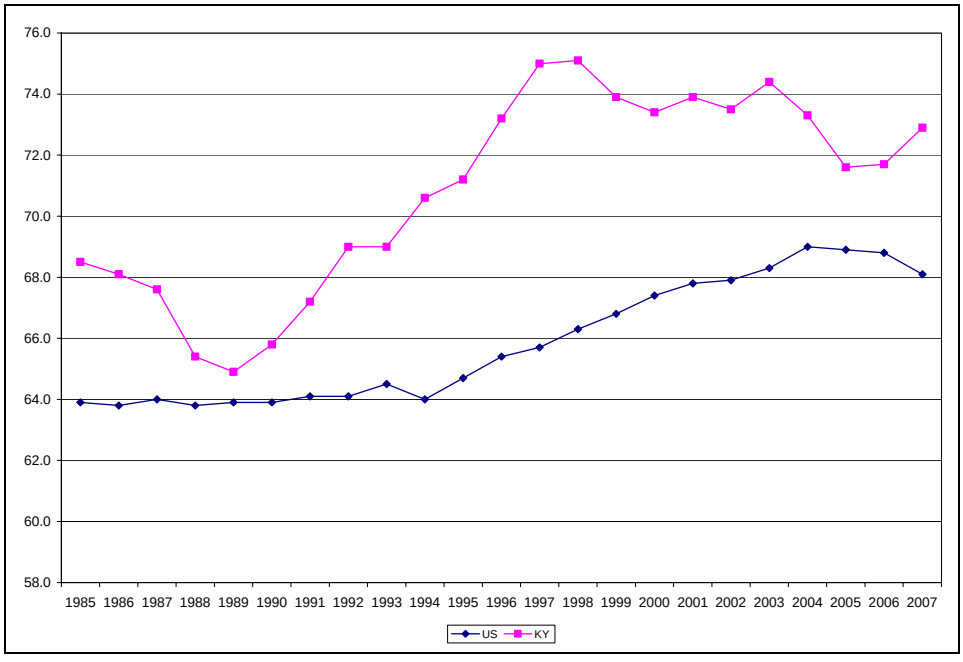


Figure 1-2 presents a comparison between home ownership rates in the U.S. and the Commonwealth of Kentucky. Home ownership is more prevalent in the state when compared to rates nationwide, averaging over 7 percent greater over the period shown in Figure 1-2. Moreover, home ownership surpassed 75 percent in 1997 and 1998, approximately 14 percent greater than the nationwide average.

Figure 1-2: Home ownership rates in the U.S. and Commonwealth of Kentucky, 1985-2007



The rise of home ownership and the strong real estate market between 2003 and 2007 have increased the risk of housing supplies for households at certain income levels. Significant increases in construction costs, neighborhood opposition to higher densities and competition for for-sale development has also resulted in increased rent rates. The cost of housing can have significant negative impacts on the mobility of existing households, the formation of first-time buyers and the ability of low- and very low-income households to afford other consumer expenditures. Altogether, these impacts can reduce potential population growth and economic development.

2.0 SOCIAL AND ECONOMIC CHARACTERISTICS

2.1 Population

Determining the net requirement of housing units is largely a function of historical population trends and potential growth of the city's population into the future.

RERC's analysis of population trends extended beyond the city and into Warren, Allen, Barren, Edmonson, Logan, Metcalfe, and Simpson Counties. These counties comprise an area greater than the Bowling Green Metropolitan Statistical Area (MSA), which includes Warren and Edmonson Counties. Bowling Green is the largest city and hub for economic activity in southwestern Kentucky, therefore, the economic and social well-being of the city impacts the surrounding counties. Table 2-1 presents the population from these areas from 1990 to 2007.

Table 2-1: Population of Bowling Green and surrounding areas, 1990-2007

	Population							
	City of Bowling Green	Warren County	Edmonson County	Barren County	Metcalfe County	Simpson County	Logan County	Allen County
1990	40,641	77,720	10,357	34,001	8,963	15,145	24,416	14,628
1995	45,338	86,301	10,818	35,912	9,556	15,863	25,725	16,091
1996	46,340	88,075	11,036	36,446	9,664	15,907	26,041	16,375
1997	47,365	89,596	11,231	36,914	9,865	15,900	26,314	16,768
1998	48,412	90,849	11,388	37,237	9,973	16,242	36,413	17,243
1999	49,483	91,550	11,602	37,687	10,064	16,326	26,469	17,658
2000	49,483	92,522	11,644	38,033	10,037	16,405	26,573	17,800
2001	49,661	93,612	11,731	38,470	10,091	16,587	26,611	17,859
2002	50,025	94,522	11,752	38,606	9,972	16,602	26,664	18,044
2003	50,559	96,098	11,777	38,990	9,971	16,640	26,613	18,160
2004	51,286	97,636	11,763	39,385	10,009	16,753	26,755	18,338
2005	52,256	99,659	11,930	40,039	10,089	16,904	26,872	18,455
2006	53,176	102,238	11,884	40,598	10,147	16,978	26,968	18,691
2007	54,182	104,023	11,978	41,184	10,268	17,070	27,129	18,899

Source: US Census Bureau; Kentucky State Data Center; RERC

Bowling Green and Warren County have experienced the greatest population growth in the last 17 years, averaging just less than 2 percent annual growth. All other counties within the study area, with the exception of Barren and Allen Counties, have experienced relatively stagnant population growth. Though their rate of growth is less than Warren County, both Barren and Allen Counties grew on average at approximately 1.2 percent and 1.4 percent, respectively.

Table 2-2 presents the distribution of population based on age and gender for the city. Based on 1990 and 2000 census information, there is a larger share of females in the total population than males. However, the total male population in the city grew more rapidly than females between 1990 and 2000.

Table 2-2: Total population by gender and age, 1990 & 2000

	1990	2000	Change	% Change
Total Population	**40,641**	**49,296**	**8,655**	**2.2%**
Male	18,751	23,841	5,090	2.7%
Female	21,890	25,455	3,565	1.7%
Age cohort:				
Under 5 years	2,409	2,965	556	2.3%
5 to 19 years	8,975	10,511	1,536	1.8%
20 to 34 years	12,205	15,219	3,014	2.5%
35 to 49 years	6,857	8,859	2,002	2.9%
50 to 64 years	4,861	5,847	986	2.1%
65 to 79 years	3,917	4,157	240	0.7%
80 years and over	1,417	1,738	321	2.3%

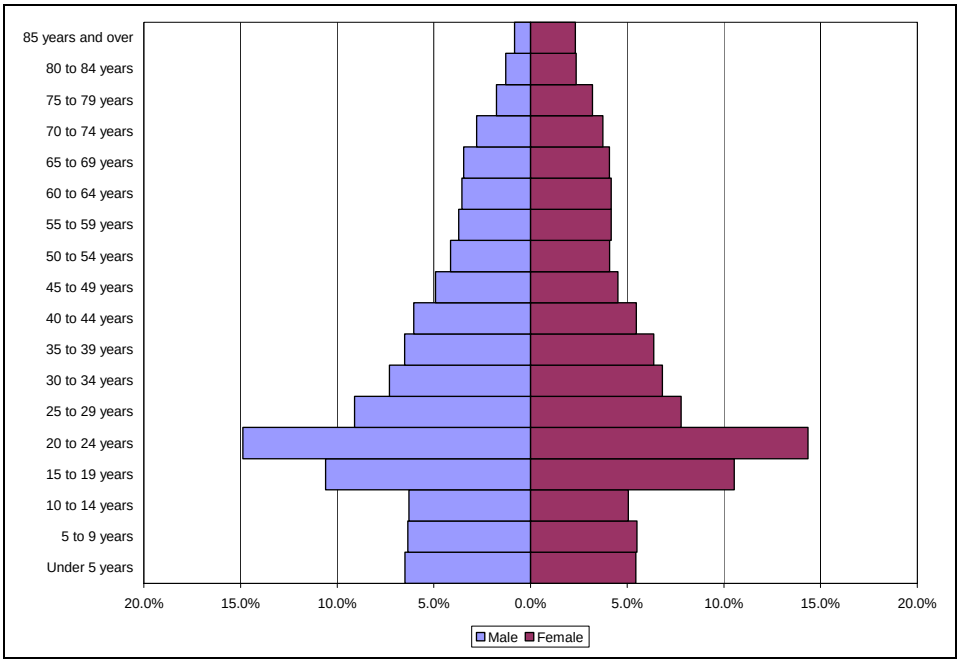
Source: US Census Bureau; RERC

The population concentrated within the 20 to 24 age group captured the largest percentage of total population in the city with approximately 15 percent of the population in 1990 and 16 percent in 2000. The city's population between 15 and 19 years of age maintained an approximate 11 percent share of the total population in 1990 and 2000. As illustrated in the population pyramids in Figures 2-1 and 2-2, other age groups comprising the lowest share of the total population includes the 75 to 79 age group. Each of the seven age cohorts over the age of 55 consist of approximately 4 percent of the total population in 1990 and declined to 2 percent in 2000.

Population growth between the age cohorts of 45 and 49 (4.2 percent), 50 and 54 (3.9 percent) and 20 and 24 (3.5 percent) exhibited the greatest growth between 1990 and 2000.

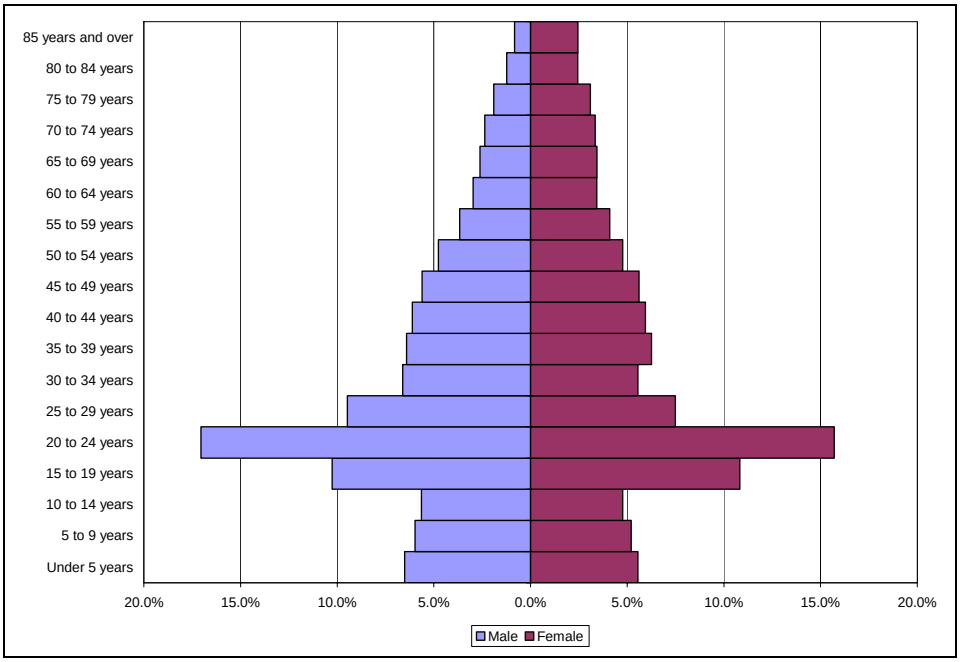
A substantial proportion of population between the ages of 15 and 30 provides evidence of Western Kentucky University's (WKU) impact on the population make-up of the community. While WKU enrollment figures should be reflected in the normal census counts, many students tend to report their parent's home as a permanent address instead of their address in the city, thus indicating a lower population count than is actually present in the city.

Figure 2-1: City of Bowling Green population pyramid, 1990



Source: US Census Bureau; RERC

Figure 2-2: City of Bowling Green population pyramid, 2000



Source: US Census Bureau; RERC

2.2 Employment

The area's employment characteristics provide insight regarding the type of housing needed by its population. This is particularly the case when it comes to levels of affordability.

In 1990 there were a total of 19,291 employees within the city and 37,117 within Warren County. In 2000, the number of employees increased to 24,173 and 46,803, respectively (see Table 2-3).

Between 1990 and 2000 employment within the city and county grew roughly the same at a 2.5 percent compounded annual average growth rate. Within the same time period, the city and county did, however, experience differing rates of growth of unemployment. Unemployment within the city increased at a greater rate of growth than that experienced by the county. Particularly of note is that unemployment growth outpaced total employment growth within the city.

According to U.S. Census data the composition of full-time versus part-time workers is relatively unchanged between 1990 and 2000. Approximately 50 percent of the civilian labor force worked 35 or more hours per week and 19 percent worked between 15 and 34 hours per week. Nearly one-third of the city's civilian labor force was reported as not working.

Table 2-3: Employment by gender within the City of Bowling Green and Warren County, 1990 & 2000

	1990		2000	
	Bowling Green	Warren County	Bowling Green	Warren County
Male				
Employed	9,783	19,784	12,771	25,003
Unemployed	707	1,306	925	1,399
Not in labor force	4,345	6,996	5,325	9,013
Female				
Employed	9,508	17,333	11,402	21,800
Unemployed	731	1,310	1,112	1,482
Not in labor force	7,858	13,230	8,737	14,902
Total				
Employed	19,291	37,117	24,173	46,803
Unemployed	1,438	2,616	2,037	2,881
Not in labor force	12,203	20,226	14,062	23,915

Source: U.S. Census Bureau; RERC

As shown in Table 2-4, the majority of the city's labor force and employment is made up of citizens between the ages of 20 and 24. The city's employment and labor force characteristics are similar to those found within its population make-up by age cohort. While those aged between 20 and 24 make up a substantial amount of the city's total labor force and employees, their impact diminishes as they age and move into the 25 to 29 age cohort. These findings were expected due the significant number of residents enrolled at WKU. Upon completion of their studies at the university, population data suggests most students leave Bowling Green to find employment elsewhere.

Table 2-4: Labor force and employment by age, 2000

	2000				2000		
	Male	Female	Total		Male	Female	Total
16 to 19 years	2,062	2,410	4,472	**55 to 59 years**	807	1,063	1,870
In labor force	1,194	1,379	2,573	In labor force	658	581	1,239
Employed	941	998	1,939	Employed	654	567	1,221
Unemployed	253	381	634	Unemployed	4	14	18
Not in labor force	868	1,031	1,899	Not in labor force	149	482	631
20 to 24 years	4,081	4,234	8,315	**60 to 64 years**	792	822	1,614
In labor force	3,267	3,209	6,476	In labor force	432	323	755
Employed	2,907	2,833	5,740	Employed	432	323	755
Unemployed	342	376	718	Unemployed	0	0	0
Not in labor force	814	1,025	1,839	Not in labor force	360	499	859
25 to 29 years	2,217	1,782	3,999	**65 to 69 years**	542	868	1,410
In labor force	1,935	1,452	3,387	In labor force	173	135	308
Employed	1,802	1,351	3,153	Employed	159	135	294
Unemployed	118	101	219	Unemployed	14	0	14
Not in labor force	282	330	612	Not in labor force	369	733	1,102
30 to 34 years	1,449	1,405	2,854	**70 to 74 years**	614	938	1,552
In labor force	1,204	1,050	2,254	In labor force	108	176	284
Employed	1,164	1,002	2,166	Employed	108	147	255
Unemployed	40	48	88	Unemployed	0	29	29
Not in labor force	245	355	600	Not in labor force	506	762	1,268
35 to 44 years	3,072	3,194	6,266	**75 years and over**	933	2,036	2,969
In labor force	2,605	2,232	4,837	In labor force	106	94	200
Employed	2,499	2,153	4,652	Employed	106	94	200
Unemployed	98	79	177	Unemployed	0	0	0
Not in labor force	467	962	1,429	Not in labor force	827	1,942	2,769
45 to 54 years	2,493	2,499	4,992	**Total**	19,062	21,251	40,313
In labor force	2,055	1,883	3,938	In labor force	13,737	12,514	26,251
Employed	1,999	1,799	3,798	Employed	12,771	11,402	24,173
Unemployed	56	84	140	Unemployed	925	1,112	2,037
Not in labor force	438	616	1,054	Not in labor force	5,325	8,737	14,062

Source: U.S. Census Bureau

Table 2-5 summarizes the distribution of the city's employees by industry. Of those employed the majority are working in the retail and manufacturing sectors of employment. Combined these industries make up about one-third of the total employees. The educational services and health care industries are also strong employment generators for the city.

Table 2-5: Employment by Industry, 1990, 2000 & 2008

	1990		2000		2008	
	Bowling Green	Warren County	Bowling Green	Warren County	Bowling Green	Warren County
Agriculture/Forest/Fish	210	1,158	183	732	186	796
Mining	46	147	39	117	45	132
Construction	848	1,989	1,075	2,905	1,165	3,274
Total MFG	3,102	7,847	4,206	8,755	4,792	10,031
Wholesale Trade	673	1,340	748	1,620	868	1,897
Retail Trade	4,925	8,232	3,764	6,888	4,179	7,806
Transport/Warehouse	377	939	750	1,665	840	1,885
Utilities	365	674	189	442	219	495
Information	NA	NA	510	828	584	966
Finance/Insurance	887	1,505	1,146	1,982	1,280	2,266
Prof/Sci/Tech/Admin	756	1,306	726	1,516	872	1,796
Mgmt of Companies	NA	NA	61	126	75	153
Admin/Support/Waste Mgmt	544	1,125	527	1,069	585	1,208
Educational Svcs	2,834	4,398	3,032	5,288	3,305	5,950
Health Care / Social Asst	1,674	2,914	2,549	5,141	2,823	5,868
Entertainment / Rec Svcs	316	478	469	697	505	768
Accommodations / Food Svcs	NA	NA	2,370	3,642	2,514	3,960
Other Svcs (Not Public Admin)	1,097	1,810	1,065	1,890	1,162	2,104
Public Administration	637	1,255	764	1,500	920	1,781
Total	**19,291**	**37,117**	**24,173**	**46,803**	**26,919**	**53,136**

Source: U.S. Census Bureau; RERC

Compared to the state, Bowling Green and Warren County have a much larger percentage of employees in the arts, entertainment and recreation and the management of companies and enterprises industries. The employment distribution among the remaining industries presented in Table 2-5 is approximately equal to the state.

The distribution of employment by industry has remained relatively unchanged over the last 18 years. The time it takes individuals to get to work, however, has increased. Between 1990 and 2000 the number of employees traveling more than 60 minutes to their workplace more than doubled. This equates to an average annual growth rate of over 12.5 percent. The number of workers traveling between 40 and 49 minutes to work increased, on average, at a rate of 7.2 percent annually. These trends are characteristic of a community where a greater number of new housing units are being built farther from employment centers and the more dense downtown area.

2.3 Housing and Households

In 1990 there were about 16,300 households in the city. As shown in Table 2-6, the number of households increased by approximately 3,000 to 19,300 in 2000. This represents a 1.9 percent annual rate of growth, which is slightly less than the 2.2 percent growth rate of the city's population. An estimated 2,500 households were created between 2000 and 2008.

Table 2-6: Housing and households, 1990, 2000 & 2008

	1990	2000	2008 (E)	Avg. Annual % Change (1990-2000)	Avg. Annual % Change (2000-2008)
Housing Occupancy					
Occupied	16,304	19,277	21,809	1.88%	1.78%
Vacant	1,538	2,013	2,781	3.04%	4.73%
Housing Tenure					
Occupied Units					
Owner occupied units	8,411	9,060	10,271	0.83%	1.81%
Renter occupied units	7,893	10,217	11,538	2.91%	1.75%

Source: U.S. Census Bureau; Claritas; RERC
(E) = Estimate

Table 2-7 illustrates that, on average, approximately 700 housing units were permitted each year between 1996 and 2007 with nearly 70 percent representing single-family detached structures. This equates to approximately 10 residential units per 1,000 people permitted each year. As presented in Table 2-7, approximately 40 percent of all single building permits issued in Warren County were for single family homes located within the city. Additionally, over 90 percent of the multifamily permits issued were for units located within the city.

Table 2-7: Building permits issued in the City of Bowling Green, 1996-2007

	Single Family Units	City as % of County	Units per 1,000 People	Multifamily Units	City as % of County	Units per 1,000 People
1996	144	26.7%	3.11	305	95.6%	6.60
1997	207	34.3%	4.38	326	87.2%	6.90
1998	193	35.5%	4.00	176	100.0%	3.65
1999	222	32.4%	4.50	310	99.4%	6.28
2000	255	40.7%	5.15	174	100.0%	3.52
2001	323	52.1%	6.50	16	88.9%	0.32
2002	269	42.2%	5.38	94	92.2%	1.88
2003	259	34.4%	5.12	289	98.6%	5.72
2004	246	30.4%	4.80	509	98.8%	9.92
2005	547	43.8%	10.47	105	77.8%	2.01
2006	256	34.6%	4.81	92	50.5%	1.73
2007	259	40.0%	4.81	166	92.2%	3.09
Total	**3,180**	**37.6%**		**2,562**	**92.2%**	

Source: U.S. Census Bureau; RERC

According to the 2000 U.S. Census, approximately 25 percent of the total housing units were built between 1990 and 1999. As shown in Table 2-8 there were about 13 percent fewer housing units built prior to 1960 than reflected in the 1990 U.S. Census.

Table 2-8: Housing units by year built, 1990 & 2000

	1990	2000	Change
Year Structure Built	**17,501**	**21,193**	**3,692**
Built 1990 to 1999		5,196	
Built 1980 to 1989	3,766	3,151	(615)
Built 1970 to 1979	3,391	3,802	411
Built 1960 to 1969	3,716	3,353	(363)
Built 1950 to 1959	2,846	2,546	(300)
Built 1940 to 1949	1,435	1,171	(264)
Built 1939 or earlier	2,347	1,974	(373)

Source: U.S. Census Bureau; RERC

Table 2-9 summarizes the number of housing units within the city by type of housing structure. Single family homes have maintained a consistent annual growth rate of slightly over 2 percent annually. Duplexes and housing structures with five or more units experienced the highest growth rates, growing at annual rates of 2.7 and 2.5 percent, respectively. Three to four-unit structures have experienced the greatest growth within this time period. Altogether, structures with more than three units grew by an average annual rate of nearly 5 percent.

Table 2-9: Housing units by type, 1990, 2000 & 2008

	1990	2000	2008	Change (1990-00)	Avg. Annual % Change (1990-00)	Change (2000-08)	Avg. Annual % Change (2000-08)
Total Housing Units	**17,392**	**21,193**	**24,589**	**3,801**	**2.2%**	**3,396**	**2.1%**
1, detached	9,336	10,500	12,016	1,164	1.3%	1,516	1.9%
1, attached	380	414	488	34	1.0%	74	2.4%
2	1,506	1,795	2,166	289	2.0%	371	2.7%
3 or 4	2,107	3,262	3,768	1,155	5.0%	506	2.1%
5 or more units	2,757	3,815	4,546	1,058	3.7%	731	2.5%
Mobile home	1,306	1,407	1,605	101	0.8%	198	1.9%

Source: U.S. Census Bureau; Claritas; RERC

In addition to reviewing housing units, RERC also examined the characteristics of the population living within these units. As presented in Table 2-10, family households comprised approximately 60 percent of the total households in the city in 1990. By 2008 the percentage of family households in the city dropped to 55 percent. This activity mirrors current trends occurring across the U.S. which indicate a higher number of non-family households over the past 18 years. Throughout the country there has also been an increase in the number of single-person households. These nationwide trends reflect household trends in Bowling Green as well.

Table 2-10: Household type and size, 1990, 2000 & 2008

	1990	2000	2008	Change (1990-00)	Avg. Annual % Change (1990-00)	Change (2000-08)	Avg. Annual % Change (2000-08)
Total Occupied Households	**15,947**	**18,858**	**21,809**	**2,911**	**1.9%**	**2,951**	**2.1%**
Family households	9,618	10,743	12,111	1,125	1.2%	1,368	1.7%
Nonfamily households	6,329	8,115	9,698	1,786	2.8%	1,583	2.6%
Household Size	**15,947**	**19,185**	**21,809**	**3,238**	**2.1%**	**2,624**	**1.8%**
1-person household	5,027	6,440	7,363	1,413	2.8%	923	1.9%
2-person household	5,349	6,411	7,388	1,062	2.0%	977	2.0%
3-person household	2,737	3,149	3,482	412	1.6%	333	1.4%
4-person household	1,852	1,928	2,267	76	0.4%	339	2.3%
5-person household	602	839	838	237	3.8%	(1)	0.0%
6-person household	247	246	295	(1)	0.0%	49	2.6%
7-or-more-person household	133	172	176	39	2.9%	4	0.3%

Source: U.S. Census Bureau; Claritas

Growth of the population housed in group quarters was also quite strong between 1990 and 2000 (see Table 2-11). Institutionalized population, comprised of those living in correctional institutions, grew at an annual compounded rate of nearly 10 percent. Non-institutionalized population comprising primarily of residents in college dormitories housed in group quarters grew at a rate of 3.4 percent.

Table 2-11: Group quarters population, 1990 & 2000

	1990	2000	Change	Avg. Annual % Change
Institutionalized population	**814**	**1,101**	**287**	**3.4%**
Correctional institutions	179	403	224	9.4%
Nursing homes	562	573	11	0.2%
Other institutions	73	125	52	6.2%
Noninstitutionalized population	**3,237**	**4,388**	**1,151**	**3.4%**
College dormitories (includes college quarters off campus)	2,926	4,054	1,128	3.7%
Military quarters	71	0	(71)	-100.0%
Other noninstitutional group quarters	240	334	94	3.7%
Total	**4,051**	**5,489**	**1,438**	**3.4%**

Source: U.S. Census Bureau

The heads of household are younger relative to nationwide figures. Headship (head of household) is much higher among the 25 to 44 age cohorts. Heads of household, or householders, continued to get younger between 1990 and 2000.

Table 2-12: Age of householder, 1990 & 2000

	1990	2000
15 to 24 years	2,207	3,125
25 to 34 years	3,225	3,490
35 to 44 years	2,838	3,546
45 to 54 years	2,132	3,134
55 to 64 years	1,901	2,139
65 to 74 years	2,051	1,942
75 years and over	1,593	1,482

Source: U.S. Census Bureau

Table 2-13 shows that while householders continued to get younger between 1990 and 2000, these householders were living in rental structures. Headship and ownership rates are highest among the 35 to 55 age cohort.

Table 2-13: Households by age and tenure, 1990 & 2000

	1990			2000		
	Total	Owner	Renter	Total	Owner	Renter
15 to 24 years	2,165	154	2,011	2,990	243	2,747
25 to 34 years	3,330	1,006	2,324	3,776	1,027	2,749
35 to 44 years	2,848	1,529	1,319	3,445	1,653	1,792
45 to 54 years	2,124	1,372	752	3,090	1,853	1,237
55 to 64 years	1,944	1,449	495	2,174	1,507	667
65 to 74 years	1,957	1,497	460	1,906	1,439	467
75 years and over	1,605	1,073	532	1,896	1,338	558

Source: U.S. Census Bureau

Table 2-14 illustrates an index comparison between household growth by age in the U.S. compared to Bowling Green. The share index is a comparison of headship distribution by age between the city and the country. Growth of total households among the 15 to 24 age cohort is nearly two and one-half times the pace of national growth. Much of the growth within this cohort can be attributed to the significant share of the population enrolled in WKU or other local post-secondary education facilities. Growth in total households among the 25 to 34, 35 to 44, 45 to 54, and 65 to 74 age cohorts lag behind the pace of growth in the U.S.

Growth in owner-occupied households within the city also lags behind the nation in these same age cohorts. Renter-occupied households in all age cohorts exceed the pace of national growth. More specifically, the growth of renter-occupied households in the 15 to 24 age cohort was nearly three times the pace of national growth.

Table 2-14: Growth of households by age and tenure, 1990-2000

	Total			Owner			Renter		
	1990-00 Growth	Growth Index[1]	Share Index[2]	1990-00 Growth	Growth Index[1]	Share Index[2]	1990-00 Growth	Growth Index[1]	Share Index[2]
15 to 24 years	3.7%	1.73	2.47	5.2%	4.06	1.03	3.5%	1.21	2.76
25 to 34 years	1.4%	0.67	0.97	0.2%	0.18	0.64	1.9%	0.65	1.23
35 to 44 years	2.1%	1.01	0.80	0.9%	0.68	0.65	3.5%	1.19	1.10
45 to 54 years	4.3%	2.01	0.85	3.4%	2.65	0.73	5.7%	1.95	1.23
55 to 64 years	1.3%	0.59	0.90	0.4%	0.34	0.85	3.4%	1.16	1.13
65 to 74 years	-0.3%	(0.14)	0.98	-0.4%	(0.34)	0.95	0.2%	0.06	1.08
75 years and over	1.9%	0.89	1.09	2.5%	1.94	1.04	0.5%	0.18	1.22
Total	**2.1%**			**1.3%**	**0.61**	**0.79**	**2.9%**	**1.38**	**1.38**

[1]Household change relative to total, owner- and renter-occupied household growth (1 = average)
[2]Household share relative to U.S. household share (1 = average)
Source: U.S. Census Bureau; RERC

Such a high share of householders in the 15 to 24 age cohort, particularly due to the population associated with WKU, generally indicates a higher percentage of households with low incomes and higher housing costs burden. Table 2-15 presents the number of households by household income as well as median, average and per capita income data for the city.

Table 2-15: Households by household income, 1990, 2000 & 2008

	1990	2000	2008	Change (1990-00)	Avg. Annual % Change (1990-00)	Change (2000-08)	Avg. Annual % Change (2000-08)
< $10,000	4,505	3,271	3,002	(1,234)	-3.5%	(269)	-1.2%
$10,000 to $14,999	1,918	1,691	1,496	(227)	-1.4%	(195)	-1.7%
$15,000 to $19,999	1,538	1,594	1,554	56	0.4%	(40)	-0.4%
$20,000 to $24,999	1,351	1,789	1,466	438	3.2%	(323)	-2.8%
$25,000 to $29,999	1,278	1,532	1,623	254	2.0%	91	0.8%
$30,000 to $34,999	996	1,030	1,503	34	0.4%	473	5.5%
$35,000 to $39,999	859	1,006	1,102	147	1.8%	96	1.3%
$40,000 to $44,999	710	1,147	952	437	5.5%	(195)	-2.6%
$45,000 to $49,999	595	705	988	110	1.9%	283	4.9%
$50,000 to $59,999	703	1,440	1,741	737	8.3%	301	2.7%
$60,000 to $74,999	702	1,441	2,009	739	8.3%	568	4.9%
$75,000 to $99,999	417	1,212	1,837	795	12.6%	625	6.1%
$100,000 to $124,999	141	647	1,107	506	18.4%	460	8.0%
$125,000 to $149,999	28	238	586	210	26.8%	348	13.7%
$150,000 or more	206	498	843	292	10.3%	345	7.8%
Average Household Income	$ 29,323	$ 43,734	$ 52,830	$ 14,411	4.5%	$ 9,096	2.7%
Median Household Income	20,428	29,162	36,183	8,734	4.0%	7,021	3.1%
Per Capita Income	11,836	17,621	21,555	5,785	4.5%	3,934	2.9%

Source: U.S. Census Bureau; Claritas

The term “cost burden” is referred to when a household is paying more than 30 percent of its income for rent or home-owner costs. Households paying more than 50 percent of income on rent or home-owner costs are considered to be “severely cost burdened.” As shown in Table 2-16, there was an approximate 4 percent average annual increase in cost burdened owner-occupied households between 1990 and 2000. That said, the majority of owner-occupied households (61 percent) in 2000 spent less than 20 percent of household income on housing costs while 17 percent were considered to be cost burdened.

Renter-occupied households are more likely to be burdened by housing costs than those in households which own their own housing unit. Over 37 percent of renter-occupied households in 2000 reported to have spent more than 30 percent of the household

income on housing costs. Nearly 35 percent of renter-occupied households spent less than 20 percent of the household income on housing costs.

Table 2-16: Specified owner- and renter-occupied housing cost burden as percent of household income, 1990 & 2000

	1990	2000	Change	% Change
Specified owner-occupied units	**6,734**	**7,588**	**854**	**1.3%**
Less than 20 percent	4,288	4,590	302	0.8%
20 to 24 percent	885	1,008	123	1.5%
25 to 29 percent	469	566	97	2.1%
30 to 34 percent	292	304	12	0.4%
35 percent or more	747	1,023	276	3.6%
Not computed	53	97	44	6.9%
Specified renter-occupied units	**7,873**	**10,099**	**2,226**	**2.8%**
Less than 20 percent	2,280	3,479	1,199	4.8%
20 to 24 percent	983	1,220	237	2.4%
25 to 29 percent	825	999	174	2.1%
30 to 34 percent	631	760	129	2.1%
35 percent or more	2,748	2,987	239	0.9%
Not computed	406	654	248	5.4%

Source: U.S. Census Bureau; Claritas

In 2000, nearly 30 percent of the total households in the city were spending more than 30 percent of income on housing costs (see Table 2-17). Approximately 14 percent of the total households were considered to be severely cost burdened households by spending more than 50 percent of the household's income on housing costs. Compared to the state, the city is comprised of a greater number of cost burdened households. Within the state, approximately 21 percent of the total households were spending more than 30 percent of its income on housing costs, and slightly less than 10 percent were spending more than 50 percent on housing costs.

As would be expected, the percentage of households that are spending more than 30 percent of the household income on housing is greatly dependent on the amount of household income available to spend. In 1990, 68 percent of the households earning less than 30 percent of the median income were cost burdened and 50 percent were severely cost burdened. In 2000 these figures increased to 72 and 58 percent, respectively. Interestingly, renter-occupied households experienced very little change.

Of those households earning between 31 and 50 percent of the median income, 60 percent were cost burdened and 21 percent were severely cost burdened. Between 1990 and 2000, cost burdened owner-occupied households increased by 5 percent while cost burdened renter-occupied households decreased by 2 percent.

For households earning between 51 and 80 percent of the median income, the number of cost burdened households increased for owner-occupied households and decreased for renter-occupied households. This trend also held true for severely cost burdened households.

Table 2-17: Cost burdened households by tenure and percent of median household income, 1990 & 2000

	1990			2000		
	Renter	Owner	Total	Renter	Owner	Total
% of Median Household Income						
< 30%						
Cost burdened	70.0%	62.9%	68.2%	70.4%	78.0%	72.1%
Severely cost burdened	54.5%	36.8%	50.2%	55.9%	63.2%	57.6%
31% to 50%						
Cost burdened	68.5%	40.1%	58.8%	66.5%	45.5%	59.8%
Severely cost burdened	18.7%	10.1%	15.8%	18.2%	28.1%	21.3%
51% to 80%						
Cost burdened	36.6%	18.7%	28.5%	25.9%	30.0%	27.4%
Severely cost burdened	1.5%	3.6%	15.8%	2.4%	10.9%	5.4%
> 80%						
Cost burdened	5.5%	17.7%	28.5%	1.0%	6.4%	4.5%
Severely cost burdened	1.4%	2.3%	2.5%	0.0%	1.0%	0.7%
All Households						
Cost burdened	NA	NA	NA	36.0%	19.2%	28.1%
Severely cost burdened	NA	NA	NA	18.1%	10.0%	14.3%

Source: HUD; RERC

3.0 POPULATION AND HOUSEHOLD PROJECTIONS

3.1 Population and Housing

The expected number of future households represents the most important component of analyzing housing demand. Housing formation is a product of population and therefore, should adequately address the projected population of the city. These projections should reflect population projections by age cohort. Household formation (i.e. head of household) and the characteristics of households (i.e. size, income, etc.) are a function of population by age. Thus, population projections by age cohort are necessary to estimate future households.

The Kentucky Data Center at the University of Louisville produced population projections for the city up to the year 2020. These population projections do not break down future population growth by age cohort. Using data available from the Kentucky Data Center and the U.S. Census Bureau, RERC completed population projections by age cohort through the year 2030. This method is commonly referred to as the cohort-component model. The results of these projections, in total, are similar to those completed by the Kentucky Data Center.

3.2 Population Growth Components

Using the cohort-component method, as diagramed in Figure 3-1, population was projected based on fertility, mortality and migration rates specific to age-sex cohorts. Advantages and disadvantages to using this method for projecting the city's future population are presented in Table 3-1.

Figure 3-1: Overview of projection iteration within the cohort-component model

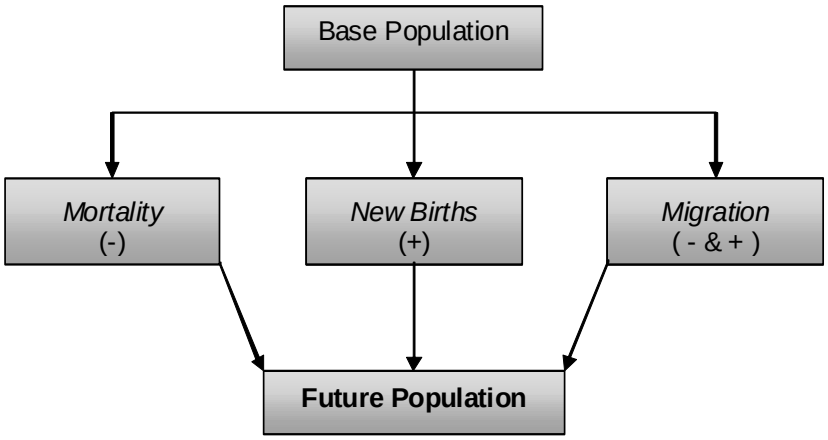


Table 3-1: Advantages and disadvantages of the cohort-component method

Advantages	Disadvantages
▪ Takes into account changes in the different components of population	▪ Complex methods can be difficult to implement
▪ Disaggregates inputs and outputs in terms of age, sex, and race	▪ Complex methods can cause more errors to be made
▪ Yields information about the size *and* composition of the population	▪ Higher data requirements

Source: Klosterman, 1990[1]

To project the population using the cohort-component method, four preliminary steps were taken:

1. Five-year survival rates were calculated using Life Tables supplied by the National Center for Health Statistics (NCHS).

2. Fertility rates were applied to the at risk population (females aged 10-49) to calculate the expected number of births over a five-year period.

3. A gender ratio was applied to the calculated number in order to separate new births by gender. These numbers were then inputs into the 0-4 cohort for each gender category.

4. Migration rates were calculated for each component using historic data. These rates were calculated by applying five-year survival rate to data from one period. Any difference between the estimated population of that cohort and the actual population of that cohort in the next period was assumed to be due to migration.

Once calculated, these rates were applied to known data from 1995 and 2000 to determine the number of new births, deaths and migration occurring over the five-year

[1] Klosterman, Richard (1990). *Community Analysis and Planning Techniques.* Rowman & Littlefield Publishers, Inc.: Savage, MD.

period. The results of these calculations were then used to project the population in 2010, 2015, 2020, 2025, and 2030. Table 3-2 illustrates the projected population based on this method. Figures 3-2 through 3-6 graphically present the projected population by age-sex cohort between 2010 and 2030.

Table 3-2: Population projections for the City of Bowling Green, 2010 – 2030

	2010	2015	2020	2025	2030
0-4	3,402	3,652	3,910	4,182	4,479
5-9	3,138	3,402	3,653	3,910	4,183
10-14	2,868	3,091	3,352	3,598	3,852
15-19	5,806	6,151	6,631	7,181	7,708
20-24	9,172	9,650	10,222	11,018	11,940
25-29	4,873	5,231	5,501	5,826	6,280
30-34	3,403	3,764	4,041	4,250	4,502
35-39	3,416	3,672	4,061	4,362	4,589
40-44	3,370	3,483	3,744	4,140	4,447
45-49	3,192	3,416	3,529	3,792	4,193
50-54	2,796	3,043	3,257	3,364	3,615
55-59	2,267	2,547	2,774	2,968	3,064
60-64	1,798	2,005	2,253	2,452	2,625
65-69	1,635	1,752	1,956	2,199	2,400
70-74	1,536	1,578	1,693	1,888	2,131
75-79	1,380	1,411	1,453	1,555	1,746
80-84	1,059	1,110	1,140	1,169	1,265
85+	955	1,035	1,100	1,142	1,185
Total	**56,068**	**59,994**	**64,267**	**68,996**	**74,204**

Source: U.S. Census Bureau; Kentucky Data Center; RERC

Figure 3-2: City of Bowling Green population pyramid, 2010

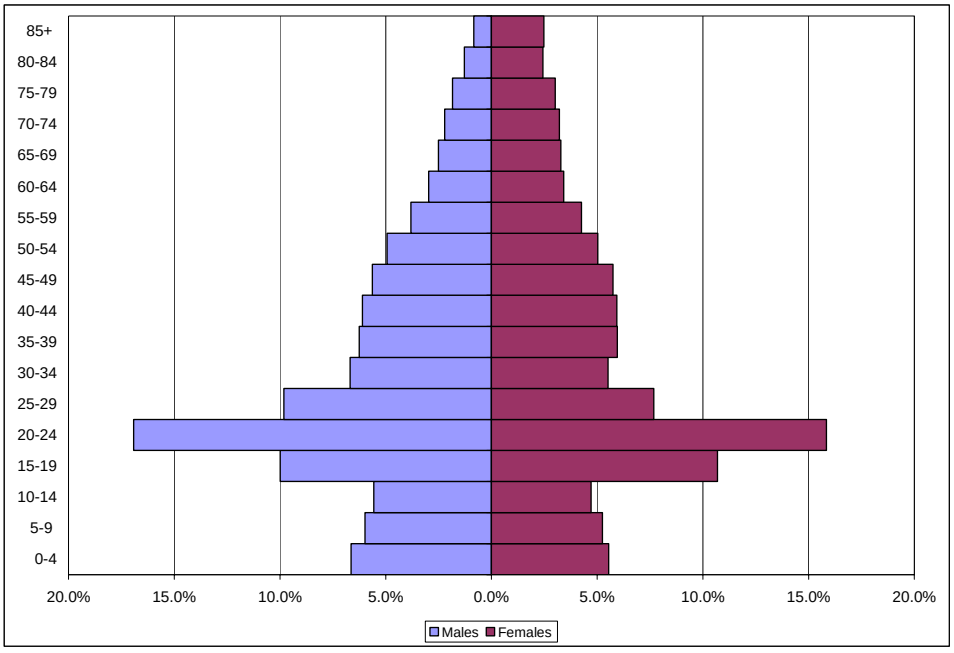


Figure 3-3: City of Bowling Green population pyramid, 2015

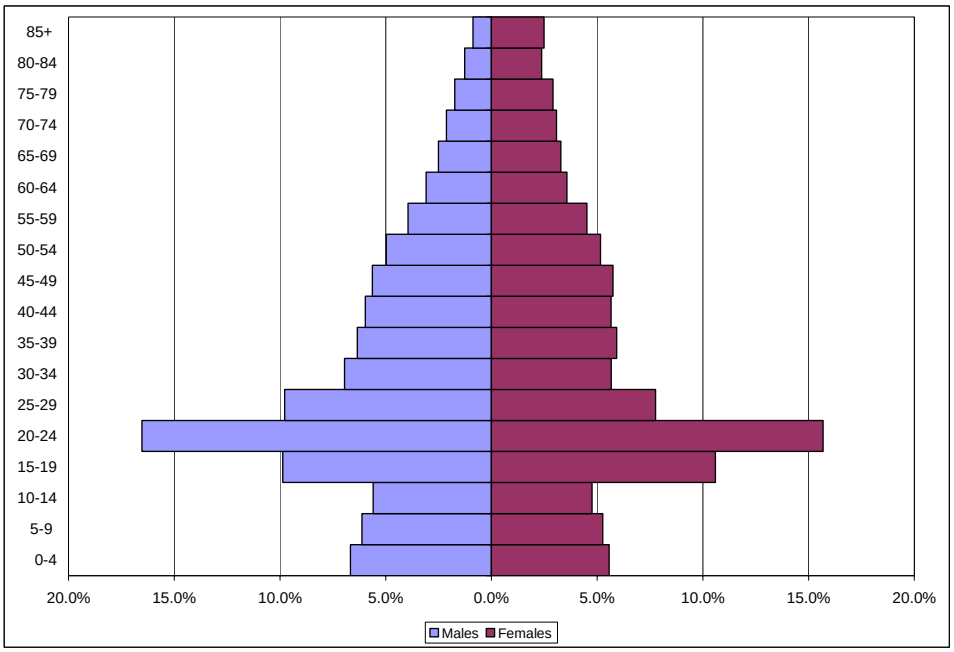


Figure 3-4: City of Bowling Green population pyramid, 2020

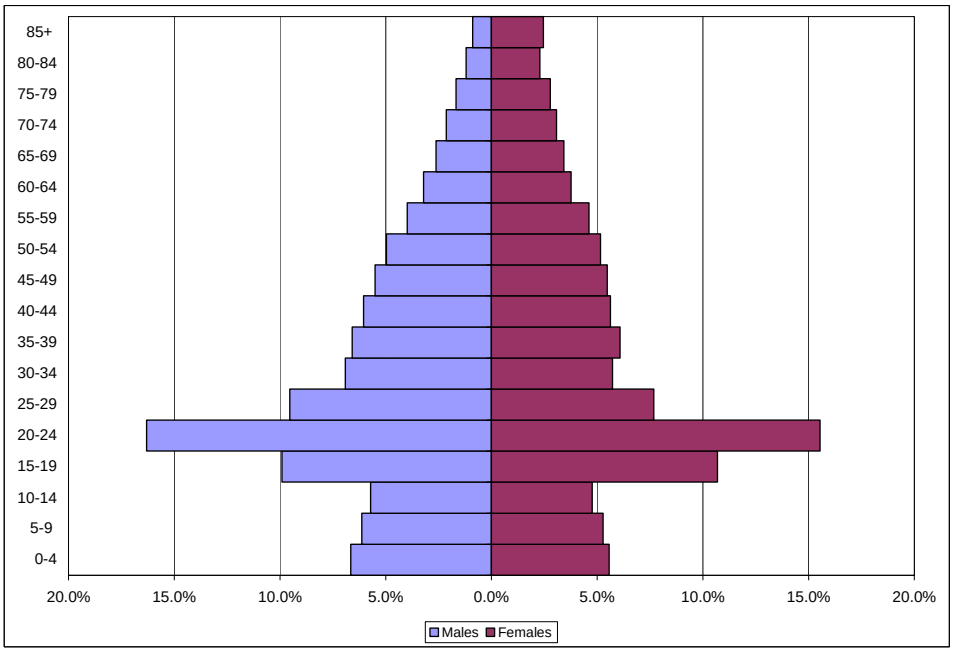


Figure 3-5: City of Bowling Green population pyramid, 2025

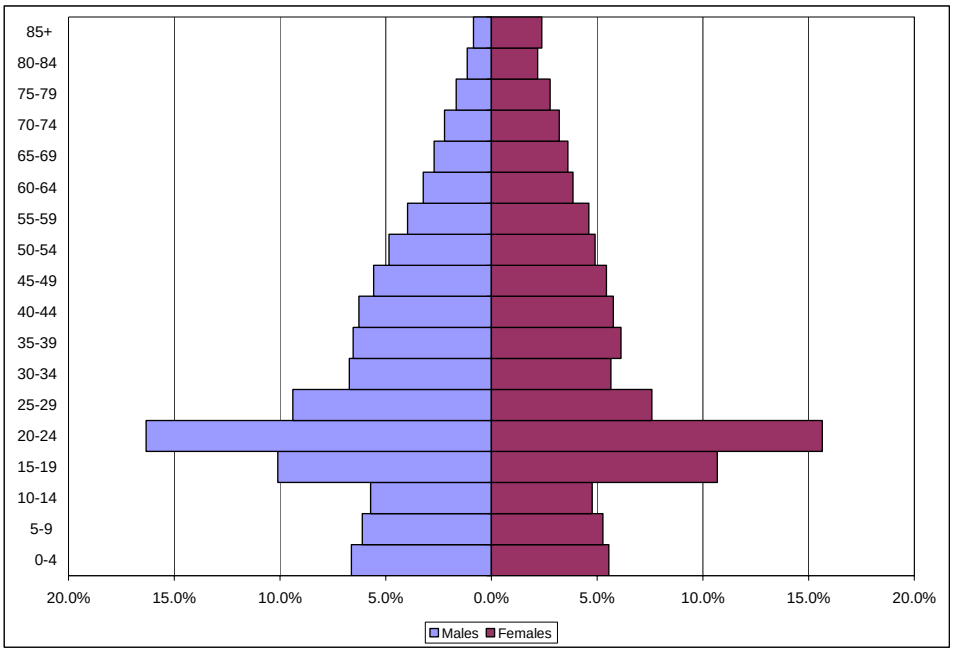
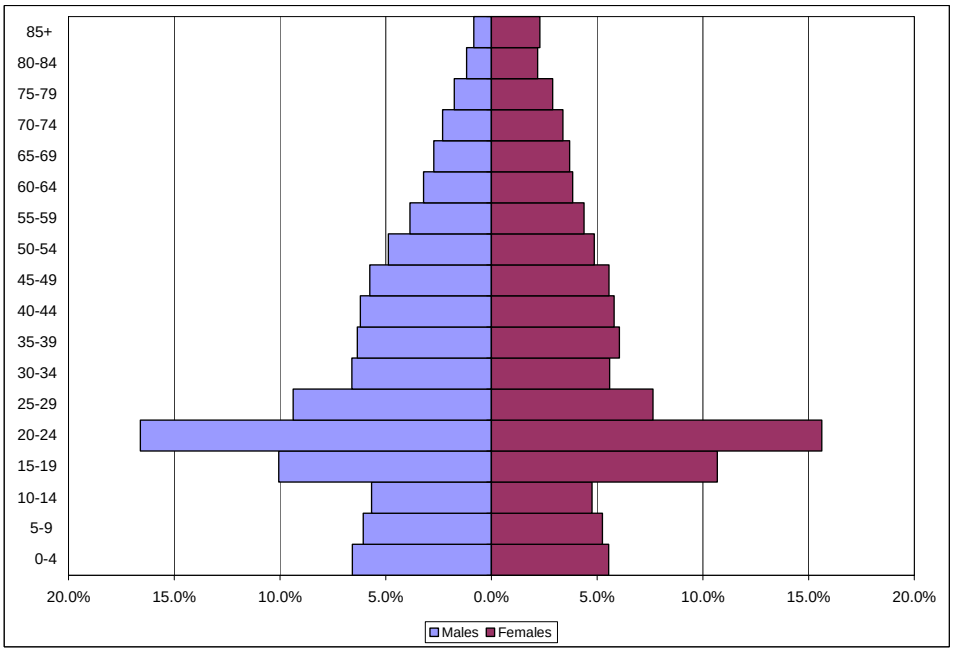


Figure 3-6: City of Bowling Green population pyramid, 2030



3.3 Household Projections

Household population can be converted into households based on probable headship rates. Each household is formed with one head of the household and the probable rate of representing that head of household varies by age. For example, in 2000 there were approximately 0.23 heads of household per person between the ages of 15 and 24. The

balance of persons within that age group represented some other component of a family or non-family household. In contrast, there were 0.65 heads of household per person between the ages of 65 and 74. Table 3-3 presents headship rates and indexes for each age cohort. The headship indexes are simply a comparison between the headship rates of the city and the U.S. Where the index is greater than 1.0, the rate is greater in the city than the U.S., whereas an index less than 1.0 indicates headship less than the U.S.

Table 3-3: City of Bowling Green headship rates, 1990 and 2000

	1990					2000				
				Headship					Headship	
	Total	Owner	Renter	Rate[1]	Index[2]	Total	Owner	Renter	Rate[1]	Index[2]
Total Population In Occupied Households	**36,520**	**19,392**	**17,128**			**43,807**	**21,210**	**22,597**		
Households by Age of Householder										
15 to 24 years	2,165	154	2,011	0.21	1.54	2,990	243	2,747	0.23	1.60
25 to 34 years	3,330	1,006	2,324	0.53	1.15	3,776	1,027	2,749	0.53	1.15
35 to 44 years	2,848	1,529	1,319	0.58	1.06	3,445	1,653	1,792	0.57	1.07
45 to 54 years	2,124	1,372	752	0.59	1.05	3,090	1,853	1,237	0.60	1.07
55 to 64 years	1,944	1,449	495	0.61	1.04	2,174	1,507	667	0.62	1.06
65 to 74 years	1,957	1,497	460	0.68	1.07	1,906	1,439	467	0.65	1.04
75 or over	1,605	1,073	532	0.66	1.02	1,896	1,338	558	0.64	0.99
Total	**15,973**	**8,080**	**7,893**	**0.48**	**1.01**	**19,277**	**9,060**	**10,217**	**0.47**	**0.99**
Population per Household	2.29	2.40	2.17			2.27	2.34	2.21		

[1] Heads of household per person
[2] Headship rates relative to U.S. headship rates (1=average)
Source: U.S. Census Bureau; RERC

The headship rates presented in Table 3-3 were applied to the projected population for the city. The estimated population growth in the city is expected to generate more than 7,300 households between 2008 and 2030 (see Table 3-4). Applying the city's 2000 vacancy rate of 10 percent yields a total demand for more than 8,000 housing units in response to the estimated population growth. To account for housing units taken away from the residential inventory due to demolition or zoning changes (i.e. residential to office or retail), the analysis applied an additional 5 percent rate to the vacancy rate. In total, over 8,300 housing units are in demand by 2030 based on the projected population growth.

Table 3-4: Projection of household demand, 2010-2030

	2000	2005	2010	2015	2020	2025	2030
Total Population	49,296	52,256	56,068	59,994	64,267	68,996	74,204
(less) Group Quarters Population	(5,489)	(5,820)	(6,246)	(6,677)	(7,148)	(7,676)	(8,258)
Total Population In Occupied Households	43,807	46,436	49,822	53,317	57,119	61,320	65,946
Households by Age of Householder							
15 to 24 years	2,990	3,169	3,376	3,562	3,799	4,102	4,429
25 to 34 years	3,776	3,993	4,367	4,747	5,035	5,317	5,689
35 to 44 years	3,445	3,651	3,838	4,046	4,414	4,808	5,110
45 to 54 years	3,090	3,276	3,617	3,901	4,098	4,322	4,716
55 to 64 years	2,174	2,308	2,526	2,829	3,124	3,369	3,536
65 to 74 years	1,906	2,027	2,073	2,177	2,385	2,672	2,962
75 or over	1,896	2,025	2,160	2,263	2,350	2,460	2,670
Total	**19,277**	**20,448**	**21,958**	**23,525**	**25,205**	**27,050**	**29,113**

Source: U.S. Census Bureau; RERC

4.0 HOUSING AFFORDABILITY

4.1 What Is Affordable Housing?

The term "affordable" describes a relationship between household income and housing costs. If changes in either income or costs are not equivalent, housing becomes unaffordable. Demand and supply are only equal when both buyer and seller are willing and able to consume a product at some price. Generally in a competitive market, an increase in the number of willing consumers provides suppliers with an incentive to utilize new technologies, new materials and new processes to produce more at lower costs thereby selling more at a lower price.

The production of housing, however, has one significant input that is not entirely variable – land. While currently not a major factor in Bowling Green, land supply nationwide have decreased, putting additional pressure on the price of land. As a result, diminishing land supplies in a rapidly growing economy, plus political constraints in terms of housing density and intensity of development, leads to escalating land costs per unit of production. Other significant factors such as new building technologies, new materials, productions processes, and low financing rates are not able to, or at least have not in the current environment, offset pressure applied by rising land costs. For low- to moderate-density residential development, land costs can account for nearly one-third of the market price. Higher density residential development reduces land costs from 7 to 18 percent, however, construction costs per unit increase dramatically. As the supply of land continues to diminish and new development and redevelopment continues at less than optimal densities, housing costs are expected to continue to adversely diverge from the growth of household incomes.

The national debate on "affordable" housing has therefore focused on how the supply side can be encouraged or controlled in order to meet the needs of households based on income resources. Both inclusionary and mitigation policies are based on controlling market forces in order to supply housing in an area that is affordable to a specific income group. Clearly identifying the targeted income group in both inclusionary and mitigation policy initiatives is critical. Clarifying this issue requires a review of lending standards and household expenditures.

4.2 Affordability and Lending Standards

How is "affordability" measured? In the process of conventional mortgage lending and refinancing, two debt ratios are generally applied to determine the likelihood of a potential borrower being able to meet their current and future debt obligations, including the proposed mortgage. These debt ratios include *top debt ratio* and *bottom debt ratio*.

Top debt ratio is defined as the monthly housing expense divided by gross monthly income (income before taxes and deductions). An individual's monthly housing expense is either the borrower's monthly rent payments or the total of the following owner expenses:

- 1st mortgage payment on home
- Real estate taxes
- Fire insurance
- Homeowner's association dues

- Second mortgage payment
- Third mortgage payment

These owner expenses are typically referred to as PITI (**P**rincipal, **I**nterest, **T**axes, and **I**nsurance). While PITI is not exactly the same as the monthly housing expense, it does not include items such as homeowner's association dues, the two terms are often used interchangeably.

The *bottom debt ratio* is defined as the monthly housing expense plus debt payments divided by gross monthly income. An individual's debt payments may include the following:

- Car payments
- Revolving credit (credit card payments)
- Payments on installment loans
- Payments on personal loans

Liabilities not included are utilities and payments on other real estate loans. Other real estate loan liability is typically reflected in net rental income. If the borrower has a new positive cash flow from rental property, the net income is usually added to gross monthly income. If the borrower has a net negative cash flow from rental properties, then the amount of the negative cash flow is usually added as if it were a monthly expense.

The lending industry has determined that a borrower's *top debt* and *bottom debt* ratios should generally not exceed 25 and 33 percent, respectively. The application of these rules is not absolute as evidence suggests lenders have allowed *top debt* and *bottom debt* ratios to reach as high as 28 and 36 percent, respectively. Within non-conventional lending practices, these ratios more than likely exceed these thresholds. The ceiling of *top debt* and *bottom debt* ratios in theory reflects the level of housing and other debt expenses after which individuals have a higher likelihood of developing budget problems, thus representing higher risk of delinquency or default. The lending industry has determined that housing costs falling within a range of 30 to 40 percent of household income generally represents what is affordable. With regard to recent activities in the economy, however, the lending industry is expected to apply more strict lending practices.

4.3 Link Between Affordability and Actual Housing Expenditures

Standard debt ratios reflect a measure of potential risk, not actual housing expenditures. Based on 2006 consumer expenditures, households in the U.S. earning approximately the median household income spend around 25 percent on housing. Households below the median income spend a greater percentage on housing. The percentage grows progressively larger as income levels decline, reaching 55 percent at the lowest income levels. Conversely, households above the median income level spend significantly less. This percentage declines progressively as incomes increase. The primary reason for this relationship reflects a relatively high, fixed cost component of housing. Households with higher income levels do spend more on housing as a result of more discretionary income, however, lower income households spend more on housing proportional to their household income and have little discretionary spending to off-set these costs. Table 4-1 summarizes the findings from the 2006 consumer expenditures survey of households in the U.S.

Table 4-1: Summary findings of U.S. consumer expenditures survey, 2006

	Household Income (before taxes)							
	$5,000 to $9,999	$10,000 to $14,999	$15,000 to $19,999	$20,000 to $29,999	$30,000 to $39,999	$40,000 to $49,999	$50,000 to $69,999	$70,000 and more
Share of households	5.5%	6.6%	6.7%	12.5%	11.6%	10.0%	15.5%	31.6%
Household Characteristics								
Persons per Household	1.6	1.7	1.9	2.2	2.3	2.5	2.8	3.0
Income before taxes	$ 8,006	$ 12,551	$ 17,462	$ 24,905	$ 34,685	$ 44,620	$ 59,253	$ 125,688
Earners per household	0.5	0.5	0.6	0.9	1.2	1.4	1.6	2.0
Average income per earner	$ 4,003	$ 6,276	$ 10,477	$ 22,415	$ 28,904	$ 31,871	$ 37,033	$ 62,844
Housing Tenure								
Homeowner	32.0%	47.0%	53.0%	55.0%	60.0%	68.0%	75.0%	88.0%
Renter	68.0%	53.0%	47.0%	45.0%	40.0%	32.0%	25.0%	12.0%
Average Annual Expenditures								
Food								
Food at home	$ 1,894	$ 2,159	$ 2,476	$ 2,605	$ 2,719	$ 3,061	$ 3,603	$ 4,798
Food away from home	966	940	1,155	1,531	1,970	2,269	2,892	4,502
Alcoholic beverages	192	202	227	254	384	427	505	833
Housing								
Shelter	4,221	4,699	5,399	6,297	7,311	8,057	9,706	15,853
Utilities	1,811	2,201	2,531	2,763	2,972	3,275	3,747	4,579
Operations	217	361	394	405	513	696	797	1,923
Supplies	379	288	356	409	472	531	667	1,003
Household furnishings and equipment	419	627	729	881	1,021	1,410	1,717	3,137
Apparel and services	883	670	860	1,133	1,297	1,573	1,981	3,078
Transportation	2,107	3,299	3,572	5,067	6,770	6,844	9,423	14,500
Healthcare	948	1,738	2,221	2,411	2,498	2,616	3,006	3,791
Entertainment	765	833	1,103	1,158	1,579	1,864	2,344	4,371
Personal care products and services	201	256	346	355	450	481	629	949
Education	441	462	240	285	398	412	681	1,838
Cash contributions	359	547	1,222	961	1,181	1,280	1,743	3,580
Personal insurance and pensions	311	517	813	1,564	2,537	3,729	5,275	11,635
Other	636	813	779	961	1,035	1,047	1,369	1,924
Total Average Annual Expenditures	**$ 16,750**	**$ 20,612**	**$ 24,423**	**$ 29,040**	**$ 35,107**	**$ 39,572**	**$ 50,085**	**$ 82,294**
Major Expenses Share of Income								
Housing	88.0%	65.1%	53.9%	43.2%	35.4%	31.3%	28.1%	21.1%
Transportation	26.3%	26.3%	20.5%	20.3%	19.5%	15.3%	15.9%	11.5%
Food	35.7%	24.7%	20.8%	16.6%	13.5%	11.9%	11.0%	7.4%
Healthcare, insurance, pensions	15.7%	18.0%	17.4%	16.0%	14.5%	14.2%	14.0%	12.3%
Total	**165.8%**	**134.1%**	**112.5%**	**96.1%**	**83.0%**	**72.8%**	**68.9%**	**52.3%**

Source: Consumer Expenditure Survey (2006) – Table 2; RERC

According to HUD, a dwelling is considered affordable if no more than 30 percent of a household's income is needed to cover housing costs. The similarities with lending debt ratios and HUD's definition should not be interpreted as representing the same measure of affordability. HUD's generalized definition of housing costs includes shelter (rent or mortgage), taxes, insurance, and utilities. It is a concept that implies tradeoffs in consumer expenditures are required to meet housing expenses at 30 percent of household income versus a standard that would not allow an individual to secure financing at that same level. In fact, affordable housing lending programs include targeting low- to middle-income households, alternate mortgage products, and relaxing debt ratios. In the recent past, affordable lending efforts typically allow debt ratios over 40 percent enabling low-income households to qualify for home ownership. It should be noted, however, that these practices may change in the near future due to the current status of lending institutions across the country.

The HUD benchmark of no more than 30 percent of household income is a reasonable standard or policy objective for "affordable" housing expenses. Nevertheless, it does not restrict households from qualifying and meeting household expenses in excess of 30 percent.

5.0 CURRENT HOUSING DEMAND AND SUPPLY

5.1 Housing Demand

There are four basic aspects of housing demand important in developing a housing market analysis. These include:

- Age of head of household
- Size of household
- Housing tenure (owner- and renter-occupied)
- Housing cost burden

The foundation of housing and household demand is existing and future population. Population projections by age cohort were developed in order to project household formations using existing headship rates. The ability of existing and future households to become owner-occupied households or lower the cost of burden of housing is a function of the existing and future supply of housing. This analysis has assessed the housing demands relative to these characteristics among existing households.

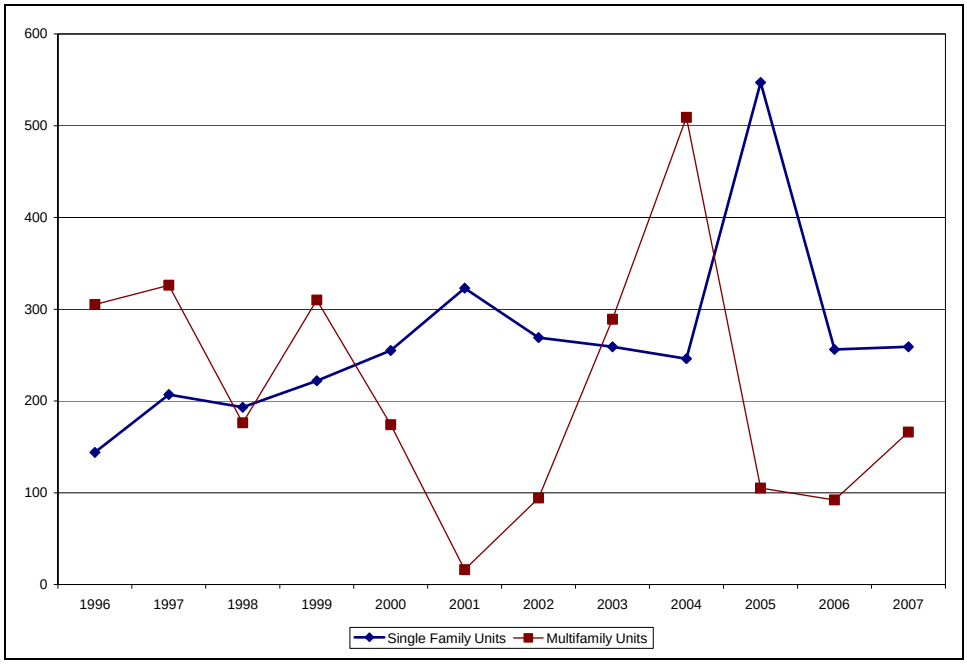
5.2 Recent Housing Trends

Population growth between 2000 and 2008 within the city increased moderately at a compounded annual growth rate of 1.5 percent compared to 1.9 percent between 1990 and 2000. The number of housing units within the city increased between 2000 and 2008 by approximately 2.1 percent annually, compared to 1.9 between 1990 and 2000.

As shown in Figure 5-1 single family residential permit activity in the city has remained *relatively* consistent between 1996 and 2007. Between 1996 and 2004, the city averaged approximately 240 permits issued per year. In 2005 the city issued 547 single family residential permits, more than twice the annual average of all years prior. The increase experienced in 2005 was short-lived as permits decreased back to normal in 2006 and 2007 with approximately 255 permits issued each year.

The data illustrated in Figure 5-1 correspond with other indicators suggesting the market for both rental- and owner-occupied housing is growing, but at a very modest rate. Between 2000 and 2008, owner-occupied households grew at a 1.8 percent annual growth rate, compared to 1.7 percent of renter-occupied households. These similarities coincide with previous census figures reporting a renter- and owner-occupied household mix of nearly 50/50, a lower percentage of owner-occupied households than reported for the U.S. and Kentucky.

Figure 5-1: Building permits issued by the City of Bowling Green, 1996-2007



Source: U.S. Census Bureau; RERC

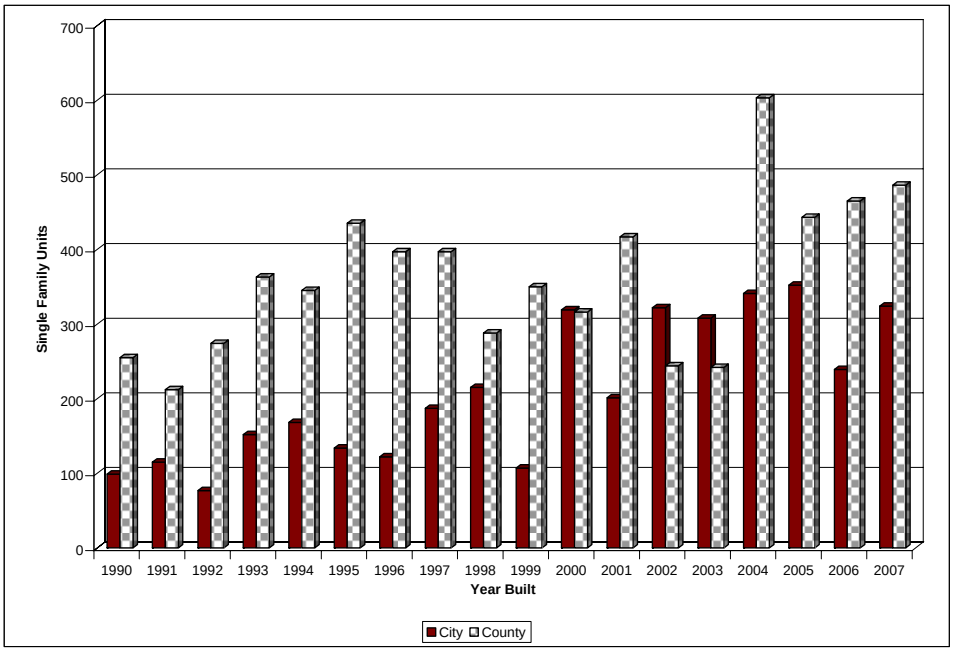
In 1990, renter-occupied households accounted for 48 percent of total occupied households, well above national averages which fall somewhere between 35 and 40 percent. In 2000, the proportion of renter-occupied households increased to 53 percent.

These characteristics can sometimes cause alarm among local governments and business leaders, but the increased share of renter-occupied households within the city can be explained by a number of influences. When factoring the total enrollment of institutions of higher education, such as WKU, into the total population, students make up more than 25 percent of the city's total population. Of the 18,000 students enrolled in all of WKU campuses, about 5,000 live on the main campus and an additional 5,000 students reside in Warren County. The population projections resulted in evidence of significant out-migration for those in the 25 to 29 age cohort, indicating a low number of students remaining in the city. Research of cities with comparable population and universities suggest these characteristics of household composition are actually quite common.

5.3 Current Housing Stock

According to data provided by the Warren County Property Valuation Administration (PVA), more than 2,500 single family housing units were added to the city's residential inventory since 2000. In comparison, less than 1,400 single family housing units were added between 1990 and 2000. The average size of single family homes built since 2000 in the city are approximately 1,450 square feet and just under three bedrooms whereas those built within unincorporated Warren County average over 2,000 square feet and more than three bedrooms. These differences were not experienced by homes built in the previous decade between 1990 and 2000. Figure 5-2 illustrates the comparison of single family residential homes added to the city and unincorporated Warren County inventory based on data provided by the PVA.

Figure 5-2: Single family units by year built in the City of Bowling Green and Warren County, 1990-2007



Source: Warren County PVA

Single family housing units located within the city and unincorporated Warren County make up approximately 97 percent of the county's total inventory of single family units. The city alone represents nearly 56 percent of this inventory. Over time, the proportion of homes built within Bowling Green's city limits has increased. Between 1990 and 2000, on average about 30 percent of the homes built per year were in located in the city. Conversely, since 2000 nearly 42 percent of the new homes built have been located within the city limits.

While these figures do indicate an increase in homes built within the city compared to unincorporated Warren County, much of the city's new homes were built in areas annexed by the city. With a few exceptions, most new single family homes have been built away from the downtown area and in greenfield areas. Without incentives, this type of development pattern will likely continue due to greenfield sites being easier and cheaper to develop.

The population characteristics of the city have made multifamily residential development an attractive product type of housing. As shown in Section 3.0, residents between the ages of 18 and 25 are not as likely to remain in the city as they get older. Census data also suggests residents within this age group are more likely to rent than buy their home.

Of the total 19,185 households in 2000, approximately 10,150 were made up of renters. In 2000, there were more than 7,000 units within structures of more than three units. In 2008, that number is estimated to be more than 8,300, representing a compounded average annual growth rate of about 2.3 percent. New multifamily units are likely to follow recent market trends catering to major rental populations of students and low income households.

More than 40 percent of the students at WKU were reported as living in off campus rental housing in 2006. As enrollment increases and on-campus housing options become limited, students are responsible for finding other living arrangements. As such, student housing is no longer just dormitories or traditional apartment living. Other common forms of student housing are single family homes rented out to students near the campus and apartment communities which commonly comprise two to four bedroom units and are rented by the bedroom, not the unit. One example in the Bowling Green area is College Suites. This 216-unit student housing apartment community offers a variety of amenities, such as a pool, free roommate matching, fitness center, and business center. Rent for these units is currently in the upper $300s per month per bedroom, which at approximately $1,500 per month for the entire unit, making these units some of the more expensive units in the area.

Other forms of housing within the city's current residential inventory include assisted living facilities and other units subsidized based on the occupants income. In total there are more than 2,000 housing units offered to residents with some type of financial assistance.

The Housing Authority of Bowling Green is very active in the community and offers approximately 600 units for income eligible households. According to the Authority, there is a waiting list in Public Housing or 120 applicants. The authority is planning to purchase additional units due to increased demand.

The Section 8 program provides rental assistance to income eligible households. Due to the limited number of vouchers available compared to the requests for vouchers, there is typically a waiting list for potential recipients. Currently, however, the waiting list is closed due to the large volume of voucher requests.

According to an August 2006 study on affordable assisted living facilities in the city, there are four assisted living/personal care facilities and 14 Section 42 apartment complexes. At the time of the study, apartments designated for the elderly were 98 percent occupied.

Tax credit housing units within the city have increased from 213 in 2003 to 516 in 2008. These units range in size from 700 to 1,200 square feet and rent on average at about $350 to $500 per month, which is approximately 25 percent below market rate rents. These units are about 97 percent occupied, indicating strong demand for these product offerings. 112 units have been proposed which would include 56 units for the Scholar House Program and 56 units designated for the elderly.

5.4 Current Housing Prices

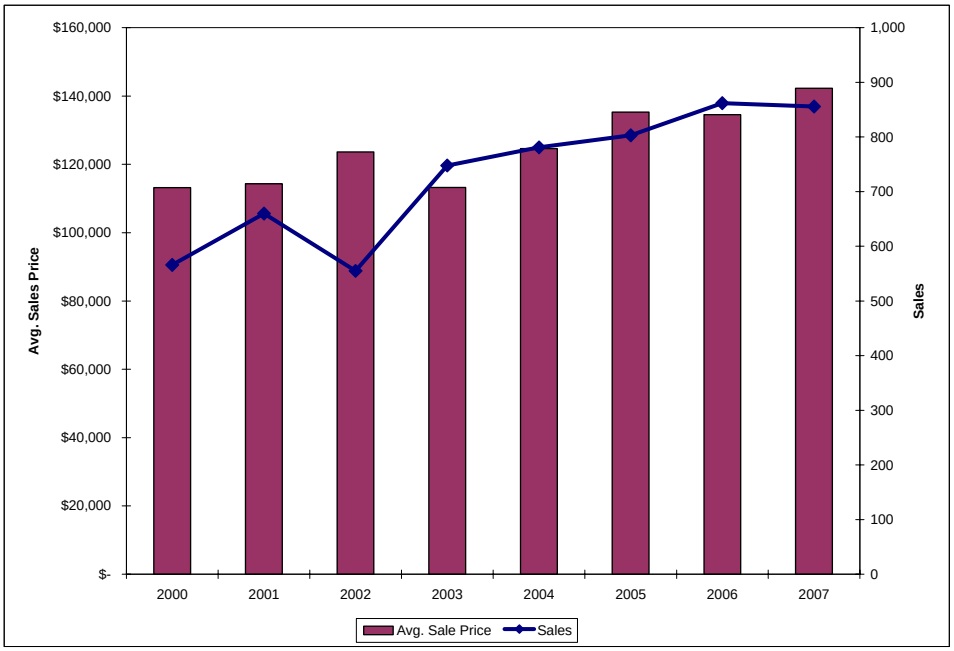
According to data obtained from the Realtor Association of Southern Kentucky, nearly all housing sales in the past four years have been single family detached homes.

In recent years, low interest rates, increased creative financing and lax lending standards helped create an influx of buyers for homes they previously would not have been able to purchase. These more attractive financing options increased the amount of money available for home financing and greater demand for residential for-sale units. In 2007, the market began to adjust itself in many communities around the country as mortgages approved with adjustable rates and/or interest only terms began to rise so

significantly that many of these borrowers were forced to sell their home at a severe loss or venture into foreclosure.

From 2002 to 2003, housing sales in the city increased by a greater rate of growth than historically experienced within the city (see Figure 5-2). This increase in sales between 2002 and 2003 may be explained by the housing market "catching up" after the steep decline in sales between 2001 and 2002 in addition to relatively lax lending practices which enabled more buyers to enter the market. Though relatively minimal, the 2007 sales decline is likely the result of the increases experienced in the prior four years.

Figure 5-2: Single family residential sales and average sales price, 2000 – 2007



Source: Warren County PVA; RERC

Sales prices increased by more than 8 percent from 2004 to 2005. Between 2000 and 2007, sales prices for single family homes have increased by a compounded average annual growth rate of nearly 4 percent. Figure 5-2 also illustrates the average sales price of single family homes between 2000 and 2007. The single family for-sale residential market, in terms of sales price, has remained relatively stable throughout the country's recent volatile residential market.

Because the intent of this analysis is to provide insight into the city's housing market, RERC calculated affordability thresholds to determine the affordability of the homes sold in the past eight years. These thresholds were based on the Area's Median Income (AMI) from 2000 to 2007 as published by HUD. Table 5-1 presents the AMI for each year.

The maximum purchase prices affordable by particular household incomes were established based on the following assumptions:

- 30 year loan term
- 30% of income would be dedicated to the cost of housing

- No downpayment required, but the analysis does apply primary mortgage insurance (PMI)
- 6.75 percent interest rate

Table 5-1: Bowling Green area median income, 2004-2007

	AMI
2000	$ 49,000
2001	50,500
2002	51,400
2003	50,500
2004	51,800
2005	51,800
2006	50,900
2007	52,100

Source: HUD

Based on these assumptions 38 percent of all houses sold between 2000 and 2007 were affordable to those making between 51 and 80 percent of the AMI. As presented in Table 5-2, the median house price for houses sold in 2007 was $110,000. The maximum price affordable within the 51 to 80 percent of the AMI affordability threshold was $128,523. In the same time period, 63 percent of all single family homes sales were affordable to households earning less than 80 percent of the AMI.

In 2007, approximately 21 percent of the units sold were affordable to those households with less than 50 percent of the AMI. Nearly 28 percent of the units sold were affordable to those households with incomes falling between 81 and 120 percent of the AMI. The majority (56.5 percent) of home sales were affordable to households with incomes less than 80 percent of the AMI.

Table 5-2: Single family sales by affordability threshold (% of AMI), 2000-2007

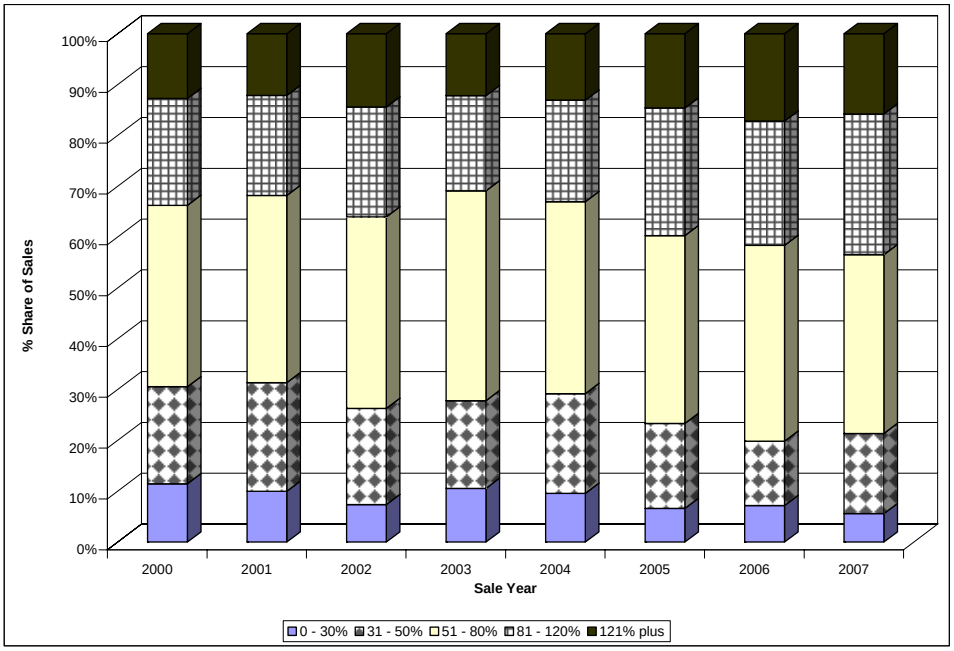
Year	Maximum House Price [1]	# of Sales Reported	Avg. Price	Median Price	% of Total Sales
2000					
0 - 30%	$ 45,239	65	$ 31,913	$ 30,000	11.5%
31 - 50%	75,548	108	63,236	65,000	19.1%
51 - 80%	120,876	202	95,215	92,250	35.7%
81 - 120%	181,314	119	149,579	149,900	21.0%
121% plus	-	72	251,756	225,500	12.7%
2001					
0 - 30%	46,716	66	31,494	33,750	10.0%
31 - 50%	77,860	141	65,941	67,000	21.4%
51 - 80%	124,576	243	97,187	95,000	36.8%
81 - 120%	186,865	130	149,253	148,000	19.7%
121% plus	-	80	263,149	236,250	12.1%
2002					
0 - 30%	47,549	41	33,897	35,000	7.4%
31 - 50%	79,248	105	66,404	67,000	18.9%
51 - 80%	126,797	209	102,151	101,500	37.7%
81 - 120%	190,195	120	152,961	151,000	21.6%
121% plus	-	80	257,021	240,000	14.4%
2003					
0 - 30%	46,716	79	28,440	28,890	10.6%
31 - 50%	77,860	129	63,082	63,000	17.2%
51 - 80%	124,576	309	98,105	97,000	41.3%
81 - 120%	186,865	140	146,784	145,000	18.7%
121% plus	-	91	257,743	239,000	12.2%
2004					
0 - 30%	47,919	75	34,556	35,000	9.6%
31 - 50%	79,865	153	64,019	63,000	19.6%
51 - 80%	127,783	295	102,825	103,400	37.8%
81 - 120%	191,675	156	151,887	147,580	20.0%
121% plus	-	102	303,179	273,000	13.1%
2005					
0 - 30%	47,919	53	33,928	35,000	6.6%
31 - 50%	79,865	134	65,295	65,000	16.7%
51 - 80%	127,783	296	105,371	107,000	37.0%
81 - 120%	191,675	201	154,996	154,000	25.1%
121% plus	-	117	293,451	264,900	14.6%
2006					
0 - 30%	47,086	62	34,665	35,000	7.2%
31 - 50%	78,477	109	64,856	66,250	12.6%
51 - 80%	125,563	332	104,263	107,000	38.5%
81 - 120%	188,345	211	152,954	151,000	24.5%
121% plus	-	148	269,335	246,250	17.2%
2007					
0 - 30%	48,196	48	34,390	34,000	5.6%
31 - 50%	80,327	135	66,968	68,000	15.8%
51 - 80%	128,523	301	108,748	110,000	35.2%
81 - 120%	192,785	237	155,828	154,500	27.7%
121% plus	-	135	307,078	273,500	15.8%

Source: HUD; Warren County PVA; RERC

[1] Housing price is based on HUD's area median household income (AMI) for each year. Price calculation assumes a 6.75% interest rate; 100% financing; Payments include taxes, insurance and PMI

Figure 5-3 illustrates single family sales between 2000 and 2007 by the number of homes affordable by each affordability threshold.

Figure 5-3: Distribution of single family sales by affordability threshold, 2000-2007



Source: HUD; Warren County PVA; RERC

6.0 FUTURE HOUSING DEMAND

Future housing demand is simply a comparison between population change in the future and expectations of household size and make-up. The analysis also adjusts the housing units in demand to account for units lost from year to year resulting from demolition or land use change from residential to commercial or other land use.

Based on population data presented in Section 3.0, Table 6-1 illustrates the projected households from 2000 through 2030. Between 2000 and 2005, population growth within the city created the demand for more than 1,200 housing units. An additional demand for 1,500 units is anticipated to be created between 2005 and 2010. The average annual increase between 2005 and 2010 is approximately 302 units. Between 2008 and 2030, household population growth may create an estimated 7,300 new households within the city. Applying the 10 percent vacancy rate reported by the U.S. Census Bureau and adding a 5 percent adjustment to account for net housing unit losses, more than 8,300 new housing units would be needed to meet the demand of all new households by 2030.

Table 6-1: Household demand estimated, 2000 – 2005, and projected demand, 2010-2030

	2000	2005	2010	2015	2020	2025	2030
Total Population	49,296	52,256	56,068	59,994	64,267	68,996	74,204
(less) Group Quarters Population	(5,489)	(5,820)	(6,246)	(6,677)	(7,148)	(7,676)	(8,258)
Total Population In Occupied Households	43,807	46,436	49,822	53,317	57,119	61,320	65,946
Households by Age of Householder							
15 to 24 years	2,990	3,169	3,376	3,562	3,799	4,102	4,429
25 to 34 years	3,776	3,993	4,367	4,747	5,035	5,317	5,689
35 to 44 years	3,445	3,651	3,838	4,046	4,414	4,808	5,110
45 to 54 years	3,090	3,276	3,617	3,901	4,098	4,322	4,716
55 to 64 years	2,174	2,308	2,526	2,829	3,124	3,369	3,536
65 to 74 years	1,906	2,027	2,073	2,177	2,385	2,672	2,962
75 or over	1,896	2,025	2,160	2,263	2,350	2,460	2,670
Total	**19,277**	**20,448**	**21,958**	**23,525**	**25,205**	**27,050**	**29,113**

Source: U.S. Census Bureau; RERC

While Table 6-1 illustrates the total estimated demand for new housing units, it does not present the *type* of housing units in demand by the community based on affordability. In the last five to ten years, significant increases in housing costs have increased the number of households meeting the "cost-burdened" criteria, defined as those households spending more then 30 percent of their income on rent or home-owner costs. Accordingly, Table 6-2 presents the number of households that are cost burdened by income threshold related to the AMI as reported by HUD.

Table 6-2: Households by cost-burdened and wage earners in 2008

				2008 Households		
Household Income as % of AMI	**Renter**	**Owner**	**Total**	**Non-earners**	**Earners**	**Total**
Less than 30%	14.4%	3.0%	17.3%	2,036	1,740	3,776
31% - 50%	5.8%	2.0%	7.8%	321	1,384	1,705
51% - 80%	1.9%	1.9%	3.7%	68	747	815
81% - 120%	0.0%	0.7%	0.8%	15	152	167
Greater than 120%	0.0%	0.3%	0.3%	7	65	72
Total	**22.1%**	**7.8%**	**30.0%**	**2,447**	**4,088**	**6,535**

Source: U.S Census Bureau; Claritas; RERC

Table 6-3 profiles those households defined as cost-burdened by the age of the householder and tenure. Nearly one-third of the total households in the city are cost-burdened, as defined by this analysis. It should not be a surprise that the majority of cost-burdened households are those in which the householder is between the ages of 15 and 24. This evidence is commensurate with the known population and household impacts brought forth by WKU.

Table 6-3: Cost burdened households by age and tenure, 2008

				2008 Households		
Age of Householder	**Renter**	**Owner**	**Total**	**Renter**	**Owner**	**Total**
15 to 24 years	7.8%	0.3%	8.0%	1,692	55	1,747
25 to 34 years	4.2%	1.0%	5.2%	916	223	1,139
35 to 44 years	3.0%	1.1%	4.1%	649	237	886
45 to 54 years	2.1%	1.9%	4.0%	462	411	873
55 to 64 years	1.6%	1.2%	2.9%	359	272	631
65 to 74 years	1.5%	1.6%	3.1%	336	346	682
75 and over	1.9%	0.8%	2.6%	412	165	577
Total	**22.1%**	**7.8%**	**30.0%**	**4,826**	**1,709**	**6,535**

Source: U.S Census Bureau; Claritas; RERC

Table 6-4 illustrates the total construction need between 2008 and 2030. If the City relies primarily on new construction to assist in increasing the affordable housing inventory, the construction needs by income through 2030 would require about 6,200, or 74 percent, of housing units with prices or rents affordable to households at less than 120 percent of the AMI. These households would be distributed as follows:

- Approximately 22 percent of new housing units would be required to be affordable to households at less than 30 percent of the AMI
- 14 percent would be required to be affordable for households between 31 and 50 percent of the AMI
- 21 percent would be required to be affordable for households between 51 and 80 percent of the AMI
- Households between 81 and 120 percent of the AMI would require approximately 17 percent of new housing units

The remaining 26 percent of new construction would be built for those households with more than 120 percent of the AMI.

In addition to the 6,200 housing units in demand by the new population whose household income is less than 120 percent of the AMI, there are current supply deficiencies that should also be considered. For purposes of this analysis, supply deficiencies were defined as households spending more than 50 percent of their household income on housing costs. In 2000, over 14 percent of the total households were spending more than 50 percent of their household income on housing or rent costs. This represents over 1,800 renter-occupied units and over 600 units occupied by the unit's owner that were severely cost burdened household. The final demand for affordable units must also take into consideration turn over of these units. For example, as these severely cost burdened households move into a more affordable unit, their previous unit is then available as a more affordable option to another household. In effect, between 7,500 and 8,500 units targeted towards households earning less than 120 percent of the AMI are in demand within the city by 2030.

Table 6-4: Construction need by income threshold, 2008-2030

	2008	2010	2015	2020	2025	2030
Total Households	21,809	21,958	23,525	25,205	27,050	29,113
Vacancy rate	15%	15%	15%	15%	15%	15%
Total Housing Units	25,080	25,251	27,053	28,986	31,107	33,479
Change from 2008		171	1,973	3,906	6,027	8,399
New Housing Units by % of AMI						
Less than 30%		38	435	861	1,329	1,852
31% - 50%		24	274	543	838	1,168
51% - 80%		35	405	801	1,237	1,723
81% - 120%		29	336	665	1,026	1,430
Greater than 120%		45	523	1,035	1,597	2,226
Total (cumulative)		171	1,973	3,906	6,027	8,399

Source: U.S Census Bureau; Claritas; RERC

Estimated construction for new housing units by household type through 2030 may require nearly 5,000 units to support family households and 3,400 units to support non-family households (see Tables 6-5 and 6-6).

Table 6-5: Construction need for family households by income level, 2008-2030

	2008	2010	2015	2020	2025	2030
Total Households	12,111	12,387	13,276	14,221	15,262	16,431
Vacancy rate	15%	15%	15%	15%	15%	15%
Total Housing Units	13,928	14,245	15,267	16,354	17,551	18,896
Change from 2008		317	1,340	2,427	3,624	4,968
New Housing Units by % of AMI						
Less than 30%		59	248	450	672	921
31% - 50%		42	177	321	479	656
51% - 80%		68	288	521	778	1,067
81% - 120%		65	276	500	747	1,024
Greater than 120%		83	350	634	948	1,299
Total (cumulative)		317	1,340	2,427	3,624	4,968

Source: U.S Census Bureau; Claritas; RERC

Non-family households are estimated to represent a disproportionate share of households at less than 50 percent of the AMI. By 2030, growth in new housing units supporting non-family households at less than 50 percent of the AMI account for 25 percent of the total demand compared with 19 percent among family households. This share of non-family households with very low incomes relative to the AMI is expected given the city's proportion of younger residents attending post secondary education within the city.

Table 6-6: Construction need for non-family households by income level, 2008-2030

	2008	2010	2015	2020	2025	2030
Total Households	9,698	9,568	10,245	10,980	11,787	12,684
Vacancy rate	15%	15%	15%	15%	15%	15%
Total Housing Units	11,153	11,003	11,782	12,627	13,555	14,587
Change from 2008		(150)	629	1,474	2,402	3,434
New Housing Units by % of AMI						
Less than 30%		(58)	245	574	935	1,336
31% - 50%		(34)	145	340	554	792
51% - 80%		(29)	121	285	464	663
81% - 120%		(14)	60	141	230	328
Greater than 120%		(14)	58	135	221	316
Total (cumulative)		(150)	629	1,474	2,402	3,434

Source: U.S Census Bureau; Claritas; RERC

Tables 6-4 through 6-6 summarize the distribution of new construction sales prices and present potential policy initiatives relying only on "new" construction to help alleviate the city's concern for housing affordability. In practice, however, it is unreasonable to place the burden of increasing housing affordability on new construction alone. Older for-sale residential product and rental units also provide a means to mitigate deficient affordable housing options in the city. For example, as new homes are built, current residents living either in units they own or rent move into a newly constructed housing unit that is also more expensive than their previous unit. The newer more expensive product is absorbed and the older more affordable housing unit becomes available which, in turn, increases the inventory of affordable housing options in the city.

To illustrate the impact of new construction on average sales prices, Table 6-7 summarizes all single family residential sales from and compares the total sales to sales of new housing units, defined as units built between 2002 and 2007. Over one-quarter of all housing units sold in 2007 were new units. Nearly one-half of the housing units sold for more than $300,000 were new housing units.

Table 6-7: Comparison between total 2007 sales and sales of new units

	Total 2007 Sales	Sales of Units Built Between 2002 & 2007	% Built Between 2002 & 2007
Less than $50,000	51	0	0%
$50,000 to $74,999	98	0	0%
$75,000 to $99,999	115	7	6%
$100,000 to $149,999	325	116	36%
$150,000 to $199,999	137	50	36%
$200,000 to $249,999	48	12	25%
$250,000 to $299,999	26	10	38%
$300,000 or more	56	27	48%
Average sales price	$ 143,045	$ 177,074	

Source: Warren County PVA; RERC

Further distinguishing the pricing differences between new units and older units, Table 6-8 presents a comparison between new and old home sales from 2007. This snapshot of

one year's sales illustrates the difference between price points of older homes and newer homes. Based on sales from 2007, older homes represented nearly 85 percent of the total homes affordable to households earning less than 80 percent of the AMI.

Of the newer homes built, less than 1 percent was affordable to households earning less than 50 percent of the AMI. 68 percent of the newer households were affordable to households earning more than 80 percent of the AMI, and approximately 30 percent of the newer homes sold affordable to households earning between 51 and 80 percent of the AMI.

Table 6-8: Distribution of units sold in 2007 by affordability threshold and year built

Built Year	Maximum House Price [1]	# of Sales Reported	Avg. Price	Median Price	% of Total Sales
Old Houses (built prior to 2002)					
0 - 30%	$ 46,716	47	$ 32,587	$ 32,000	5.49%
31 - 50%	77,860	119	63,128	64,500	13.90%
51 - 80%	124,576	209	99,399	100,000	24.42%
81 - 120%	186,865	162	145,223	141,275	18.93%
121% plus		98	275,713	238,625	11.45%
New Houses (built between 2002 and 2007)					
0 - 30%	$ 46,716	0	$ 31,494	$ 33,750	0.00%
31 - 50%	77,860	1	65,941	67,000	0.12%
51 - 80%	124,576	69	97,187	95,000	8.06%
81 - 120%	186,865	96	149,253	148,000	11.21%
121% plus		56	263,149	236,250	6.54%

Source: HUD; Warren County PVA; RERC

[1] Housing price is based on HUD's area median household income (AMI) for each year. Price calculation assumes a 6.75% interest rate; 100% financing; Payments include taxes, insurance and PMI

Many communities have overestimated the negative impacts that new homes sold at market rate have on housing affordability. As such, these communities have created policies to regulate new construction in an effort to use new homes as the main tool to help relieve housing affordability concerns. Rather than requiring new home prices to be distributed based on affordability, the City can create a number of policy initiatives to help bridge the affordability gap for low- to moderate-income residents. Some of these policy initiatives may apply only to new construction, such as tax credit multifamily communities while others rely on a combination of policy initiatives and incentives to either the home builder or the renter/buyer. Many of these are profiled in Section 7.0.

7.0 FACTORS AFFECTING AFFORDABLE HOUSING

The literature on affordable housing identifies an extraordinary range of issues which are barriers to such housing financially, practically and politically. Without detailing the many findings of previous studies, a few principles or issues are worth noting in the present case because they are so badly misunderstood or so simply addressed through policy.

7.1 Land Cost

Across the country, the recent increases in land prices are among the largest constraints to affordable housing. Even in the short run, any adjustments to land prices seem unlikely to alter the imbalance between land and other costs as the major influence in total housing costs. As a practical matter, land costs should be among the most responsive to economic disturbances such as we are now experiencing but they are based on perceptions about each parcel's compelling attributes. In effect, land, rather than viewed in the context of many competing parcels, is usually treated by its owner as a unique asset so the price is rigidly set or moves downward very slowly. National studies argue that the supply of land has not kept pace with the demands for housing making it relatively unlikely that today's immediate economic pressures will force land prices to slide rapidly. Given that land prices are relatively inelastic, it then becomes imperative that land resources be better allocated so that land prices can be mitigated as a direct barrier to affordable housing.

In Bowling Green, land prices have not increased dramatically over that past several years. That said, land prices will increase as more land is used for development, creating less supply within the city limits. While land outside Bowling Green limits may *seem* available for development, county regulations may prohibit or make it difficult to develop on these lands.

7.2 Housing Density

Concerns about housing density are among the most powerful barriers to implementing an affordable housing program, especially in environments where the supply of adequately zoned or entitled land may make it difficult to secure needed permits or approvals. The resistance to higher density is typically predicated on concerns about traffic, school impacts and potential loss of property valuations to cite several claims. Such claims are the classic rejoinders to rejecting development conceived as incompatible and less desirable despite other policy considerations.

Still, study after study concludes these claims are almost universally without merit while also suggesting that the most immediate and potent ways of realizing an increase in the affordable inventory is a focus on available land resources. Although increased density by itself cannot assure housing affordability, it does allow land costs to be shared by more units so that the burden is more broadly distributed.

Although land is usually priced by the unit, the total price exists on a curve such that the average cost per unit inclines with higher density. That said, higher density by itself does not solve all housing affordability issues. As densities become sufficiently high to necessitate certain construction techniques and to warrant structured parking, they can preclude the seeming cost savings that increased densities might otherwise have. Ultimately, the most beneficial density depends on market demands, local codes, construction requirements and other factors. As a practical matter, affordability strategies will erode if higher densities can only be realized in buildings reaching seven or more stories.

In effect, local codes and/or design standards promote low density housing, and they do so at a great cost to housing affordability. Typically, these requirements occur in conjunction with minimum size requirements for residential structures either imposed

through the ordinance or the developer of a specific property. Strategies to impose minimum standards in low density settings are implicitly a form of exclusionary practice that cannot be sustained only on claims of demographic changes.

Although new housing designs showcase the advantages of the smaller home, data collected over decades point to increasingly larger as well as increasingly more expensive homes which are no longer just basic shelter. In 1950, the average new home contained about 850 square feet and included two bedrooms and a single bath. Astonishingly, the average family of about four people managed to function in this space. Today, the average new home is more than 2,000 square feet and usually has two or more bathrooms and three or more bedrooms.

A bonus given for voluntary efforts to supply more affordable housing will prove useful only when the density otherwise allowed is sufficiently low to induce the value of the added density. On the other hand, this strategy directly circumvents the advantage of overall higher densities without special performance criteria. Options permitting improved density generally without the need for bonus units are to be preferred. Should bonus densities be used for any reason, they must be responsive to market demands, local codes, construction requirements and other factors so that they have an economic value in concert with the value of the additional units.

If the goal of a specific policy is to promote density – making housing production more efficient and distributing greater land costs over the available unit count, thus enabling lower overall prices – should policy be something else? The question, of course, is rhetorical but it focuses attention on the disconnects among stated objectives, community intentions, planning policies generally, zoning specifically, subdivision regulations, building codes, and fundamental economics dictated by personal expectations and demands imposed by the market.

7.3 Infill Policy

It is not without some irony that infill housing construction will often be more costly than greenfield development because of the typical need to address site configuration or size, site conditions and failing or inadequate existing infrastructure. In the case of well located sites, the costs can be materially higher even with appropriate density. The higher costs point to the need to use other tools to defray these costs either by supporting the householder or the developer recognizing the conduit for assistance has implications for the character and quality of the product and the financial structure of the undertaking. Given to the householder, the choice and location of housing options are controlled by the family or individual. Given to the developer, the market does not choose which projects are financially feasible and impacts prices uniformly across all units.

7.4 Relationship Between Public and Private Entities

The idea that public and private entities can work together is not a new one but recently public-private partnerships are being advocated almost without qualification. Whatever the opportunities to apply a public-private partnership, all situations are not equally amenable to the device. A complete understanding of risk, reward and incentives must underlie every partnership to extract the desired performance, but the values attached to each of these leverage points varies substantively between the public and private

sectors. Achieving balance in a way which allows a reasonable return, while not surrendering any perceived public interests and control, emerges as a primary challenge to selecting the right project and most suitable model so it is essential to understand the implications of varying approaches and solutions.

It is apparent that private capital is readily embraced as a solution to housing problems without a complete understanding of the limitations or the need to exercise some restraint. Private capital absolutely has its limits, and it will not flow in equal measure to every project or housing opportunity. Even in the more successful situations, there are often miscalculations about potential outcomes. Among the inadequately explored considerations are the time commitments, the initial planning and budgeting which must occur in any case, the experiences of the potential partners, and the relatively moderate controls to assure accountability and performance. Where projects have been pushed with the greatest speed and urgency, their flaws have become apparent in a relatively short term so the claims of efficiency are somewhat overstated.

7.5 Inclusionary Housing

Inclusionary policy initiatives are generally imposed on residential development in the form of a requirement for some percentage of total units meeting established qualified income targets and can include voluntary or mandatory programs. Both the voluntary and mandatory programs can, and often do, include the opportunity for bonus development through greater density or intensity than would otherwise be available with existing land use and zoning regulations. This type of provision is intended to mitigate the potential loss of income (profit) from providing lower than market priced units that bear construction cost comparable to market rate units. These programs further target both owner- and renter-occupied housing and generally provide the development community with options to build on- or off-site or make a payment in lieu to meet these inclusionary requirements for mandatory programs.

An additional perceived benefit of inclusionary programs, aside from simply increasing the supply of affordable or workforce units, is the residential integration of economic and racial groups that are sometimes currently segregated due to housing costs. Inclusionary programs are believed to 1) ameliorate existing economic and racial imbalances, 2) provide access to better employment and educational opportunities to lower income households, and 3) potentially end cycles of poverty. Inclusionary programs are frequently adopted in the context of public policy and comprehensive planning initiatives. As a result, these types of programs generally have no empirical basis for the establishment of the optimal percentage of affordable units other than minimizing the potential financial burden on residential development.

7.6 Linkage Fees

Mitigation policy initiatives, with linkage fees among the most prevalent examples, are generally imposed on non-residential development as a condition of approval. Requiring these types of projects to mitigate their creation of demand for affordable or workforce housing is based on accommodating the growth of new low-wage employment that contributes to low-income households. The premise extends from the perceived relationship among non-residential development, population growth, employment, household incomes, and demand for housing, both affordable and market rate. These

programs also target both owner- and renter-occupied housing and generally provide options of providing qualified housing in lieu of paying the fee.

Mitigation requirements function like traditional impact fees which extract a payment commensurate with the requirement to provide public infrastructure to serve new development or growth. As a result, mitigation requirements should be based on an empirical analysis to establish a “nexus” between new non-residential development and the need for affordable housing, at least in order to avoid potential legal challenges. There should be a reasonably demonstrated connection between the "need" for additional public facilities and new residential or non-residential development and that the fee payer will "benefit" as a result of the fee. Finally, the calculation of the fee must be based on a proportionate "fair share" formula.

7.7 Regulation

The cost of regulation is difficult to estimate but will vary widely across jurisdictions. Bowling Green and Kentucky are likely to have certain failed permitting and regulatory systems that need to be improved. That said, the administrative and regulatory environment seem to be minor constraints as also suggested by the Affordable Housing Task Force which focused its efforts on local regulatory issues.

Addressing affordable housing requires multiple approaches, most of which are necessary to approach the problem together rather than independent of each other. Viewed in terms of a continuum, revisions to the land development regulations and zoning codes may be the least intrusive changes but among the most difficult to implement. Rethinking barriers to more inclusionary housing might focus on the prevalence of new subdivisions containing unnecessarily large lots. A strategy encompassing either inclusionary or mitigation measures may be the hardest to implement because of their *seeming* added costs to the housing and real estate industries. Direct capitalization of targeted efforts seems to be the means most preferred because it forces private developers to compete for the dollars that might be available. At least for the next one to two years, these dollars might be used to acquire or advance a substantial number of more affordable units. Because of claims that adequate sites do not have the needed infrastructure to support affordable housing, it is rational to identify areas where substantial public and other lands might be used for this kind of housing. These areas would have a priority for expansion of water and sewer subject to satisfying certain housing goals.

7.8 Implications for the City of Bowling Green

The City is not known for intrusive regulatory measures limiting affordable housing offerings. In fact, HUD recently acknowledged the City as one of the few cities within the country creating a more inviting regulatory environment for providing affordable housing to its residents. That said, Bowling Green is not without its challenges when attempting to realize goals to provide more affordable housing to its low and moderate income population.

Available land for residential development seems to be a major concern among developers of residential product. The perception of the lack of land is the result of several different issues. The first is zoning. It is quite common in communities around the country that existing residents are generally not accepting of a proposed

development near their neighborhood, especially if that proposal includes affordable housing. The negative connotations associated with the term affordable housing are not likely to go away and therefore may require those interested in pursuing more affordable options to become creative in their description of these projects. Other communities facing similar challenges have encouraged public participation in the comprehensive planning process and the creation of a future land use plan to help mitigate this type of NIMBY (not in my backyard) attitude. This not only helps educate the city's residents but also creates a plan by which the City can use as a guide in future development decisions.

A future land use plan and map would also assist in making decisions regarding the dilemma of greenfield versus infill development. Within the city's corporation limits much of the land has already been developed, leaving few opportunities for the development of new residential communities. While the City encourages infill development there are few incentives available for the private sector to undertake this more expensive and time consuming type of development. Such incentives may include the City purchasing land and reselling it to an approved developer at a discount price or other public-private partnerships that are mutually beneficial to the City and the developer.

Without proper incentives in place these developers may simply opt to pursue development opportunities outside city limits and in the surrounding areas, such as unincorporated Warren County or other neighboring counties, where policies and regulations are more conducive to greenfield development. While new development on greenfield sites within the city may be less expensive to develop at this time, it may not be consistent with the community's goals as set forth in the City's comprehensive plan.

Another option to increase developable land is through annexation. Annexation is popular in some communities because it is recognized as an "easy" method for increasing property tax revenue for the City and school system. Annexation can be costly for communities when important infrastructure, such as water, sewer or transportation is non-existent or insufficient to meet the demands of new development. The City should only consider this option if the terms of the annexation are consistent with the community's goals for growth and sufficient analysis has been conducted on the costs and benefits of the proposed annexation.