



Estimating Supply and Demand in Your Local Housing Market: A Housing Gap Analysis

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“Adequate housing is essential in supporting economic growth. To attract new businesses or industry, a community should be able to house new workers moving into the community.” (Daniels et al., 1995.)

The issue of sufficient affordable housing affects many Nevada communities, where housing is more than an issue of providing shelter; it is an economic development issue. Numerous rural economic strategic studies have found that the lack of housing creates an obstacle for current and future economic growth. Local economic development authorities would like to attract new industry into the area, but the question becomes, “Where will the potential employees live?” Smaller communities envision themselves as a haven to the growing number of retirees in the state, but often realize that their community has no place to house these retirees. Clearly, the issue of adequate housing is one that must be addressed before successful economic growth can take place in Nevada’s smaller communities.

Beyond being a component necessary for economic growth, a healthy housing market can be an important *source* of economic growth. For instance, the development of rural housing creates jobs for those already living in the area and attracts new workers into the area. As those workers spend their wages and building supplies are purchased, the local economy will likely experience an upswing. In addition, the purchase of a new home also tends to be followed by the purchase of moving services, new appliances, home furnishings, lawn care items, and do-it-yourself

home improvement products. This can definitely provide an economic boost to area retailers. This activity may be followed by a “ripple” effect in which the prosperity of local business owners and their employees allows them to purchase more from the local economy.

This fact sheet outlines the necessary steps associated with creating a housing development strategy. In this fact sheet, special attention is paid to one of the most daunting tasks of housing strategy; this is the housing gap analysis. Housing gap can be defined as the difference between housing stock and projected demand for housing in the community.

Steps in the Housing Development Process

An anonymous author once said, “Even the longest journey begins with the first step.” The first step in community housing development is to become organized. The Iowa State Extension Service has identified seven steps associated with the housing development process:

1. Initiate the process; organize a housing task force.
2. Identify the major housing problems faced by the community and set some preliminary goals.
3. Develop a community housing profile including estimates of supply and demand.
4. Assess local housing needs. Analyze the data collected in Step 3 in light of community housing standards and goals.
5. Set public policy goals and objectives.

6. Prepare housing strategies and housing action plans.
7. Implement, monitor, and evaluate your progress.

The one step that may be the most overwhelming to community volunteers is the estimation of local housing demand and supply, and subsequent housing gap analysis. In fact, many volunteers may believe that they are incapable of performing such an analysis. The purpose of the following sections of this fact sheet is to provide an easy to follow methodology for estimating housing supply and demand and to complete the housing gap analysis. The methodology is fairly straight forward. A detailed analysis for Lander County and White Pine County are described in University Center Technical Publications (Harris and Bonnenfant, 2008; Harris, Bonnenfant and Davis, 2008).

Housing Demand in Lander County

The following section discusses the estimation of housing demand in Lander County. Primarily by using Bureau of Census data, the demand for housing can be estimated. First, it will be assumed that average persons per household will remain constant at 2.73. In addition, even though the Census publishes population estimates at the county level for these years, there is no estimate of group quarters. In 2000, 86 persons, or 1.5 percent of the population lived in group quarters. Therefore for the future, group quarters estimate will be assumed to be 86. This value can be changed if better estimates are obtained.

Projections of housing demand for the community in 2000 and 2007 may also be developed by applying the same methodology to U.S. Census projections of county population. Using this technique, Lander County was estimated to have a demand for 3,758 housing units in 2000. This declined to 2,395 in 2007 due to the decline in population estimates for Lander County for 2000 to 2007.

By using Census data to estimate demand for housing, community leaders can at least obtain a view of their housing market. One further recommendation however, is to make the analysis more realistic by consulting with major employers in the area. Many employers may have a good idea about how many of their employees live in the

city and county and how many commute a considerable distance. These employers may be able to estimate an additional demand for housing among their own employees who would not otherwise be counted in the estimate because they do not live in the city or county.

Estimating Housing Demand

Some basic data collection is necessary before housing demand can be estimated. Initial data can be collected from the U.S. Census web site (www.census.gov) or at the State of Nevada Demographer web site (http://www.nsbdc.org/what/data_statistics/demographer/pubs/). The following information is required:

1. U.S. Census and Nevada State Demographer population estimates for Lander County for 2000 to 2007.
2. U.S. Census and Nevada State Demographer population projections for the county.
3. U.S. Census and Nevada State Demographer estimated population in group quarters for 2000.
4. U.S. Census and Nevada State Demographer estimates of average persons per household for the community in 2000.

For example in 2000, Lander County had an estimated population of 5,794; however, 86 lived in group quarters (Nevada State Prison). Thus, the actual population to be housed in 2000 was 5,708. The average persons per household in Lander County in 2000 were 2.73. Thus, the number of households in Lander County can be found by dividing the population to house (5,708) by the average persons per household (2.73). Estimated number of households in Lander County in 2000 was 2,091.

According to Census data, the state of Nevada averages 0.908 households per housing unit. Literally less than one household lives in one housing unit. This is a statistical idiosyncrasy stemming from the fact that people and households are counted separately from housing units in Census years. Applying this ratio to the calculation of housing demand maybe optional, and could increase the housing demand estimate.

Applying the ratio of 0.908 households per housing unit to the number of households in Lander County generates the preliminary housing demand for Lander County in 2000. Specifically, 2,091 households divided by 0.908 households per housing unit equals 2,303 housing units. In addition, a recommended four percent vacancy rate may be added to preliminary demand to produce the estimated demand for housing in Lander County. In 2000, the estimate was 2,395 (2,303 times 1.04).

The four percent vacancy rate is suggested by a referenced study from Iowa State University (Knox, 1995). The vacancy ratio is used because in an efficient housing market, prospective buyers should be met with a variety of choices of units so that they might choose which one, if any, best suits their needs. This four percent vacancy rate is a variable over which community leaders in Lander County have control. If the county has declining population rates, the four percent vacancy rate maybe too high and the rate could be decreased. From these housing supply and demand estimates, a gap report on local housing in Lander County can be estimated.

For projections of housing demand, the State of Nevada Department of Employment, Training and Rehabilitation projects employment for counties. From past data, Lander County has 2.77 persons per employee. For the Lander County estimation, an employment vacancy value was calculated. For this analysis, 200 jobs are designated as employment vacancies. These are existing jobs that are vacant, jobs associated with projects under construction and jobs associated with expansion projects that have been postponed due

to workforce issues. The employment vacancy value of 200 was calculated from discussions with Lander County area employers. All factors and data discussed in this section were used in the housing gap analysis.

Housing Supply

This section will discuss housing supply and other characteristics in Lander County. The U.S. Census supplies much of the housing information for county-wide analysis. From Table 1, the number of houses built by year is of interest. Given the rapid growth in Clark County and Washoe County, Nevada, most housing in the state of Nevada has been built since 1970. Between 1970 and 1990, 60 percent of Lander County's housing stock was built as compared to 40 percent and 39 percent, respectively, for the state of Nevada and the nation.

Gap Analysis

Table 2 shows data employed for the housing gap analysis. These data will be used in a spreadsheet program to complete a gap analysis of housing in Lander County. For estimation of supply, HUD defines substandard housing as houses with incomplete kitchens or plumbing facilities. For our analysis, the data set used for substandard housing was those units that use coal, wood or "other" sources for heat. It was estimated that 129 uninhabitable homes existed in Lander County. Other approaches to determine uninhabitable units could be used for housing gap analysis such as homes built before 1970. Also it is assumed that available housing stock in Lander County is the Census 2000 value of 2,780. The housing study data can be updated as data is available. From

Table 1. Years Structures Built; U.S., State of Nevada and Lander County.

Years Built	United States		Nevada		Lander County	
	Count	%	Count	%	Count	%
1999 to March 2000	2,755,075	2.4	39,025	5.20	9	0.3
1995 to 1998	8,478,975	7.3	152,578	20.31	329	11.8
1990 to 1994	8,467,008	7.3	124,635	16.59	233	8.4
1980 to 1989	18,326,847	15.8	157,516	20.97	812	29.2
1970 to 1979	21,438,863	18.5	145,920	19.43	870	31.3
1960 to 1969	15,911,903	13.7	71,646	9.54	277	10.0
1940 to 1959	23,145,917	20.0	47,712	6.36	155	5.6
1939 or earlier	17,380,053	15.0	12,131	1.61	95	3.4

Source: Census 2000 summary File 3 (SF3) – Sample Data.

Table 2. Factors Used in Housing Gap Analysis for Lander County.

Category	Values
Employment Vacancy	200
Place of Work Employment Capture	1.00
Population per Employee	2.77
Group Quarters Estimate	86
Average Persons per Household	2.73
Household per Housing Unit – NV	0.908
Vacancy Rate	0.04
Uninhabited Units	129

preliminary discussion with personnel at the State of Nevada Department of Employment, Training and Rehabilitation, it is assumed that employment from 2007 to 2009 will grow at 1.9 percent annually. Therefore, the employment in Lander County is estimated to be 2,862 in 2009.

Using factors in Table 2 and an assumed 1.9 annual percentage growth rate in Lander County employment, a housing gap analysis for Lander County is initiated. From Table 3, using an employment vacancy of 200 and an uninhabited value of 129, and assuming all place of work employees will live in Lander County, the housing shortage in Lander County is estimated to be 871 homes. Given that the housing gap analysis is a spreadsheet tool, if one assumes all houses built before 1970 to be uninhabitable in Lander County (527 houses), the housing shortage in Lander

County increases to 1,269. Also, if one assumes only 80 percent of people working in Lander County live in Lander County, the housing shortage in Lander County drops to 206. Homes include detached homes, condos, multi-family units, and mobile homes.

Table 3. Gap Analysis for Lander County for 2009.

Category	Values
Employees	2,862
Place of Work Employment Capture	1.00
Employment Vacancy	200
Employment Estimate	3,062
Population per Employee	2.77
Population Estimate	8,482
Group Quarter Estimate	86
Percent Population in Group Quarters	1.01%
Population to be Housed	8,396
Average Persons per Household	2.73
Number of Households	3,075
Household per Housing Units – NV	0.908
Preliminary Housing Demand	3,387
Vacancy Rate	0.04
Demand with Vacancy Rate	3,522
Housing Stock	2,780
Uninhabited Units	129
Available Housing	2,651
Housing Gap	-871

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