SECTION 3
Population

A Merriam Police Officer has a few moments with a group of neighborhood residents.

3.1 Introduction

Population is a key indicator of future development and vitality potential for a local community. Decline in the number of residents and changes to the age, gender, and general structure of the population directly impact the availability of public institutions (e.g., schools and churches), types of public facilities improvements needed (e.g., sewer or water), types of housing needed and the local economy (i.e., jobs and industries).

3.2 Population Trends

Johnson County, Kansas is a classic example of the type of metropolitan growth prevalent throughout the United States in the second half of the 20th Century. Johnson County's metropolitan growth exhibits three predominate growth types:

1. Rapid, high level growth exceeding twice the U.S. average;
2. Rapid, then slow growth as the availability of land and markets decline; and
3. Moderate growth cycles, followed by declines as development areas are annexed to growing towns.

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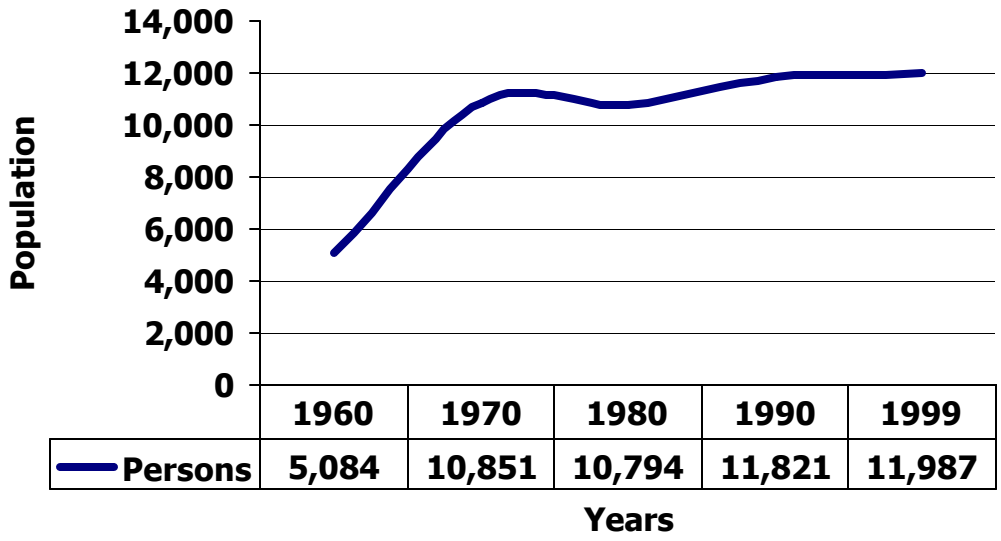
Merriam appears to be the type of small metropolitan city that experienced rapid growth during its early formation (first ten years after incorporation) and then quickly entered a cycle of slow development as the amount of land available for expansion continued to decrease. Figure 3-1 displays the growth cycle of Merriam from 1960 to 1990 and from 1990 to 1999 using estimated data from the U.S. Census and Claritis, Inc. The basic growth pattern over the 40-year cycle indicates very rapid growth during the first decade (1960 - 1970) followed by slow to marginal change for the remaining 30 years.

Figure 3-1
Merriam Growth Patterns



	1960	1970	1980	1990	1999
Persons	5,084	10,851	10,794	11,821	11,987

Merriam's Population at a Glance

*The 1999 population is estimated at 11,987.

*The median age of males & females in 2000 is estimated to be 36.5 years old.

A comparison of the data from the 1990 Census with the estimated growth for 1999 indicates that Merriam continues to experience marginal population change. The City's population is estimated to have grown from 11,821 to 11,987 persons during this 10-year period. The 1.4 percent growth rate change is considerably less than the estimated 7.4 percent for Kansas and the 9.4 percent for the United States as a whole but indicative of the lack of available vacant land in the City.

3.3 Age Groups

Population vitality is generally measured by an analysis of individual age groups. Table 3-1 below contains information about the ages of persons in Merriam from 1980 and 1990 and estimated data from 2000 and 2005. Ages are separated into four-year groups from birth to age 85 and over.

Table 3-1
Age-Cohort Data for Merriam 1990 - 1999

Age	**Males 1980**	**Females 1980**	**Males 1990**	**Females 1990**	**Males 2000**	**Females 2000**	**Males 2005**	**Females 2005**
0 - 5	**389**	**358**	**463**	**449**	**427**	**418**	**436**	**425**
5 – 9	316	311	384	390	405	402	398	386
10 - 14	349	350	363	320	352	370	384	392
15 - 19	461	434	286	304	275	293	355	376
20 - 24	477	596	353	426	164	144	161	143
25 -29	603	621	681	727	213	251	249	261
30 - 34	513	487	616	675	448	532	321	427
35 - 39	392	392	543	554	478	593	473	594
40 -44	310	297	445	430	622	650	554	598
45 - 49	279	305	311	348	533	540	486	585
50 - 54	277	316	259	281	431	453	492	490
55 - 59	284	311	244	260	343	336	422	444
60 - 64	219	239	203	246	239	314	326	336
65 - 69	153	179	225	256	207	227	238	297
70 - 74	104	118	137	185	204	219	205	232
75 - 79	48	115	87	111	140	209	164	199
80 - 84	34	72	51	100	126	191	117	183
85 +	24	61	18	90	84	154	87	169
Subtotal	5,232	5,562	5,669	6152	5,691	6,296	5,868	6,537
Total		10,794		11,821		11,978		12,405
Median Age		24		32.8		36.5		38.4
Source: Claritis, Inc. 2000; U.S. Census Bureau - Final Population Counts 1980 and 1990.								

A general profile of Merriam indicates that the population structure and ages are generally stable. The age groups are typical for a metropolitan area and are a reflection of Johnson County's vitality. The key changes are discussed below.

A shift in the number of person aged 15-29 over the 25-year period 1980-2005 is evident as shown in Figure 3-2. As an example, in 1980 about 11 percent of the total population were aged 25-29, whereas by 2005 only about four (4) percent of the population is expected to be in this age group.

The early middle and middle age groups (ages 35-54) are undergoing compression due to a transition in family structure and aging. Compression refers to "stacking" or a concentration of age groups. For instance, in 1980 the predominate age group in Merriam was concentrated from age 15 to age 34. In 2005, the concentration will be evident in the age groups that range from 35 to 50 years.

The number of children aged birth to 9 years has increased slightly. This is not expected since the number of women in the childbearing ages is decreasing. This may be due to high rates of in-migration of couples with children.

Persons aged 70 years and older are increasing at a significant rate. In 1980 the number of persons aged 70 years and older comprised about 5.2 percent of the population. By 2005, the persons aged 70 years and older will make up about 11 percent of the population of Merriam as shown in Figure 3-5. As a comparison, many rural Kansas communities will soon have 30 percent of their population in the 65 years and older category.

Finally, it is obvious that the entire population structure of Merriam is aging at about the same rate as Kansas as a whole. The median age, which was 24 years in 1980, is currently about 36.5 years and is expect to increase to 38.4 years by 2005. In Table 3-1 on page 3-3, the age groups that comprise the median age are shaded to show the steady process of aging over the 25-year period.

3.4 Household Data

The number of households and the size of households are typically determined by three critical factors:

1. Average income levels;
2. The rate of in and out migration within the individual age groups; and
3. Household size.

Since 1980, new household formation has exceeded the rate of population growth in the United States. New households are formed from an increase in average disposable income, greater numbers of youth in the 18 to 30 age groups, spousal separations and divorces, and the search for more appropriate housing by the elderly.

According to the 1990 Census, the total number of housing units in Merriam was 5,366. Using 1990 Census information, the estimated total housing units in Merriam is 5,300. For the planning purposes, the Johnson County Appraiser's data will be used. This number includes the removal of homes for Merriam Town Center and floodplain buyouts. The Johnson County Appraiser's Office indicates that there are 5,177 housing units as of February 2000. The census estimates the number of units based on the long form survey only given to 1 in 4 residents. The appraiser's data, on the other hand, is likely to be very accurate within a five percent plus or minus of the actual number so it will be used.

Table 3-2 contains estimates for new household growth from 2000 to 2020. The estimates are based on the following assumptions:

1. The current rate of family to non-family households remains constant throughout the projection period (80 percent family to 20 percent non-family);
2. Average income levels continue to grow at a rate of 26 to 40 percent per decade; and
3. The amount of available land for housing development will depress housing construction because of increasing prices as the supply of land reaches a critical level.
4. The amount of vacant land for residential development is 60 acres.

Table 3-2
New Households Projected from 2000 to 2020

Year (1)	**Current Density** 60% Single Family 40% Multifamily (2)	**Medium Density** 14 units per gross acre (3)
2000	5,177	5,177
2005	5,285	5,387
2010	5,393	5,597
2015	5,501	5,807
2020	5,609	6,017
TOTAL NEW UNITS	**432**	**840**

Table 3-2 shows that over the next 20 years, the total number of new housing units is projected to be between 432 and 840 depending upon the amount of density. If the current trend of 60% single family and 40% multi-family continues, development of the existing 60 acres of vacant residential land will produce 432 new housing units. If an increase density of 14 units per acre is desired, the development of the existing 60 acres of vacant residential land will produce 840 new housing units.

3.5 Projected Population Growth

Based on the available data, it would appear Merriam would reach its maximum housing growth limit within the next 20 years. This assumption is based on the current rate of growth, amount of available land for housing and jobs, and a marginal decrease in the median family size from 2000 to 2020. The amount of available land is an estimate drawn from the Johnson County Appraiser's Office maps. Only about 80 acres are currently vacant for residential use. Map 4-2 at the end of Section 4 Housing shows all vacant land including land currently

zoned residential. Those 80 acres, however, are split up into many parcels throughout the City. The City owns one of the larger parcels (19.05 acres), which is wooded and has a creek running through the middle of it. The City has designated this property to be open space and part of the Johnson County Trails program. Only about 20 other parcels of vacant residential land are greater than half an acre. There are almost a dozen properties in the very northwest corner of the City of Merriam that are currently categorized as single family use (one is used for agricultural purposes). Although these lots already have one or two houses on them, the parcels are big enough that they might one day redevelop into more dense residential subdivisions. Therefore, the total acres used for vacant land in the projections are 60 acres.

The current density population projection uses the following assumptions:

- Approximately 60 acres of vacant land will be available in the next 20 years for development;
- The current pattern of 60% single-family to 40% multifamily mix will continue; and
- The total number of persons per household will decrease to 2.2 on average.

Using these assumptions, it is estimated that Merriam's population will grow by 950 people in 20 years from an estimated 11,987 currently to 12,937 in 2020.

The medium density population projection uses the following assumptions:

- Approximately 60 acres of vacant land will be available in the next 20 years for development;
- The vacant land will develop at a higher density than the current mix (approximately 14 units per gross acre); and
- The total number of persons per household will decrease to 2.0 on average.

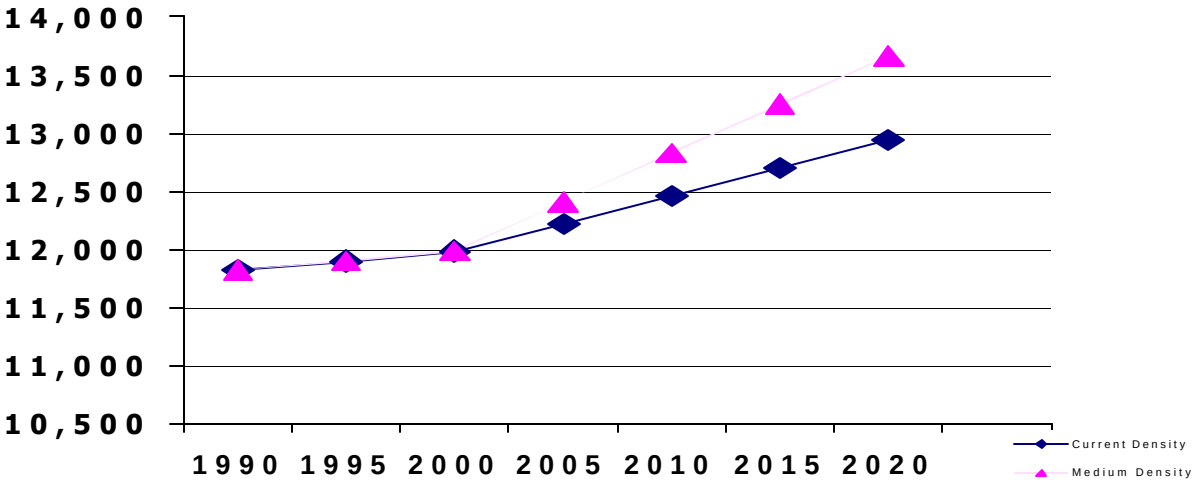
Using these assumptions, it is estimated that Merriam's population will grow by 1,680 people in 20 years from an estimated 11,987 currently to 13,667 in 2020.

Figure 3-2 illustrates the various population projections that can be assumed for the City of Merriam from 2000 to 2020 under all three options.

Table 3-3
Population Projections for 2000 to 2020

Year (1)	**Current Density** 60% Single Family 40% Multifamily 2.2 persons per household (2)	**Medium Density** 14 units per gross acre 2.0 persons per household (3)
1990	11,821	11,821
1995	11,900	11,900
2000	11,987	11,987
2005	12,225	12,407
2010	12,462	12,827
2015	12,699	13,247
2020	12,937	13,667
TOTAL INCREASE	**950**	**1,680**

Figure 3-2
Population Projections



Another method to project population is step-wise regression. This method is included in this section to compare the technique used above which only considers density, population per household trends and amount of available land to the step-wise regression result.

Given the fact that Merriam received its major growth from 1960 to 1970, entered a period of marginal gain and loss from 1970 to 1980, and was then followed by marginal gain from 1980 to 1999 (est.), another valid technique to project population is a step-wise regression. Step-wise regression uses data from 1980 onward to estimate the rate of change. If this assumption were valid, Merriam would reach a peak population of approximately 12,800 persons within 20 years. If age group data were to be used for the same projection, the decreasing household size and increasing median age would indicate that Merriam would reach peak population around 2010 with approximately 12,200 persons.

In summary, Merriam's population is projected to grow from the current estimated level of 11,987 to between 12,200 and 13,667 (estimated) by the year 2020.

3.6 Conclusions

Several conclusions can be drawn from an examination of Merriam's demographics. However, it should be implicitly understood that the rate of change in both growth and housing construction has undergone a significant transformation since 1980. Therefore, the estimates given for the year 2000 (which was used as a base year for projections) must be revised immediately when the current Census population figure are released in 2001. The estimates used for the year 2000 may be too high if a margin of error of + or - 5 percent is used.

Growth Rates

For all practical purposes, Merriam reached its population holding potential in 2000. Marginal changes can be expected over the next 20 years, but it is doubtful that the City will experience an overall decrease. It is also important to recognize that holding capacity is always based on density assumptions and that these assumptions are undergoing change as metropolitan areas seek a more compact form.

Population Composition

All age groups, the family and household size, and the number of elderly are increasing in Merriam. This change is proceeding at a normal rate and may in fact stabilize within the 20-year projection period as housing freed by the elderly reverts to younger, childbearing couples.

Housing

Housing needs are very difficult to project in the City of Merriam because of the amount of land remaining available for housing construction. Also, there appears to be little need for housing replacement in the City because of the relatively

young age of the housing base. If demand to relocate to Merriam remains high, new housing units will inevitably be created by infill and conversion to moderate density development.

Community Needs

The number of school age children should remain fairly constant over the projection period used for this section of the plan. Even though the City as a whole is aging, there are several valid reasons to assume that school needs will not decrease over time. First, it appears that both the in-migration of couples with young children and the natural fertility rate are quite strong. This may be partially due to couples delaying the onset of children until after age 28. Second, given the difficulties experienced in the Kansas City, Missouri school system, suburbs such as Merriam may pose a strong attraction to young couples searching for a viable and stable educational institution.

Although projections indicate that Merriam will not have a large elderly population for some time to come, there is nevertheless a need for appropriate housing in the 65+ age groups. Current thinking among demographers is that younger suburbs within the metropolitan areas will not experience truly major change in the number of elderly (1 - 5 persons aged 65 and over) until after the year 2015. However, this points to the need for current planning since both capacity and space for long term care and assisted care housing may be considerably diminished by this time.

Summary

Overall, two policy alternatives would seem to be viable for the City of Merriam. First, as the City quickly reaches its maximum growth limits, the decision-makers may wish to turn their attention to quality improvements in the existing infrastructure and services. Second, there is an opportunity to undertake programs related to compact development. Compact development, although based on density increases, does not lead to a decrease in the quality of life. Rather, it increases accessibility, creates more appropriate living styles for all ages, and is more attuned to "smart growth" than older suburban styles.

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