## Morris County Schools USD 417 K-12 Enrollment Projection Report



Jim Hays, KASB Research Specialist
January 10, 2014

# K - 12 Enrollment Projection <br> Morris County Schools USD 417 

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## Report Summary

Morris County USD 417 has several interesting and unique circumstances affecting its enrollment, especially the loss of $9^{\text {th }}$ grade students to other districts. That is rare in Kansas. Recently, first grade enrollments have exceeded previous resident live birth co-horts, indicating that several groups in the lower elementary grades include children whose parents did not live in Morris County when those children were born. Assuming both of these factors continue in a moderate fashion, total school district enrollment will remain about where it is for the foreseeable future.

KASB Enrollment Projection


## Population Trends in Kansas and in Morris County

The population of Kansas today is the smallest percentage of the total US population that it has been since the earliest days of statehood. We are less than $1 \%$ of our country. During the twentieth century, population growth in Kansas has never equaled the rate of growth in the country as a whole.


The population of Kansas has grown each census during the 20th century, except for the 1930s, when total state population declined from $1,880,999$ to $1,801,028$. In 1890 , we were $2.27 \%$ of the total US population and today we are less than $1.00 \%$.


Much of this lack of population growth is, of course, attributable to the rural nature of our state and the changes in the economic condition of rural America. Some of those changes have accelerated during the last half of the century.

Twenty-five (25) Kansas counties grew in population, as did the state as a whole, during the agricultural catastrophe of the 1980s but 80 counties lost population.

The 1990s were better for some areas of Kansas: 48 counties increased in population and 57 lost population. Of those 57 which declined, 12 counties lost more than $10 \%$ of their population during that decade.

In the ten years between the 2000 census and the 2010 census, only 28 Kansas counties grew in population. Of the 77 which declined, 23 lost more than $10 \%$ of their population.

Fifty-four Kansas counties ( $\mathbf{5 4}$ of $\mathbf{1 0 5}$ or $\mathbf{5 1 . 4 p e r c e n t ) ~ h a v e ~ l e s s ~ p o p u l a t i o n ~ i n ~ t h e ~ C e n s u s ~ o f ~}$ 2010 than they did in the Census of 1900 . Those counties appear in the map below.


As was previously mentioned, the kind of population trend illustrated above affects over half of the counties in Kansas. The "de-population" of the Great Plains is a continuing phenomenon. The Kansas map below illustrates when each county reached its peak population. Much of Kansas was at peak population at least two, sometimes three, generations ago.

Census Year of Maximum Population by Kansas County 1890-2010


Source: Institute for Policy \& Social Research; data from U.S. Census Bureau, Decennial Census.

The total resident population of Morris County is today less than half of what it was at its peak, a century ago.


For the past several years, population has continued to fall but at a much smaller rate of decline than throughout much of the last half of the $20^{\text {th }}$ century.


Population loss during the 1980s was largely attributable a net out-migration of people from the county. Fewer children were born during the decade than deaths were recorded, but total population declined by more than that factor alone. More people moved out of the county than moved in. The net effect of all these influences on population is called a "net out-migration". In Morris County during the 1980s a total of 846 resident live births were recorded (birth certificates issued for children born to parents listing a Morris County address, regardless of where the birth occurred) and 882 deaths were reported (death certificates issued for persons residing in Morris County, regardless of where the death occurred). With equal numbers of people moving in and out this should have decreased county population by only 36 residents instead of the population loss reported in the 1990 federal census of - 221 persons. This means that the net effect of people moving away was -185 . The following table displays this data:


The 1990s were more of the same for Morris County, in terms of migration patterns: slightly. Once again, more residents died than there were babies born to county residents; 64 more deaths than births. But total population decline was 94 persons. This means that a net total of 30 more persons moved out of Morris County than moved in.


The slight net out-migration dissipated to zero between the 2000 and 2010 census. The excess of 181 deaths over babies born to Morris County residents was the exact amount by which total population declined.


## Projection of Future Population Change

Population projections for Kansas, by county, are prepared by the US Census bureau and by the Center for Economic Development and Business Research at Wichita State University. ${ }^{1}$ These projections show an optimistic $16.2 \%$ growth in total state population from 2000 to 2030, and a $-2.3 \%$ population decline for Morris County during the same period. This may prove decidedly optimistic.



It may seem a board of education can do little to stem a tide of net out-migration in a community, or to increase net in-migration. Economic forces appear out of your control. However, access to education and health care, at acceptable levels of quality and quantity, are the two key elements for population mobility in rural counties in Kansas. Policy makers should keep those factors foremost in their minds as they ponder the question of just who wants to live here and how can we get them to want to live here? ${ }^{3}$


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## Resident Live Births, by Month

The following table shows resident live births by month for the years covered in this enrollment projection study. The data is presented in "years" (September through the following August) corresponding to the eligibility age for attending first grade. The first six years of this data is then compared to actual first grade enrollments in order to develop a relationship. Each year results in a ratio; put another way, what percent of the children born to county residents actually enrolled in first grade in the district? Those six ratios are averaged and that "mean ratio" is used with the last five years of birth data to predict first grade enrollments in the years projected by this report.

## Morris County

|  | $\mathbf{2 0 0 1 -}$ | $\mathbf{2 0 0 2}$ | $\mathbf{2 0 0 3 -}$ | $\mathbf{2 0 0 4}$ | $\mathbf{2 0 0 5}-$ | $\mathbf{2 0 0 6}$ | $\mathbf{2 0 0 7}$ | $\mathbf{2 0 0 8}$ | $\mathbf{2 0 0 9}$ | $\mathbf{2 0 1 0 -}$ | $\mathbf{2 0 1 1 -}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\mathbf{0 2}$ | $\mathbf{0 3}$ | $\mathbf{0 4}$ | $\mathbf{0 5}$ | $\mathbf{0 6}$ | $\mathbf{0 7}$ | $\mathbf{0 8}$ | $\mathbf{0 9}$ | $\mathbf{1 0}$ | $\mathbf{1 1}$ | $\mathbf{1 2}$ |
| September | 5 | 5 | 6 | 7 | 6 | 5 | 5 | 3 | 9 | 5 | 6 |
| October | 6 | 3 | 3 | 6 | 3 | 3 | 7 | 3 | 4 | 7 | 9 |
| November | 4 | 6 | 5 | 5 | 3 | 3 | 7 | 3 | 5 | 4 | 3 |
| December | 4 | 1 | 10 | 4 | 5 | 4 | 3 | 1 | 2 | 6 | 4 |
| January | 3 | 6 | 2 | 4 | 7 | 3 | 5 | 4 | 5 | 2 | 5 |
| February | 3 | 5 | 4 | 4 | 2 | 2 | 8 | 2 | 7 | 7 | 5 |
| March | 1 | 5 | 1 | 2 | 3 | 7 | 6 | 6 | 2 | 2 | 6 |
| April | 5 | 3 | 6 | 7 | 4 | 8 | 5 | 5 | 1 | 8 | 4 |
| May | 10 | 3 | 6 | 2 | 2 | 5 | 6 | 4 | 4 | 5 | 5 |
| June | 3 | 6 | 3 | 7 | 4 | 8 | 8 | 9 | 7 | 3 | 5 |
| July | 5 | 5 | 8 | 5 | 4 | 5 | 7 | 3 | 3 | 4 | 4 |
| August | 1 | 4 | 7 | 4 | 7 | 7 | 3 | 5 | 3 | 11 | 5 |
| Total | 50 | 52 | 61 | 57 | 50 | 60 | 70 | 48 | 52 | 64 | 61 |

The births listed here are resident live births; they do not include children born in the county to parents from elsewhere in the state, and they do include any children born elsewhere-even in another state perhaps-whose parents listed a home address in Morris County. For example: children born in Manhattan, but whose parents reside in Council Grove, are included here; children born in Morris County Hospital whose parents actually reside in Allen or Bushong, are not included here. This data is prepared from official birth certificate information obtained from the Kansas Department of Health and Environment. The department goes to great pains to reconcile birth certificate information with the home address listed for the parents, even exchanging information with similar agencies charged with health statistics recording in other states. Unfortunately, the data cannot be presented below the county level; for example, school district boundaries cannot be recognized by the data collection system. Postal zip codes could be used, but these boundaries frequently change in metropolitan areas, are not consistent over time, and do not match school district boundaries either.

## Actual First Grade Enrollments Compared to Resident Live Births

The first step of this enrollment projection technique is to develop a mathematical relationship between actual resident live births and first grade enrollments seven years later when those children have reached six years of age or more. Total resident live births from the previous table divided by the actual recorded first grade enrollments for the years when those children would have normally entered first grade and a ratio, expressed as a decimal number, is determined. That ratio is calculated for each year of six years, and then is averaged for the entire period. This process is shown below:

| Process for projecting first grade enrollment |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Birth Years | Total <br> Births | ```Ratio of 1st grade enrollment to births``` | Actual First Grade Enrollment | School Years |
| 2001-02 | 50 | 96.0\% | 48 | 2008-09 |
| 2002-03 | 52 | 92.3\% | 48 | 2009-10 |
| 2003-04 | 61 | 93.4\% | 57 | 2010-11 |
| 2004-05 | 57 | 101.8\% | 58 | 2011-12 |
| 2005-06 | 50 | 104.0\% | 52 | 2012-13 |
| 2006-07 | 60 | 121.7\% | 73 | 2013-14 |
| Average Ratio |  | 101.5\% |  |  |

The above "average ratio" is then multiplied by total resident live births for the county for the last five years for which data is available, in order to arrive at projected first grade enrollments for the next five years, upon which this enrollment projection is based. The following table shows how this average ratio is used:

| Birth <br> Years | Total Births | Average <br> Ratio | Projected <br> First Grade <br> Enrollment | School <br> Years |
| :---: | :---: | :---: | :---: | :---: |
| $2007-08$ | 70 | $101.5 \%$ | 71 | $2014-15$ |
| $2008-09$ | 48 | $101.5 \%$ | 49 | $2015-16$ |
| $2009-10$ | 52 | $101.5 \%$ | 53 | $2016-17$ |
| $2010-11$ | 64 | $101.5 \%$ | 65 | $2017-18$ |
| $2011-12$ | 61 | $101.5 \%$ | 62 | $2018-19$ |

This forecasting technique relies on first grade enrollments as a starting point, so overstating or understating those enrollments could present problems. On the above table it appears that the "market share" of children born to Morris County parents who enrolled in first grade in the district has varied somewhat over the past six years, and that there are significant numbers of children enrolled in the
lowest elementary grades right now whose parents did not live in Morris County when they were born. The highest ratio of first grade enrollments to previous resident live births is $121.7 \%$ (Fall 2013); the lowest is $92.3 \%$ (Fall 2009) and the mean or average is $101.5 \%$ for the six years.

The average of $101.5 \%$ of resident live births results in the projected first grade enrollments above. Using the lowest annual rate of $92.3 \%$ and the highest annual rate of $121.7 \%$ we can calculate the possible range within which foreseeable first grade enrollments will fall over the next five years.

Put another way, we can answer the question; "What will first grade enrollments be if the future is more like the lowest year, of the six years, than it is the average?" And, "What will first grade enrollments be if the future is more like the highest year, of the six years, than it is the average?"


For purposes of this projection we will use the six year average, but the Board should keep in mind that this may not represent the total potential for first grade enrollments. Close analysis of where some of the elementary students come from may reveal that these most recent two years do not represent the long term trend.

These first grade enrollments, for the five school years beginning with 2014-15, form the basis for the total enrollment projections for the district. The rest of the students involved in the five year enrollment projection are located somewhere other than first grade, and the projections of their total numbers are arrived at using a "co-hort survival technique" which is explained more fully in the next section of the report.

## Co-hort Survival Ratios; Calculations of Grade-to-Grade Retention

This enrollment forecasting technique relies on what statisticians call a "co-hort survival" method. The theory behind this type of projection is that relationships exist between the transition points in public school enrollment; students leave one grade and progress to another. If more students are enrolled in one grade one year than were enrolled in the previous grade the previous year, then students must have moved into the district. If the reverse is happening, if fewer students enroll, then students must be either moving out of the district or dropping out of public school.

The actual headcount enrollments for the district for the previous six years were analyzed and a "survival ratio" was calculated for each grade for each year. Then the ratios for each grade were averaged over the six year period. That average, or "mean ratio", is then used to calculate the projected enrollments beyond first grade for the following five years.

The table below shows the actual headcount enrollments for the entire district for the past six years, and the ratios calculated for each grade each year, as well as the average or "mean ratio" for the six years:

|  | $\begin{gathered} 2008- \\ 09 \end{gathered}$ | ratio | $\begin{gathered} 2009-10 \\ 10 \end{gathered}$ | ratio | $\begin{gathered} 2010- \\ 11 \end{gathered}$ | ratio | $\begin{gathered} \hline 2011 \\ -12 \end{gathered}$ | ratio | $\begin{gathered} 2012-13 \end{gathered}$ | ratio | $\begin{gathered} \text { 2013- } \\ 14 \end{gathered}$ | Average Ratio |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kindergarten | 56 |  | 59 |  | 61 |  | 50 |  | 72 |  | 66 |  |
| 1-K ratio |  | 116.7\% |  | 103.5\% |  | 105.2\% |  | 96.2\% |  | 98.6\% |  | 104.0\% |
| 1st grade | 48 |  | 48 |  | 57 |  | 58 |  | 52 |  | 73 |  |
| 1-2 ratio |  | 102.1\% |  | 104.2\% |  | 114.0\% |  | 94.8\% |  | 101.9\% |  | 103.4\% |
| 2nd grade | 63 |  | 49 |  | 50 |  | 65 |  | 55 |  | 53 |  |
| 2-3 ratio |  | 109.5\% |  | 98.0\% |  | 98.0\% |  | 98.5\% |  | 100.0\% |  | 100.8\% |
| 3 rd grade | 62 |  | 69 |  | 48 |  | 49 |  | 64 |  | 55 |  |
| 3-4 ratio |  | 104.8\% |  | 92.8\% |  | 112.5\% |  | 104.1\% |  | 89.1\% |  | 100.6\% |
| 4th grade | 62 |  | 65 |  | 64 |  | 54 |  | 51 |  | 57 |  |
| 4-5 ratio |  | 90.3\% |  | 101.5\% |  | 103.1\% |  | 90.7\% |  | 94.1\% |  | 96.0\% |
| 5th grade | 68 |  | 56 |  | 66 |  | 66 |  | 49 |  | 48 |  |
| 5-6 ratio |  | 95.6\% |  | 98.2\% |  | 103.0\% |  | 84.8\% |  | 93.9\% |  | 95.1\% |
| 6th grade | 57 |  | 65 |  | 55 |  | 68 |  | 56 |  | 46 |  |
| 6-7 ratio |  | 105.3\% |  | 106.2\% |  | 105.5\% |  | 89.7\% |  | 100.0\% |  | 101.3\% |
| 7th grade | 63 |  | 60 |  | 69 |  | 58 |  | 61 |  | 56 |  |
| 7-8 ratio |  | 98.4\% |  | 103.3\% |  | 104.3\% |  | 94.8\% |  | 98.4\% |  | 99.9\% |
| 8th grade | 58 |  | 62 |  | 62 |  | 72 |  | 55 |  | 60 |  |
| 8-9 ratio |  | 93.1\% |  | 90.3\% |  | 82.3\% |  | 88.9\% |  | 100.0\% |  | 90.9\% |
| 9th grade | 63 |  | 54 |  | 56 |  | 51 |  | 64 |  | 55 |  |
| 9-10 ratio |  | 100.0\% |  | 100.0\% |  | 103.6\% |  | 94.1\% |  | 100.0\% |  | 99.5\% |
| 10th grade | 55 |  | 63 |  | 54 |  | 58 |  | 48 |  | 64 |  |
| 10-11 ratio |  | 98.2\% |  | 112.7\% |  | 105.6\% |  | 93.1\% |  | 87.5\% |  | 99.4\% |
| 11th grade | 61 |  | 54 |  | 71 |  | 57 |  | 54 |  | 42 |  |
| 11-12 ratio |  | 100.0\% |  | 87.0\% |  | 85.9\% |  | 96.5\% |  | 103.7\% |  | 94.6\% |
| 12th grade | 64 |  | 61 |  | 47 |  | 61 |  | 55 |  | 56 |  |
| special ed | 9 | 88.9\% | 8 | 0.0\% | 0 | 0.0\% | 4 | 25.0\% | 1 | 200.0\% | 2 | 62.8\% |
| non-graded | 15 | 100.0\% | 15 | 100.0\% | 15 | 100.0\% | 15 | 100.0\% | 15 | 126.7\% | 19 | 105.3\% |
| Total Enrollment | 804 |  | 788 |  | 775 |  | 786 |  | 752 |  | 752 |  |

As the above results are analyzed, keep in mind that a retention ratio greater than $100 \%$ means that more students enrolled in a grade than were enrolled in the next lowest grade the previous year. A "mean ratio" for the entire six year period of greater than $100 \%$ means that some substantial movement into the district is occurring, and a ratio of less than $100 \%$ means just the opposite.

Because kindergarten enrollment is less certain, first grade enrollment is used as the basis of this technique and kindergarten "survival ratios" are calculated backwards. That is, the relationship analyzed is that of actual first grade enrollment with actual kindergarten enrollment the previous year. Therefore, if the K-1 survival ratio is greater than $100 \%$, then more children were in kindergarten than later enrolled in first grade. If the $\mathrm{K}-1$ ratio is less than $100 \%$, then fewer children were in kindergarten than later enrolled in first grade.

Sometimes it is helpful to graphically illustrate how many grade-to-grade retention ratios are more or less than $100 \%$, as a way of showing just how many grades are gaining or losing enrollment. For purposes of this graph we have reversed the $\mathrm{K}-1$ st grade ratio to conform to the other grades

It is apparent from the drop in $9^{\text {th }}$ grade enrollment that students from the northern part of the district may be electing high school enrollment in other school districts, rather than driving south to Council Grove.

## Six Year Average Retention Ratios by Grade



Keep in mind the above ratios and the projections which flow from them represent only the traditional grades K-12. What does the above data look like when it is separated between children located in Council Grove and those enrolled at the Prairie Heights attendance center in Alta Vista?

## Council Grove

|  | $\begin{gathered} 2008- \\ 09 \end{gathered}$ | $\begin{gathered} 2009- \\ 10 \end{gathered}$ | $\begin{gathered} 2010- \\ 11 \end{gathered}$ | $\begin{gathered} 2011- \\ 12 \end{gathered}$ | $\begin{gathered} 2012- \\ 13 \end{gathered}$ | $\begin{gathered} 2013- \\ 14 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kindergarten | 39 | 45 | 44 | 38 | 58 | 52 |
| Grade 1 | 32 | 33 | 42 | 46 | 38 | 58 |
| Grade 2 | 44 | 33 | 34 | 46 | 41 | 40 |
| Grade 3 | 49 | 50 | 35 | 33 | 47 | 40 |
| Grade 4 | 49 | 51 | 48 | 39 | 36 | 44 |
| Grade 5 | 46 | 44 | 52 | 53 | 35 | 34 |
| Grade 6 | 41 | 48 | 45 | 52 | 46 | 34 |
| Grade 7 | 48 | 42 | 52 | 49 | 49 | 45 |
| Grade 8 | 43 | 46 | 45 | 53 | 46 | 49 |
| Grade 9 | 63 | 54 | 56 | 51 | 64 | 55 |
| Grade 10 | 55 | 63 | 54 | 58 | 48 | 64 |
| Grade 11 | 61 | 54 | 71 | 57 | 54 | 42 |
| Grade 12 | 64 | 61 | 47 | 61 | 55 | 56 |
| Total Headcount Enr. K- $\begin{array}{\|l\|} \hline 12 \\ \hline \end{array}$ | 634 | 624 | 625 | 636 | 617 | 613 |


| Special Education (3/4) | 2 | 1 | 0 | -1 | 0 | 1 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Non-graded students | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 year old At-Risk | 15 | 15 | 15 | 15 | 15 | 19 |
| Non-graded students-Total | 15 | 15 | 15 | 15 | 15 | 19 |

Total Headcount Enr.
651
.

| 640 | 650 | 632 | 633 |
| :--- | :--- | :--- | :--- |

Note that $9^{\text {th }}$ grade enrollment in Council Grove actually grows, when compared only with Council Grove enrollment, while total district $9^{\text {th }}$ grade enrollment declines. Some Prairie Heights $8^{\text {th }}$ graders enroll in Council Grove, while others presumably seek $9^{\text {th }}$ grade enrollment in other districts.

## Prairie Heights

|  | $\begin{gathered} 2008- \\ 09 \end{gathered}$ | $\begin{gathered} 2009- \\ 10 \end{gathered}$ | $\begin{gathered} 2010- \\ 11 \end{gathered}$ | $\begin{gathered} 2011- \\ 12 \end{gathered}$ | $\begin{gathered} 2012- \\ 13 \end{gathered}$ | $\begin{gathered} 2013- \\ 14 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kindergarten | 17 | 14 | 17 | 12 | 14 | 14 |
| Grade 1 | 16 | 15 | 15 | 12 | 14 | 15 |
| Grade 2 | 19 | 16 | 16 | 19 | 14 | 13 |
| Grade 3 | 13 | 19 | 13 | 16 | 17 | 15 |
| Grade 4 | 13 | 14 | 16 | 15 | 15 | 13 |
| Grade 5 | 22 | 12 | 14 | 13 | 14 | 14 |
| Grade 6 | 16 | 17 | 10 | 16 | 10 | 12 |
| Grade 7 | 15 | 18 | 17 | 9 | 12 | 11 |
| Grade 8 | 15 | 16 | 17 | 19 | 9 | 11 |
| Grade 9 |  |  |  |  |  |  |
| Grade 10 |  |  |  |  |  |  |
| Grade 11 |  |  |  |  |  |  |
| Grade 12 |  |  |  |  |  |  |
| Total Headcount Enr. K12 | 146 | 141 | 135 | 131 | 119 | 118 |


| Special Education (3/4) | 7 | 7 | 0 | 5 | 1 | 1 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Non-graded students | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 year old At-Risk | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-graded students-Total | 0 | 0 | 0 | 0 | 0 | 0 |


| Total Headcount Enr. | 153 | 148 | 135 | 136 | 120 | 119 |
| :---: | ---: | ---: | ---: | ---: | ---: | ---: |

## Projected Enrollment

The mean ratios calculated for each grade in the district are multiplied by the enrollments for the last actual year of data to determine the grade totals for next year. Then those multiplications are repeated four more times, each year using the same average ratios determined earlier. The grade totals thereby derived are then totaled for the district, and those totals are displayed on the graph which began this report.

The following table shows the projected enrollment figures for each year, for each grade in the entire district:

|  | Average Ratio | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kindergarten |  | 51 | 55 | 68 | 64 | 64 |
| 1-K ratio | 104.0\% |  |  |  |  |  |
| 1st grade |  | 71 | 49 | 53 | 65 | 62 |
| 1-2 ratio | 103.4\% |  |  |  |  |  |
| 2 nd grade |  | 75 | 73 | 50 | 55 | 67 |
| 2-3 ratio | 100.8\% |  |  |  |  |  |
| 3rd grade |  | 53 | 76 | 74 | 51 | 55 |
| 3-4 ratio | 100.6\% |  |  |  |  |  |
| 4th grade |  | 55 | 54 | 77 | 75 | 51 |
| 4-5 ratio | 96.0\% |  |  |  |  |  |
| 5th grade |  | 55 | 53 | 52 | 73 | 72 |
| 5-6 ratio | 95.1\% |  |  |  |  |  |
| 6th grade |  | 46 | 52 | 51 | 49 | 70 |
| 6-7 ratio | 101.3\% |  |  |  |  |  |
| 7 th grade |  | 47 | 46 | 53 | 51 | 50 |
| 7-8 ratio | 99.9\% |  |  |  |  |  |
| 8th grade |  | 56 | 47 | 46 | 53 | 51 |
| 8-9 ratio | 90.9\% |  |  |  |  |  |
| 9th grade |  | 55 | 51 | 42 | 42 | 48 |
| 9-10 ratio | 99.5\% |  |  |  |  |  |
| 10th grade |  | 55 | 54 | 51 | 42 | 42 |
| 10-11 ratio | 99.4\% |  |  |  |  |  |
| 11th grade |  | 64 | 54 | 54 | 50 | 42 |
| 11-12 ratio | 94.6\% |  |  |  |  |  |
| 12th grade |  | 40 | 60 | 51 | 51 | 48 |
| special ed | 62.8\% | 1 | 1 | 1 | 1 | 1 |
| ratio |  |  |  |  |  |  |
| non-graded | 105.3\% | 20 | 21 | 22 | 23 | 24 |
| ratio |  |  |  |  |  |  |
| Total Enrollment |  | 743 | 747 | 744 | 745 | 746 |

Dividing these projections by buildings shows the relative stability in both. By the fall of 2018, the largest classes in the system (those over 70 children) will be preparing to enter the middle school. While there's some fluctuations in high school class sizes, stability is the projected pattern for the foreseeable future.


Council Grove High School Grades: Actual and Projected Enrollment by Class


## Conclusion

Cohort survival ratios are used frequently as an enrollment forecasting technique because they offer both a short term and a long term perspective. We have chosen to use an average of six years of (cohort survival ratios) information about Morris County USD 417. We could have used only the most recent year, or two. Because migration patterns and attrition (retention ratios more than $100 \%$ in the elementary grades and less than $100 \%$ in the $10^{\text {th }}$ grade) are factors influencing enrollment change in this district, and because migration patterns can change relatively quickly, the possibility exists that these projections understate what will be actual elementary enrollment.

No single enrollment forecast can answer all questions or always be precisely accurate. This caution is not intended to reduce the Board's confidence in this method. With the kind of migration patterns and birth rate data affecting this district, a cohort survival ratio appears ideally suited to forecast changes in total enrollment of the district. However, this report should become only part of a total planning effort, and not the sole factor upon which resource allocation decisions are made.

## Appendix

The remainder of this report consists of a table of 2010 Census data about Morris County and the school district. This information may be useful for reference as the Board of Education continues to examine the future population and enrollment questions facing


Table DP-1. Profile of General Demographic Characteristics: 2010
Geographic area: Morris County
[For information on confidentiality protection, nonsampling error, and definitions, see www.census.gov]

| Subject | Number | Percent | Subject | Number | Percent |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Total Population | 5,923 | 100.0 |  |  |  |
|  |  |  | HISPANIC OR LATINO AND RACE |  |  |
| SEX AND AGE |  |  | Hispanic or Latino (of any race) | 212 | 3.6 |
| Male | 2,955 | 49.9 | Mexican | 179 | 3.0 |
| Female | 2,968 | 50.1 | Puerto Rican | 1 | 0.0 |
|  |  |  | Cuban | 0 | 0.0 |
| Under 5 years | 307 | 5.2 | Other Hispanic or Latino | 32 | 0.5 |
| 5 to 9 years | 347 | 5.9 | Not Hispanic or Latino | 5,711 | 96.4 |
| 10 to 14 years | 381 | 6.4 | White alone | 5,572 | 94.1 |
| 15 to 19 years | 352 | 5.9 |  |  |  |
| 20 to 24 years | 247 | 4.2 | RELATIONSHIP |  |  |
| 25 to 34 years | 540 | 9.1 | Total population | 5,923 | 100.0 |
| 35 to 44 years | 585 | 9.9 | In households | 5,857 | 98.9 |
| 45 to 54 years | 981 | 16.6 | Householder | 2,554 | 43.1 |
| 55 to 59 years | 472 | 8.0 | Spouse | 1,474 | 24.9 |
| 60 to 64 years | 389 | 6.6 | Child | 1,460 | 24.6 |
| 65 to 74 years | 630 | 10.6 | Own child under 18 years | 1,177 | 19.9 |
| 75 to 84 years | 465 | 7.9 | Other relatives | 172 | 2.9 |
| 85 years and over | 227 | 3.8 | Under 18 years | 70 | 1.2 |
| Median age (years) | 47.2 | (X) | Nonrelatives | 197 | 3.3 |
|  |  |  | Unmarried partner | 108 | 1.8 |
| 18 years and over | 4,651 | 78.5 | In group quarters | 66 | 1.1 |
| Male | 2,279 | 38.5 | Institutionalized population | 66 | 1.1 |
| Female | 2,372 | 40.0 | Noninstitutionalized population | 0 | 0.0 |
| 21 years and over | 4,491 | 75.8 |  |  |  |
| 62 years and over | 1,539 | 26.0 | HOUSEHOLD BY TYPE |  |  |
| 65 years and over | 1,322 | 22.3 | Total households | 2,554 | 100.0 |
| Male | 597 | 10.1 | Family households (families) | 1,735 | 67.9 |
| Female | 725 | 12.2 | With own children under 18 years | 631 | 24.7 |
|  |  |  | Married-couple family | 1,474 | 57.7 |
| RACE |  |  | With own children under 18 years | 469 | 18.4 |
| One race | 5,828 | 98.4 | Female householder, no husband present | 167 | 6.5 |
| White | 5,687 | 96.0 | With own children under 18 years | 102 | 4.0 |
| Black or African American | 25 | 0.4 | Nonfamily households | 819 | 32.1 |
| American Indian and Alaska | 28 | 0.5 | Householder living alone | 732 | 28.7 |
| Native |  |  |  |  |  |
| Asian | 14 | 0.2 | Householder 65 years and over | 382 | 15.0 |
| Asian Indian | 0 | 0.0 |  |  |  |
| Chinese | 1 | 0.0 | Households with individuals under 18 years | 680 | 26.6 |
| Filipino | 4 | 0.1 | Households with individuals 65 and over | 899 | 35.2 |
| Japanese | 1 | 0.0 |  |  |  |
| Korean | 2 | 0.0 | Average household size | 2.29 | (X) |


| Vietnamese | 0 | 0.0 | Average family size | 2.79 | (X) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Other Asian ${ }^{1}$ | 6 | 0.1 |  |  |  |
| Native Hawaiian and Other | 1 | 0.0 | HOUSING OCCUPANCY |  |  |
| Pacific Islander |  |  |  |  |  |
| Native Hawaiian | 0 | 0.0 | Total housing units | 3,206 | 100.0 |
| Guamanian or Chamorro | 0 | 0.0 | Occupied housing units | 2,554 | 79.7 |
| Samoan | 1 | 0.0 | Vacant housing units | 652 | 20.3 |
| Other Pacific Islander ${ }^{2}$ | 0 | 0.0 | For seasonal, recreational, or occasional use | 321 | 10.0 |
| Some other race | 73 | 1.2 |  |  |  |
| Two or more races | 95 | 1.6 | Homeowner vacancy rate (percent) | 2.2 | (X) |
|  |  |  | Rental vacancy rate (percent) | 7.8 | (X) |
| Race alone or in combination with one |  |  |  |  |  |
| or more other races: ${ }^{3}$ |  |  | HOUSING TENURE |  |  |
| White | 5,777 | 97.5 | Occupied housing units | 2,554 | 100.0 |
| Black or African American | 39 | 0.7 | Owner-occupied housing units | 1,978 | 77.4 |
| American Indian and Alaska | 91 | 1.5 | Renter-occupied housing units | 576 | 22.6 |
| Native |  |  |  |  |  |
| Asian | 36 | 0.6 |  |  |  |
| Native Hawaiian and Other Pacific Islander | 7 | 0.1 | Average household size of owneroccupied units | 2.36 |  |
| Some other race | 86 | 1.5 | Average household size of renteroccupied units | 2.07 |  |

(X) Not applicable.
${ }^{1}$ Other Asian alone, or two or more Asian categories.
${ }^{2}$ Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.
${ }^{3}$ In combination with one or more of the other races listed. The six numbers may add to more than the total population and the six percentages may add to more than 100 percent because individuals may report more than one race.

Source: U.S. Census Bureau, Census 2010.

Table DP-1. Profile of General Demographic Characteristics: 2010
Geographic area: Morris County Unified School District 417, Kansas
[For information on confidentiality protection, nonsampling error, and defintions, see www.census.gov]

| Subject | Number | Percent | Subject | Number | Percent |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Total Population | 5,144 | 100.0 |  |  |  |
|  |  |  | HISPANIC OR LATINO AND RACE |  |  |
| SEX AND AGE |  |  | Hispanic or Latino (of any race) | 202 | 3.9 |
| Male | 2,559 | 49.7 | Mexican | 161 | 3.1 |
| Female | 2,585 | 50.3 | Puerto Rican | 7 | 0.1 |
|  |  |  | Cuban | 1 | 0.0 |
| Under 5 years | 267 | 5.2 | Other Hispanic or Latino | 33 | 0.6 |
| 5 to 9 years | 290 | 5.6 | Not Hispanic or Latino | 4,942 | 96.1 |
| 10 to 14 years | 319 | 6.2 | White alone | 4,823 | 93.8 |
| 15 to 19 years | 293 | 5.7 |  |  |  |
| 20 to 24 years | 225 | 4.4 | RELATIONSHIP |  |  |
| 25 to 34 years | 479 | 9.3 | Total population | 5,144 | 100.0 |
| 35 to 44 years | 489 | 9.5 | In households | 5,078 | 98.7 |
| 45 to 54 years | 860 | 16.7 | Householder | 2,258 | 43.9 |
| 55 to 59 years | 418 | 8.1 | Spouse | 1,267 | 24.6 |
| 60 to 64 years | 349 | 6.8 | Child | 1,246 | 24.2 |
| 65 to 74 years | 553 | 10.8 | Own child under 18 years | 993 | 19.3 |
| 75 to 84 years | 400 | 7.8 | Other relatives | 139 | 2.7 |
| 85 years and over | 202 | 3.9 | Under 18 years | 53 | 1.0 |
| Median age (years) | 47.5 | (X) | Nonrelatives | 168 | 3.3 |
|  |  |  | Unmarried partner | 93 | 1.8 |
| 18 years and over | 4,075 | 79.2 | In group quarters | 66 | 1.3 |
| Male | 1,985 | 38.6 | Institutionalized population | 66 | 1.3 |
| Female | 2,090 | 40.6 | Noninstitutionalized population | 0 | 0.0 |
| 21 years and over | 3,934 | 76.5 |  |  |  |
| 62 years and over | 1,345 | 26.1 | HOUSEHOLD BY TYPE |  |  |
| 65 years and over | 1,155 | 22.5 | Total households | 2,258 | 100.0 |
| Male | 510 | 9.9 | Family households (families) | 1,503 | 66.6 |
| Female | 645 | 12.5 | With own children under 18 years | 540 | 23.9 |
|  |  |  | Married-couple family | 1,267 | 56.1 |
| RACE |  |  | With own children under 18 years | 396 | 17.5 |
| One race | 5,062 | 98.4 | Female householder, no husband present | 153 | 6.8 |
| White | 4,942 | 96.1 | With own children under 18 years | 89 | 3.9 |
| Black or African American | 22 | 0.4 | Nonfamily households | 755 | 33.4 |
| American Indian and Alaska | 20 | 0.4 | Householder living alone | 684 | 30.3 |
| Native |  |  |  |  |  |
| Asian | 14 | 0.3 | Householder 65 years and over | 344 | 15.2 |
| Asian Indian | 0 | 0.0 |  |  |  |
| Chinese | 1 | 0.0 | Households with individuals under 18 years | 578 | 25.6 |
| Filipino | 6 | 0.1 | Households with individuals 65 and over | 785 | 34.8 |
| Japanese | 1 | 0.0 |  |  |  |


| Korean | 0 | 0.0 | Average household size | 2.25 | (X) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Vietnamese | 0 | 0.0 | Average family size | 2.76 | (X) |
| Other Asian ${ }^{1}$ | 6 | 0.1 |  |  |  |
| Native Hawaiian and Other | 1 | 0.0 | HOUSING OCCUPANCY |  |  |
| Pacific Islander |  |  |  |  |  |
| Native Hawaiian | 0 | 0.0 | Total housing units | 2,847 | 100.0 |
| Guamanian or Chamorro | 0 | 0.0 | Occupied housing units | 2,258 | 79.3 |
| Samoan | 1 | 0.0 | Vacant housing units | 589 | 20.7 |
| Other Pacific Islander ${ }^{2}$ | 0 | 0.0 | For seasonal, recreational, or occasional use | 316 | 11.1 |
| Some other race | 63 | 1.2 |  |  |  |
| Two or more races | 82 | 1.6 | Homeowner vacancy rate (percent) | 2.1 | (X) |
|  |  |  | Rental vacancy rate (percent) | 7.9 | (X) |
| Race alone or in combination with one |  |  |  |  |  |
| or more other races: ${ }^{3}$ |  |  | HOUSING TENURE |  |  |
| White | 5,019 | 97.6 | Occupied housing units | 2,258 | 100.0 |
| Black or African American | 38 | 0.7 | Owner-occupied housing units | 1,729 | 76.6 |
| American Indian and Alaska | 71 | 1.4 | Renter-occupied housing units | 529 | 23.4 |
| Native |  |  |  |  |  |
| Asian | 32 | 0.6 |  |  |  |
| Native Hawaiian and Other Pacific Islander | 8 | 0.2 | Average household size of owneroccupied units | 2.34 |  |
| Some other race | 72 | 1.4 | Average household size of renteroccupied units | 1.95 |  |

(X) Not applicable.
${ }^{1}$ Other Asian alone, or two or more Asian categories.
${ }^{2}$ Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.
${ }^{3}$ In combination with one or more of the other races listed. The six numbers may add to more than the total population
and the six percentages may add to more than 100 percent because individuals may report more than one race.

Source: U.S. Census Bureau, Census 2010.


[^0]:    ${ }^{1}$ Wichita State University, Center for Economic Development and Business Research, http://webs.wichita.edu/?u=CEDBR\&p=/Data/Demo/
    ${ }^{2}$ P. 15, "2013-14 Edition: Kansas School Enrollment and Demographic Information" KASB, August 2013
    ${ }^{3}$ Note: All of the population information, estimates and projections in this section come from materials published by the US Bureau of the Census, and reported in the "Kansas Statistical Abstract 2012" 47th Edition, September 2013 by the Institute for Policy and Social Research, The University of Kansas.

