Lake Bluff School District #65

POPULATION AND ENROLLMENT FORECASTS, 2012 - 2021

Prepared by:
Jerome N. McKibben, Ph.D.

McKibben Demographic Research
Rock Hill, South Carolina
mckibbendemographics.com
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EXECUTIVE SUMMARY

1. The fertility rates for the Lake Bluff School District are below replacement levels during the entire life of the forecasts. (TFR=1.54 for the district vs. 2.1 for replacement level)

2. Most of the in-migrating households to the district contain population in the 0-to-9 and 25-to-39 age groups.

3. The 18-to-24 year old population (recent graduating seniors) will continue to leave the district, going to college or moving to other urban areas.

4. The primary factors causing the district's enrollment to decline are the continued and growing rate of out-migration in the local 18-to-24 year old age group and the slowing in-migration of younger families.

5. Changes in year-to-year enrollment (particularly after 2017) largely will be due to smaller grade cohorts entering and moving through the system in conjunction with larger grade cohorts leaving the system.

6. As in-migration of young families continues to slow and smaller grade cohorts enter into the school system, total enrollment will continue to decline. However, enrollment will decrease at a slower rate after 2015.

7. As the district continues to have less new home construction the rate and magnitude of existing home sales and the occupancy rates of the rental housing units will become the increasingly dominant factor affecting the amount of population and enrollment change.

8. Total enrollment is forecasted to decrease by 55 students, or -6.1 %, between 2011-12 and 2016-17. Total enrollment will decline 50 students, or -5.9%, from 2016-17 to 2021-22
INTRODUCTION

By demographic principle, distinctions are made between projections and forecasts. A projection extrapolates the past (and present) into the future with little or no attempt to take into account any factors that may impact the extrapolation (e.g., changes in fertility rates, housing patterns or migration patterns) while a forecast results when a projection is modified by reasoning to take into account the aforementioned factors.

To maximize the use of this study as a planning tool, the ultimate goal is not simply to project the past into the future, but rather to assess various factors’ impact on the future. The future population and enrollment growth of each school district is influenced by a variety of factors. Not all factors will influence the entire school district at the same level. Some may affect different areas at dissimilar magnitudes and rates causing changes at varying points of time within the same district. Forecaster’s judgment based on a thorough and intimate study of the district has been used to modify the demographic trends and factors to more accurately predict likely changes. Therefore, strictly speaking, this study is a forecast, not a projection; and the amount of modification of the demographic trends varies between different areas of the district as well as within the timeframe of the forecast.

To calculate population forecasts of any type, particularly for smaller populations such as a school district or its attendance areas, realistic suppositions must be made as to what the future will bring in terms of age specific fertility rates and residents’ demographic behavior at certain points of the life course. The demographic history of
the school district and its interplay with the social and economic history of the area is the starting point and basis of most of these suppositions particularly on key factors such as the age structure of the area. The unique nature of each district's demographic composition and rate of change over time must be assessed and understood to be factors throughout the life of the forecast series. Moreover, no two populations, particularly at the school district level, have exactly the same characteristics.

The manifest purpose of these forecasts is to ascertain the demographic factors that will ultimately influence the enrollment levels in the district's schools. There are of course, other non-demographic factors the affect enrollment levels over time. These factors include, but are not limited to transfer policies within the district; student transfers to and from neighboring districts; placement of “special programs” within the district; state or federal mandates that dictate the movement of students from one facility to another (No Child Left Behind is an excellent example of this factor); the development of charter schools in the district; the prevalence of home schooling in the area; and the dynamics of local private schools.

Unless the district specifically requests the calculation of forecasts that reflect the effects of changes in these non-demographic factors, their influences are held constant for the life of the forecasts. Again, the main function of these forecasts is to determine what impact demographic changes will have on future enrollment. It is quite possible to calculate special “scenario” forecasts to measure the impact of school policy modifications as well as planned economic and financial changes. However in this case the results of these population and enrollment forecast are meant to represent the most
likely scenario for changes over the next 10 years in the district and its attendance areas.

The first part of the report will examine the assumptions made in calculating the population forecasts for the Lake Bluff School District. Since the results of the population forecasts drive the subsequent enrollment forecasts, the assumptions listed in this section are paramount to understanding the area’s demographic dynamics. The remainder of the report is an explanation and analysis of the district’s population forecasts and how they will shape the district's grade level enrollment forecasts.

DATA

The data used for the forecasts come from a variety of sources. Enrollments by grade and attendance center were provided by the Lake Bluff School District for school years 2007-2008 to 2011-12. Birth and death data were obtained from the Illinois State Department of Health for the years 2000 through 2010. The net migration values were calculated using Internal Revenue Service migration reports for the years 2000 through 2009. The data used for the calculation of migration models came from the United States Bureau of the Census, 2000-2010, and the models were designed using demographic and economic factors. The base age-sex population counts used are from the results of the 2010 Census.

Recently the Census Bureau began releasing annual estimates of demographic variables at the block group and tract level from the American Community Survey (ACS). There has been wide scale reporting of these results in the national, state and local media. However, due to the methodological problems the Census Bureau is
experiencing with their estimates derived from ACS data, particularly in areas with a population of less than 60,000, the results of the ACS are not used in these forecasts. For example, given the sampling framework used by the Census Bureau, each year only 100 of the over 2,800 current households in the district would have been included. For comparison over 400 households in the district were included in the sample for the long form questionnaire in the 2000 Census. As a result of this small sample size, the ACS survey result from the last 5 years must be aggregated to produce the tract and block group estimates.

To develop the population forecast models, past migration patterns, current age specific fertility patterns, the magnitude and dynamics of the gross migration, the age specific mortality trends, the distribution of the population by age and sex, the rate and type of existing housing unit sales, and future housing unit construction are considered to be primary variables. In addition, the change in household size relative to the age structure of the forecast area was addressed. While there was a substantial drop in the average household size in the Lake Bluff area as well as most other areas of the state during the previous 20 years, the rate of this decline has been forecasted to slow over the next ten years.

**ASSUMPTIONS**

For these forecasts, the mortality probabilities are held constant at the levels calculated for the year 2010. While the number of deaths in an area are impacted by and will change given the proportion of the local population over age 65, in the absence of an extraordinary event such as a natural disaster or a breakthrough in the treatment
of heart disease, death rates rarely move rapidly in any direction, particularly at the school district or attendance area level. Thus, significant changes are not foreseen in district’s mortality rates between now and the year 2021. Any increases forecasted in the number of deaths will be due primarily to the general aging of the district’s population and specifically to the increase in the number of residents aged 65 and older.

Similarly, fertility rates are assumed to stay fairly constant for the life of the forecasts. Like mortality rates, age specific fertility rates rarely change quickly or dramatically, particularly in small areas. Even with the recently reported rise in the fertility rates of the United States, overall fertility rates have stayed within a 10% range for most of the last 40 years. In fact, the vast majority of year to year change in an area’s number of births is due to changes in the number of women in child bearing ages (particularly ages 20-29) rather than any fluctuation in an area’s fertility rate.

The total fertility rate (TFR), the average number of births a woman will have in her lifetime, is estimated to be 1.54 for the total district for the ten years of the population forecasts. A TFR of 2.1 births per woman is considered to be the theoretical “replacement level” of fertility necessary for a population to remain constant in the absence of in-migration. Therefore, over the course of the forecast period, fertility will not be sufficient, in the absence of migration, to maintain the current level of population within the Lake Bluff School District.

A close examination of data for the Lake Bluff School District has shown the age specific pattern of net migration will be nearly constant throughout the life of the
forecasts. While the number of in and out migrants has changed in past years for the Lake Bluff School District (and will change again over the next 10 years), the basic age pattern of the migrants has stayed nearly the same over the last 30 years. Based on the analysis of data it is safe to assume this age specific migration trend will remain unchanged into the future. This pattern of migration shows most of the local out-migration occurring in the 18-to-24 year old age group as young adults leave the area to go to college or move to other urban areas. The second group of out-migrants is those householders aged 70 and older who are downsizing their residences. Most of the local in-migration occurs in the 0-to-9 and 25-39 age groups (bulk of which is from areas within 50 miles of Lake Bluff) primarily consisting of younger adults and their children.

As Lake Bluff are not currently contemplating any major expansions or contractions, the forecasts also assume the current economic, political, transportation and public works infrastructure (with a few notable exceptions), social, and environmental factors of the Lake Bluff School District and its attendance areas will remain the same through the year 2021.

Below is a list of assumptions and issues that are specific to the Lake Bluff School District and the surrounding area. These issues have been used to modify the population forecast models to more accurately predict the impact of these factors on each area’s population change. Specifically, the forecasts for the Lake Bluff School District assume that throughout the study period:

a. There will be no short term economic recovery in the next 18 months and the national, state or regional economy does not go into deep recession at anytime
during the 10 years of the forecasts; (Deep recession is defined as four consecutive quarters where the GDP contracts greater than 1% per quarter)
b. Interest rates have reached an historic low and will not fluctuate more than one percentage point in the short term; the interest rate for a 30 year fixed home mortgage stays below 6%;
c. The rate of mortgage approval stays at 1999-2002 levels and lenders do not return to “sub-prime” mortgage practices;
d. There are no additional restrictions placed on home mortgage lenders or additional bankruptcies of major credit providers;
e. The rate of housing foreclosures does not exceed 125% of the 2005-2007 average of Lake Bluff for any year in the forecasts;
f. All currently planned, platted, and approved housing developments are built out and completed by 2020. All housing units constructed are occupied by 2021;
g. The unemployment rates for Lake County will remain below 9.0% for the 10 years of the forecasts;
h. The rate of students transferring into and out of the Lake Bluff School District will remain at the 2005-06 to 2009-10 average;
i. The inflation rate for gasoline will stay below 5% per year for the 10 years of the forecasts;
j. There will be no building moratorium within the district;

k. Businesses within the district and Lake County will remain viable;
i. The number of existing home sales in the district that are a result of “distress
sales” (homes worth less than the current mortgage value) will not exceed 20% of total homes sales in the district for any given year;

m. Housing turnover rates (sale of existing homes in the district) will remain at their current levels. The majority of existing home sales are made by home owners over the age of 55;

n. Private school and home school attendance rates will remain constant;

o. The recent decline in new home construction has ended and building rates have stabilized;

p. The rate of foreclosures for commercial property remains at the 2004-2007 average for the Lake County area;

If a major employer in the district or in Lake County closes, reduces or expands its operations, the population forecasts would need to be adjusted to reflect the changes brought about by the change in economic and employment conditions. The same holds true for any type of natural disaster, major change in the local infrastructure (e.g., highway construction, water and sewer expansion, changes in zoning regulations etc.), a further economic downturn, any additional weakness in the housing market or any instance or situation that causes rapid and dramatic population changes that could not be foreseen at the time the forecasts were calculated.

The high proportion of high school graduates from the Lake Bluff School District that attend college or move to urban areas outside of the district for employment is a significant demographic factor. Their departure is a major reason for the extremely high out-migration in the locally raised 18-to-24 age group and was taken into account when
calculating these forecasts. The out-migration of graduating high school seniors is expected to continue over the period of the forecasts and the rate of out-migration has been forecasted to remain the same over the life of the forecast series.

Finally, all demographic trends (i.e., births, deaths, and migration) are assumed to be linear in nature and annualized over the forecast period. For example, if 1,000 births are forecasted for a 5-year period, an equal number, or proportion of the births are assumed to occur every year, 200 per year. Actual year-to-year variations do and will occur, but overall year to year trends are expected to be constant.

METHODOLOGY

The population forecasts presented in this report are the result of using the Cohort-Component Method of population forecasting (Siegel, and Swanson, 2004: 561-601) (Smith et. al. 2004). As stated in the INTRODUCTION, the difference between a projection and a forecast is in the use of explicit judgment based upon the unique features of the area under study. Strictly speaking, a cohort-component projection refers to the future population that would result if a mathematical extrapolation of historical trends were applied to the components of change (i.e., births, deaths, and migration). Conversely, a cohort-component forecast refers to the future population that is expected because of a studied and purposeful selection of the components of change believed to be critical factors of influence in each specific area.

Five sets of data are required to generate population and enrollment forecasts. These five data sets are:
a. a base-year population (here, the 2010 Census population for the Lake Bluff School District and their attendance areas);

b. a set of age-specific fertility rates for each attendance area to be used over the forecast period;

c. a set of age-specific survival (mortality) rates for each attendance area;

d. a set of age-specific migration rates for each attendance area; and

e. the historical enrollment figures by grade.

The most significant and difficult aspect of producing enrollment forecasts is the generation of the population forecasts in which the school age population (and enrollment) is embedded. In turn, the most difficult aspect of generating the population forecasts is found in deriving the rates of change in fertility, mortality, and migration. From the standpoint of demographic analysis, the Lake Bluff School District and its ten elementary attendance center districts are classified as “small area” populations (as compared to the population of the state of Illinois or to that of the United States). Small area population forecasts are more difficult to calculate because local variations in fertility, mortality, and migration may be more irregular than those at the state or national scale. Especially challenging to project are migration rates for local areas, because changes in the area’s socioeconomic characteristics can quickly change from past and current patterns (Peters and Larkin, 2002.)

The population forecasts for Lake Bluff School District and it attendance areas were calculated using a cohort-component method with the populations divided into male and female groups by five-year age cohorts that range from 0-to-4 years of age to 85 years of age and older (85+). Age- and sex-specific fertility, mortality, and migration models were constructed to specifically reflect the unique demographic characteristics.
of each of the Lake Bluff School District attendance areas as well as the total school district.

The enrollment forecasts were calculated using a modified average survivorship method. Average survivor rates (i.e., the proportion of students who progress from one grade level to the next given the average amount of net migration for that grade level) over the previous five years of year-to-year enrollment data were calculated for grades two through eight. This procure is used to identify specific grades where there are large numbers of students changing facilities for non-demographic factors, such as private school transfers or enrollment in special programs.

The survivorship rates were modified or adjusted to reflect the average rate of forecasted in and out migration of 5-to-9 and 10-to-14 year olds cohorts in the Lake Bluff School District for the period 2005 to 2010. These survivorship rates then were adjusted to reflect the forecasted changes in age-specific migration the district should experience over the next five years. These modified survivorship rates were used to project the enrollment of grades two through eight for the period 2010 to 2015. The survivorship rates were adjusted again for the period 2015 to 2020 to reflect the predicted changes in the amount of age-specific migration in the districts for the period.

The forecasted enrollments for kindergarten and first grade are derived from the 5-to-9 year old population of the age-sex population forecast at the elementary attendance center district level. This procedure allows the changes in the incoming grade sizes to be factors of forecasted population change and not an extrapolation of previous class sizes. Given the potentially large amount of variation in Kindergarten enrollment due to parental choice, changes in the state's minimum age requirement,
and differing district policies on allowing children to start Kindergarten early, first grade enrollment is deemed to be a more accurate and reliable starting point for the forecasts. (McKibben, 1996) The level of the accuracy for both the population and enrollment forecasts at the school district level is estimated to be $\pm 2.0\%$ for the life of the forecasts.
RESULTS AND ANALYSIS OF THE POPULATION FORECASTS

From 2010 to 2020, the populations of the Lake Bluff School District, Lake County; the state of Illinois, and the United States are forecasted to change as follows; the Lake Bluff School District will decrease by -4.0%, Lake County will grow by 5.9% Illinois will increase by 1.4%; and the United States increase by 8.4% (see Table 1).

Table 1: Forecasted Population Change, 2010 to 2020

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>10-Year Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. (in millions)</td>
<td>308</td>
<td>322</td>
<td>334</td>
<td>8.4%</td>
</tr>
<tr>
<td>Illinois</td>
<td>12,803,632</td>
<td>12,917,000</td>
<td>12,989,000</td>
<td>1.4%</td>
</tr>
<tr>
<td>Lake County</td>
<td>703,462</td>
<td>729,200</td>
<td>744,800</td>
<td>5.9%</td>
</tr>
<tr>
<td>Lake Bluff S.D.</td>
<td>8,876</td>
<td>8,700</td>
<td>8,520</td>
<td>-4.0%</td>
</tr>
</tbody>
</table>

A number of general demographic factors will influence the growth rate of the Lake Bluff School District during this period, and include the following:

a. The bulk of the in-migrating households from the 1990s has moved through the prime childbearing ages and will increasingly become empty nest over the next 10 years;

b. The remaining population in childbearing ages (women ages 15-45) will have fewer children;

c. Most of the 18-to-24 year old population, in prime childbearing ages, will continue to leave the area to go to college or to other urban areas, with the magnitude of this out-migration flow slowly increasing; and,

d. The district will experience continued increase in housing stock, with an average of 15 new units being built each year through 2015. New housing construction will continue after that point, but housing starts will only average 10 per year until 2021.
The Lake Bluff School District will continue to experience in-migration (movement of new young families into the district) over the next 10 years. However, the size and age structure of the pool of potential in-migrants will change and the effects of the in-migration of families on population growth will be greatly offset by the continued steady growing out-migration of young adults as graduating seniors continue to leave the district.

From 2010 to 2015, the district’s population is forecasted to decrease by 176 or -2.0%, to 8,700. From 2015 to 2020, the population is forecasted to continue to decrease by an additional 180 persons or -2.1%. While all parts of the district will see some amount of gross in-migration, (primarily in the 0-to-9 and 30-to-44 age groups,) all areas also will continue to see gross out-migration. This out-migration primarily will be young adults, 18-to-24 years old, as graduating seniors continue to leave the district to go to college or seek employment in larger urban areas. Consequently, the district will experience a modest reduction in their average household size.

**Table 2: Forecasted Lake Bluff School District Population, 2010 to 2020**

<table>
<thead>
<tr>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Bluff Total</td>
<td>8,876</td>
<td>8,700</td>
<td>-2.0%</td>
<td>8,520</td>
<td>-2.1%</td>
<td>-4.0%</td>
</tr>
</tbody>
</table>

As stated in the **ASSUMPTIONS** and emphasized above, the impact of the high proportion of high school graduates that leave the district to continue on to college or to seek employment in large urban areas is significant to the size and structure of the future population of the district. Up to 70% of all births occur to women between the
ages of 20 and 29. As the graduating seniors continue to leave the district, the number of women at risk of childbirth during the next decade declines. Consequently, even though the district’s fertility rate is just slightly below the replacement level, the small number of women in the district in prime childbearing ages will keep the number of births declining at a modest rate despite the district having a growing population (see the population pyramids in the appendix of this report for a graphic representation of the age distributions of the district and all of the attendance areas). This will require the district to become quite dependant on the in-migration of children just to maintain current grade cohort sizes.

It is forecasted that the impact of the steadily increasing out-migration of young adults will continue to be somewhat but not completely offset by young family (25-40 year old householders) in-migration and that the total number of births will continue to decline throughout the forecast period.

Another factor that needs to be considered is the birth dynamics of the last twenty years. An examination of national birth trends shows there was a large "Baby Boomlet" born between 1980 and 1995. This Boomlet was nearly as large as the Baby Boom of the 1950s and 1960s. However, unlike the Baby Boom, the Boomlet was a regional and not a national phenomenon (McKibben, et. al. 1999). Because Illinois did not experience a Baby Boomlet, most of the expected enrollment growth will have to result from in-migration and not from an increase in the grade cohort size.
Table 3: Lake Bluff District Household Characteristics, 2010 Census

<table>
<thead>
<tr>
<th></th>
<th>HH w/ Pop Under 18</th>
<th>% HH w/ Pop Under 18</th>
<th>Total Households</th>
<th>Household Population</th>
<th>Persons Per Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Bluff Total</td>
<td>1063</td>
<td>37.5%</td>
<td>2832</td>
<td>7658</td>
<td>2.70</td>
</tr>
</tbody>
</table>

Clearly, one of the primary factors that has affected the population growth rates of the Lake Bluff School District over the last 30 years has been the number, pace and cost of new homes constructed. However, the dynamics of this in migration flow are more complex than many realize. There is a common misconception that any changes in the economy, housing market or transportation system will have an immediate impact of the size of an area’s population and the total impact of that change will be experienced immediately. For example, the Town of Lake Bluff had been experiencing an average of approximately 30 new housing units constructed per year from 2001 to 2006. From 2007 to 2011 the town has been averaging about 10 new housing units per year. Only now is the full impact of the slowdown in new home construction being seen in the elementary enrollment numbers (this is also a key factor in regards to the slowdown of households that move into existing housing units).

This “delayed demographic reaction” is a key issue when attempting to ascertain the impact and duration of a trend. While it is true that the households moving into these new housing units bring many school age (particularly elementary) children into the district, they also bring many preschool age children as well. Consequently, the full impact of the growth in new home construction is not seen immediately in elementary enrollment as it takes three to seven years for all of the children to age into the schools.
This is the manifest issue in regards to future population and enrollment trends since the number of births in the Lake Bluff School District is insufficient to maintain current enrollment levels. The number of women living in the district that are ages 20-29 (prime child bearing ages) is too small to produce birth cohorts that are the same size as those currently in the elementary grades.

Of additional concern are the issues of the district's aging population and the growing number of "empty nest" households. For example, after the last school age child leaves high school, the household becomes an "empty nest" and most likely will not send any more children to the school system. In most cases, it takes 20 to 30 years before all original (or first time) occupants of a housing area move out and are replaced by new, young families with children. This principle also applies to children leaving elementary school and moving on the middle school. Households can still have school age children in the district’s school, but also in effect be “empty nest” of elementary age children.

Table 4: Lake Bluff Householder Characteristics, 2010 Census

<table>
<thead>
<tr>
<th></th>
<th>Percentage of Householders aged 35-54</th>
<th>Percentage of Householders aged 65+</th>
<th>Percentage of Householders Who Own Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Bluff Total</td>
<td>45.7%</td>
<td>24.0%</td>
<td>86.2%</td>
</tr>
</tbody>
</table>

Note as well the steady increase in the median age of the population in the Lake Bluff School District and all of its attendance areas (see population forecasts in the appendix for the median age for each forecast year). The district as a whole will see the
median age of its population increase from 39.5 in 2010 to 41.7 in 2020. This rise in median age is due to three factors, 18-24 years leaving the district, a high proportion of their parents staying in their existing households and the decline in the number of births. (See Table 4)

As a result of the “empty nest” syndrome, the attendance areas in the Lake Bluff School District will see a steady rise in the median age of their populations, even while the district as a whole continues to attract some new young families. It should be noted that many of these "childless" households are single persons and/or elderly (See Table 5). Consequently, even if many of these housing units "turnover" and attract households of similar characteristics, they will add little to the number of school age children in the district. Furthermore, many of the empty nest households will “down size” to smaller households within the district. In these cases new housing units may be built in an area, yet there is no corresponding increase in school enrollment.

There are several additional factors that are responsible for the difference between growth in population and growth in housing stock. Included among these factors are: people building new "move up" homes in the same area or district, (an important point since the children in move up homes tend to be of middle or high school age); children moving out of their parents homes and establishing residence in the same area; the increase in single-individual households; and divorce, with both parents remaining in the same area.
Table 5: Single Person Households and Single Person Households over age 65, 2010 Census

<table>
<thead>
<tr>
<th></th>
<th>Percentage of Single Person Households</th>
<th>Percentage of Households single person and 65+</th>
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<tbody>
<tr>
<td>Lake Bluff Total</td>
<td>20.4%</td>
<td>8.0%</td>
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RESULTS AND ANALYSIS OF ENROLLMENT FORECASTS

Elementary Enrollment

The total elementary enrollment (Grades EC through 6th) of the district is forecasted to decrease from 671 in 2011-12 to 627 in 2016-17, a decline of 44 students or -6.6%. From 2016-17 to 2021-22, elementary enrollment is expected to drop by 39 students to 588. This will represent a -6.2% decrease over the five-year period (see Chart 6).

The reason for this turnaround in elementary enrollment pattern (and a marked departure from the elementary trends the district has been experiencing during the 1990s and early 2000s years) is the convergence of the effects of three factors, all occurring roughly by 2014. These factors are the reversal of cohort sizes in the elementary grades, the small number of housing units turning over, and the dramatic rise in the number of empty nest households. Each of these factors will contribute in part to the decline in elementary enrollment until 2015 and subsequent stabilization afterwards.

One of the main reasons elementary enrollment was decreasing over the last several years was due to the fact that the number of children entering Kindergarten and 1st grade was much smaller than the number leaving elementary school after completing 6th grade. This enrollment decline was in spite of the addition of extra Kindergarten through 5th grade students the district was gaining through in-migration of young families. From 2012 to 2016, the number of students in 6th grade will average 113 each year as opposed to the 129 average the district experienced over the last five years.
Thus, even as the number of students entering the school system will be smaller over the next five years, the rate of overall decline is reduced due to the smaller number of students moving on to the middle school grades.

Table 6: Total Elementary Enrollment, 2011, 2016, 2021

<table>
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</thead>
<tbody>
<tr>
<td>Lake Bluff Total</td>
<td>671</td>
<td>627</td>
<td>-6.6%</td>
<td>588</td>
<td>-6.2%</td>
<td>-12.4%</td>
</tr>
</tbody>
</table>

The second factor is the slow down in the housing construction industry. While it is true that the Lake County housing market has performed somewhat better than the national trends the last three years, it is not immune the effects of a tightening of the mortgage market and in increasingly restrictive lending practices. The Lake Bluff area, like most areas of the county, saw the number of new home sales increase in 2003 to 2007 as the expansion of sub-prime mortgage practices allowed many people to purchase new homes. Given the turmoil the collapse of the sub prime market has caused, it can be assumed that there will not be a return to these lending practices anytime in the near future.

Consequently, the Lake Bluff School District (like most suburban areas in the country) will see the number of new homes sales drop back to the levels experienced before the sub prime boom. As was mentioned earlier, this trend was already evident in 2008 through 2011. Further, these forecasts assume that there will not be a significant increase in the number of foreclosed housing units being put on the market in the immediate future. This means that there will be no marked increase in the sale of
relatively new existing homes any time in the near future.

The third factor is the rise of the number of empty nest households in the district. In 2010 the district had 45.7% of their households headed by people ages 35-54 (The ages most people have school aged children). The district's proportion of households in these age groups has dropped over the last five years (and will continue to decline over the next 10 years) as people aged and the households became empty nest. Unfortunately, the large bubble of now empty nest households, (particularity empty of elementary age students) will not reach their 70s during the life of these forecasts. Post 70 year old households are the stage of life when most householders downsize, allowing new young families with children to move in.

An excellent example of this phenomenon is the single year of age counts for the district from the 2010 Census (See Table 7). The population at age six is closely related to the combined 1th grade enrollment of the public and private students in the district (as it is for all elementary grades). However, note the sharp reduction in the number of residents from age five to under one. This trend is an indication of the growing proportion of households in each area that will be beginning to empty nest of elementary age students. Without a substantial in-migration of young families with children under the age of five, this “pre-school dearth” will results in a marked decline in elementary enrollment of the next five years.

This “pre-school dearth” of population has existed in the Lake Bluff school for over 20 years (this phenomena is quite common in suburban school districts). However, the large scale construct of new homes or the sale of existing homes with their subsequent in-migration of families with pre-school age children would increase to the age cohort
sizes. By the time each age cohort would reach age six, (first grade) its relative size would be equal or greater the previous year's first grade group.

The primary issue affecting enrollment change during the next five to ten years is that the number of new and existing home sales over the last three years in the district has been more than 60% lower on average than the previous seven years. Without this in-migration flow, the district’s pre-school age cohorts will be of insufficient size to maintain the current elementary enrollment levels. The more dependant an area is on in-migration for students to compensate for a low number of births, the larger the enrollment will decline.

Table 7: Age <1 to Age Ten Population Counts, by Year of Age: 2010 Census

<table>
<thead>
<tr>
<th>Year</th>
<th>Under 1 year</th>
<th>1 year</th>
<th>2 years</th>
<th>3 years</th>
<th>4 years</th>
<th>5 years</th>
<th>6 years</th>
<th>7 years</th>
<th>8 years</th>
<th>9 years</th>
<th>10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Bluff Total</td>
<td>55</td>
<td>61</td>
<td>68</td>
<td>63</td>
<td>89</td>
<td>101</td>
<td>120</td>
<td>100</td>
<td>138</td>
<td>106</td>
<td>131</td>
</tr>
</tbody>
</table>

The demographic factors that will become the most influential over the next ten years are the growth rate of empty nest household in the district, the number of sales of new homes, the rate and magnitude of existing housing unit "turn over," the relative size of the elementary and pre-school age cohorts, and the district’s fertility rate. Each of these factors will vary in the scale of their influence and timing of impact on the enrollment trends of any particular elementary area.
As the district becomes more dependent upon existing home sales to attract new families, the overall elementary enrollment trend of the district will decline. Thus, the best primary short- and long-term indicator for enrollment change in most of the attendance area will be the year-to-year rate of housing turnover. If the Total Fertility Rates of all the attendance areas remain at their current low levels (and they are forecasted to do so) they will insure that enrollments will continue to see slowing growth (or outright declines) even if the level of net out-migration is greatly reduced.

It is important to note that not all new housing construction results in an increase in elementary enrollment. Frequently in cases where the new home construction is primarily move up houses (priced $417,000 or higher, the lower limits of a jumbo mortgage until 2008) the impact on enrollment is felt more at the middle and high school levels than at the elementary level. These homes are usually purchased by families who have completed their childbearing and the children they do have tend to be ages 10 and older.

**Middle School Enrollment**

The total middle school enrollment (Grades 7 and 8) for the district is forecasted to decline from 235 in 2011-12 to 224 in 2016-17, a 9 student or -3.8% decrease. Between 2016-17 and 2021-22 middle school enrollment is forecasted to decline to 213, a decrease of 9 students or -4.0%. The difference in the size of the individual grade cohorts and the aging of students through the school system are the primary reasons why the middle school enrollment trends deviate from those of the elementary grades.

There are currently small grade cohorts enrolled in the elementary school grades
compared to those in the middle schools’ grade cohorts. As these elementary school cohorts "age" into middle school and smaller middle school cohorts age into high school, they decrease the overall middle school enrollment level. Note how the size of the incoming 7th grade class is usually smaller than the previous year’s 8th grade class, which has now moved on the high school. As long as this "dearth" in the enrollment pattern exists, there will be to some degree, a decrease in middle school enrollment at least until the 2021-22 school year.
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