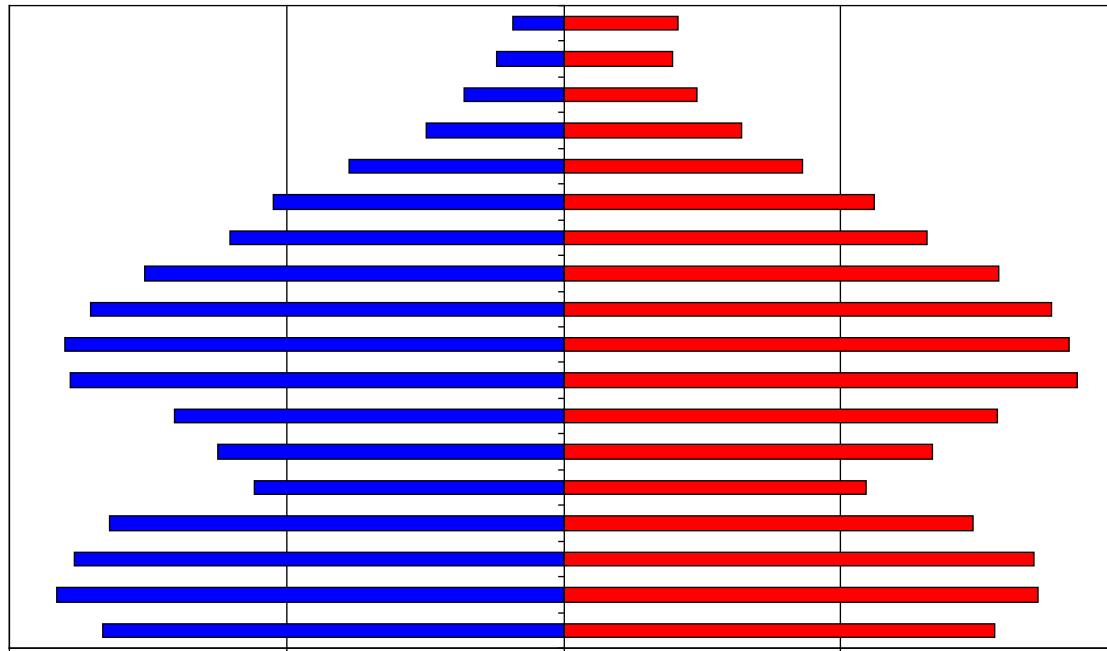




DeKalb County School District, GA

Demographic Study Report 2021



Cropper GIS

McKibben Demographics

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Executive Summary

1. The DeKalb County School District's fertility rates over the life of the forecasts are below replacement levels. (TFR is 2.01 for the district vs. 2.10 needed for replacement level)
2. Most non-college in-migration to the district occurs in the 25-to-39-year-old age groups.
3. The locally born 18-to-24-year-old population continues to leave the district, going to college or moving to other urban areas.
4. The primary factors causing the district's enrollment to grow in the short term is the presence of a wave of pre-school age children in the district and the continued in-migration of young families ages 25 to 34.
5. Changes in year-to-year total enrollment (particularly until 2030) will primarily be due to the size of the cohorts entering the school system (grades K and 1) in relation to the size of the cohorts leaving the system (grade 12).
6. As the existing young families begin to age and larger grade cohorts begin to enter into the school system, total elementary enrollment will begin to increase after the 2024-25 school year.
7. Even if the district continues to have an increasing level new home construction, the rate and magnitude of existing home sales will become the increasingly dominant factor affecting the amount of population and enrollment change.
8. Total enrollment is forecasted to increase by 425 students, or 4.9%, between 2013-14 and 2018-19. Total enrollment will grow by 467 students, or 5.2%, from 2018-19 to 2023-24.

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 all of the attendance areas in the school district at the same level. Some variables may affect different areas at dissimilar magnitudes and rates causing changes at varying points of time within the same district. The 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, housing composition, family structure changes 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 and attendance area's demographic composition, dynamics and rates 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 and attendance area level, have exactly the same demographic characteristics.

The manifest purpose of these forecasts is to ascertain the demographic factors and their magnitudes that will ultimately influence the enrollment levels in the district's schools. There are of course, other non-demographic factors that 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 school facilities that may serve students from outside the attendance area; state or federal mandates that dictate the movement of students from one facility to another (No Child Left Behind was 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 and magnitude 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 demographic and enrollment 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 10-year population forecasts for the DeKalb County 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 DeKalb County School District for school years 2015-2016 to 2020-21. Birth and death data were obtained from the Georgia Department of Public Health for the years 2010 through 2019. The net-migration values were calculated using Internal Revenue Service migration reports for the years 2010 through 2018. The data used for the calculation of migration models came from the United States Bureau of the Census 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 3% of the households in the district (and any of the attendance areas) would have been included. For comparison 17% of the 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 for any geography with less than 60,000 people. Given the very large margins of error of many of the estimates in the 5-year ACS results for small areas, they are not used in these forecasts.

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 drop in the average household size in DeKalb County 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 2030. 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 over age 65 in any given area.

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 15% 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. While it is true that there has been an increase in the birthrates of women ages 30-34 years old, this increase has been offset by the persistent long-term decline in the fertility rates for women 15-19 years old.

The total fertility rate (TFR), the average number of births a woman will have in her lifetime, is estimated to be 2.01 for the total district for the ten years of the population forecasts. A TFR of 2.10 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 net in migration, to maintain the current level of population within the DeKalb County School District.

A close examination of data for the DeKalb County 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 DeKalb County 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 high out-migration occurring in the locally raised 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 non-college in-migration occurs in the 25-39 age groups (bulk of which is from areas within 100 miles of DeKalb County) primarily consisting of younger adults.

As DeKalb County is 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 DeKalb County School District and its attendance areas will remain the same through the year 2030.

Below is a list of assumptions and issues that are specific to the DeKalb County School District. 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 DeKalb County School District assume that throughout the study period:

- a. There will be no substantial economic recovery in the next 18 months and the national, state or regional economy does not go into deep recession at any time 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 4.5%;
- c. The rate of mortgage approval stays at 2015-2020 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 2015-2019 average of DeKalb County for any year in the forecasts;
- f. All currently planned, platted, approved and permitted housing developments are built out and completed by 2029. All housing units constructed are occupied by 2030;
- g. The unemployment rates for DeKalb County and the Greater Atlanta Metropolitan Area will remain below 8.5% for the 10 years of the forecasts;
- h. The rate of students transferring into and out of the DeKalb County School District will remain at the 2015-16 to 2019-20 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 DeKalb County will remain viable;
- l. 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. The district has at least 8,000 existing single-family home sales annually between 2020 and 2030;
- o. There is no major expansion or contraction in any of the district's group quarters population.
- p. Private school and home school attendance rates will remain constant;
- q. The rate of foreclosures for commercial property remains at the 2015-2019 average for DeKalb County;
- r. The State of Georgia does not change any of its current laws or policies regarding Charter Schools, School Vouchers or inter district transfers;
- s. The intra district student transfer policy remains unchanged over the next 10 years.

If a major employer in the DeKalb County or in the Greater Atlanta Metropolitan Area (particularly the eastern suburban areas) opens, 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 DeKalb County 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 born 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. Given that the district will have progressively larger graduation classes over the next 10 years, (the class of 2025 should be approximately 10% larger than the class of 2020) the number of out migrants from the district will increase.

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 forecast 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 DeKalb County School District and its 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 challenging 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 DeKalb County School District and its nine elementary attendance center districts are classified as "small area" populations (as compared to the population of the state of Georgia or to that of the United States). Small area population forecasts are more complicated to calculate because local variations in fertility, mortality, and migration may be more irregular than those at the regional, state or national scale. Especially challenging is the forecast of the 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 DeKalb County School District and its 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 DeKalb County 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 twelve. This procedure 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.

RESULTS AND ANALYSIS OF THE POPULATION FORECASTS

From 2010 to 2020, the populations of the DeKalb County School District, DeKalb County, the state of Georgia, and the United States are estimated to have changed as follows: the DeKalb County School District increased by 8.3%, DeKalb County grew by 9.5%, state of Georgia increased by 10.8%, and the population of United States increased by 8.4% (see Table 1).

Table 1: Forecasted Population Change, 2010 to 2020

	2010	2015	2020	10-Year Change
United States	308,000,000	322,000,000	334,000,000	8.4%
Georgia	9,687,653	10,287,400	10,730,500	10.8%
DeKalb County	692,443	736,200	758,100	9.5%
DeKalb County School District	644,266	672,670	697,520	8.3%

A number of general demographic factors have influenced the growth rate of the DeKalb County School District during this period and over the next 10 years:

- The Baby Boom generation is now primarily in their 60s and 70s. They are for the most part "empty nest" households and will start downsizing their home in larger numbers over the next decade;
- The population in childbearing ages (women ages 15-45) have and will continue to experience a slight decline in fertility rates;
- The locally born 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;

- The district will experience continued increase in housing stock over the next decade but at a slower rate of increase than in past years. Existing home sales will continue make up at least 80% of the local housing market;
- The primary migration feeder into the district will continue to be from Fulton County.

The DeKalb County School District will continue to experience significant 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.

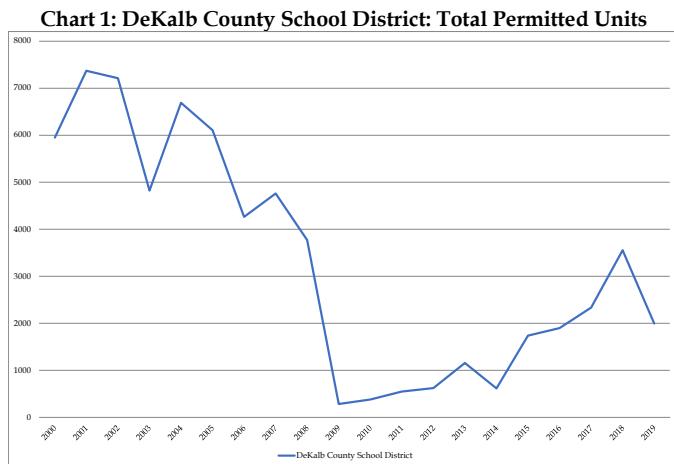
From 2010 to 2015, the district's population is estimated to have increased by 28,404 or 4.4%, to 672,670. From 2015 to 2020, the population is estimated to have continued to increase by 24,850 persons or 3.7%. During the last ten years, 65 of the district's 68 elementary attendance areas increased in population with the growth rates ranging from 39.3% in the Hightower ES area to 0.3% in the Pine Ridge ES area. The Briar Lake ES, Brown's Mill ES and Bob Mathis ES areas have experienced slight population decline. Among the Planning Regions, the growth rates for the last decade range from 15.7% in Region 1 to 4.3% in Region 3. (See Table 1 in the Appendix B for population forecast results of each Region and elementary attendance area).

While all elementary areas will see some amount of gross in-migration, (primarily in the 24-to-39 and the 0-9 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 and over age 70 homeowners that are downsizing their households. Consequently, most of the attendance areas will experience a modest reduction in their average household size.

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 80% of all births occur to women between the ages of 20 and 34. As the graduating seniors continue 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 slightly below the replacement level, the relatively small number of non-college women in the district ages 20-24 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 C for a graphic representation of the age distributions of the district and all of the attendance areas).

As a general rule of thumb, for every two seniors that leave the district, one new household must move into the district to replace the young adults that have left and to replace their lost potential fertility. Over the course of the forecast period, the average number of graduating seniors will be approximately 6,050 per year and at least 75% of them will move out of the district within three years of graduation. Using the general rule, approximately 2,200 new families will be required to move into the district every year or 22,000 new families for the ten-year study period to replace the graduating seniors and their lost fertility. It is forecasted that the impact of the steadily increasing out-migration of young adults will continue to be mostly offset by young family (25-39-year-old householders) in-migration and that the total number of births will continue to decline slightly during the 10-year life of the forecasts.

Clearly, the dominant factor that has affected the population growth rates of the DeKalb County School District over the last 20 years has been the number, pace and cost of existing home sales and the number of new housing units constructed. However, the dynamics of this in-migration flow are more complex. There is a common misconception that any changes in the economy, housing market or transportation system will 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 DeKalb County School District has been experiencing an average of approximately 5,500 new housing units constructed per year from 2000 to 2008. From 2009 to 2019 the district has been averaging about 2,500 new housing units per year. There has been a similar rate of decline in the number of existing home sales over this period as well.



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 children (particularly elementary) into the district, they also bring many preschool age children as well. Consequently, the full impact of the growth in existing home sales and 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 a key issue since the number of births in the DeKalb County School District is insufficient to maintain current enrollment levels.

A further point to consider is the fact that the households that moved into the district during the 2000-2007 housing boom have for the most part become "empty nest" households (see Chart 1). These issues of the district's aging population and the growing number of "empty nest" households are present particularly in attendance areas like Rock Chapel ES and Princeton ES. Many of the district's householders, who moved into the district between 2000 and 2007 have seen their children graduate and go off to college. 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 trend is particularly strong in the elementary areas of Regions 3 and 4. And examination of the population pyramids (see Appendix C) showed that even by 2010, the majority of the home owners in many areas were already in their 40s and early 50s.

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. Householders that are in their 40s in 2020 have for the most part completed their family formation and will add no additional students to the district as long as they are residents of their current housing units. This is a primary reason the population growth in area such as Region 3 has been lower than the district averages the last 10 years.

As homeowners continue to age in place, area with a rapidly increasing population of householders over the age of 70 will begin to see more housing "turnover". This process happens when the current homeowners decide to downsize and move to a different residence. In most cases they sell their home to young families with school age or pre-school aged children. Thus, areas that may have been experiencing low or declining elementary enrollment the past 10-15 years, now start seeing modest increases. Elementary areas such as Oak Grove ES, Midvale ES and Livsey ES should begin experiencing slight increases in enrollment after 2025 as the number of existing homes in the area that are for sale begin to increase. Considering that existing home sales comprise more than 80% of the district's housing market, this dynamic is a major factor influencing the future population and enrollment trends of all attendance areas.

Note as well the slight increase in the median age of the population in the DeKalb County School District and all of its attendance areas (see population forecasts in the Appendix B for the median age for each forecast year). The district as a whole will see the median age of its population increase from 34.1 in 2010 to 37.6 in 2030 (an increase of 3.5 years in median age is significant for an area that has over 40% of its

households as rentals). This rise in median age is primarily due to three factors: the locally raised 18-24-year-olds leaving the district, a high proportion of their now "empty nest" parents staying in their existing households into their 70s; and the slight decline in the number of births. (See Table 4 in Appendix A)

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 other parts of the district (usually into rental units); the increase in single-person households; and divorce, with both parents remaining within the district.

RESULTS AND ANALYSIS OF THE ENROLLMENT FORECASTS

Note on the effects of COVID-19 on the district's enrollment trends: The Dekalb Public School District saw its total K-12 enrollment drop by 5,330 from fall 2019 to fall 2020. Clearly, the district did not experience a massive out-migration of household and students, but rather a significant number of them choose other educational options. These included, but are not limited to: private schools, home schooling, "Red Shirt" fall 2020 Kindergarten students (having them start with the fall 2021 cohort) and schools out of the district. However, not all of this enrollment decline was due to COVID-19. A sizeable proportion (estimated to be approximately 1,000 students) was due to the reduced level of in-migration the district experienced primarily due to the reduced number of home sales in the summer of 2020. For the purposes of these forecasts, we assume that 80% of the COVID-19 student loss will return in the fall of 2021 if the district returns to full time, in-person instruction at that point.

Note on enrollment data cited: In the discussion of the enrollment data in the next three sections, all references to district level enrollments include all traditional (public PK-5th, 6-8th and 9-12th) and non-traditional facilities (charters, magnets, specialty schools, etc.) Discussions of school or planning area enrollments are referring to traditional PK-5th, 6-8th and 9-12th only.

Elementary School Enrollment (PK-5th)

The total elementary enrollment of the district is forecasted to increase from 44,947 in 2020-21 to 45,903 in 2025-26, an increase of 956 students, or 2.1%. From 2025-26 to 2030-31, elementary enrollment is expected to grow by 2,007 students to 47,910. This will represent a 4.4% increase over the five-year period. Out of the 68 elementary attendance areas, 57 will experience a net increase in enrollment over the next ten years (see Table 5 in the Appendix A). All seven of the planning regions will see their elementary enrollments increase between 2020 and 2030, ranging from 11.8% in Region 5 to 5.7% in Region 1.

The reason for this modest growth in elementary enrollment is the convergence of the effects of three factors, all reaching their peak influence roughly by 2027. These factors are the existence of a "wave" of population in the pre-school ages, the reversal of cohort sizes in the elementary grades and the increasing rate of over 70-year-old "empty nest" households turning over. Each of these factors will contribute in part to the growth in elementary enrollment until 2030. It must be noted that the magnitude and pace of these factors will vary by planning region and attendance area.

There is currently a wave of population in the district's pre-school population compared to the existing 6 to 10-year-old population. An excellent example of this impact of the trend is shown in the district's birth data by year (See Table 7 in Appendix A). The population at age 6 is closely related to the combined 1st grade enrollment of the public and private students in the district (as it is for all ages and elementary grades). However, note the relatively higher level of population in the 0-4 age groups, particularly when compared to the cohort sizes of the 5 to 9-year-old population. This trend is an indication of the average proportion of households in each area that will produce elementary age students over the next five years. Even without a substantial in-migration of young families with children under the age of five, this "pre-school cohort" will result in growth in elementary enrollments over the next five years. Indeed, even with an uptick of out-migration to the areas with large numbers of single-family homes, these pre-school age cohorts are large enough to cause and increase in elementary enrollment.

Secondly, over the last several years, one of the main reasons elementary enrollment was decreasing 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 5th grade. This enrollment decline was due a large number of students ageing through the school system and not because of an increase level of out-migration of kindergarten through 5th grade students. Over the next five years, the incoming kindergarten grade cohorts will average 7,260 students in size, whereas the outgoing 5th grade cohorts have averaged only 7,150 (over the last five years incoming kindergarten grade cohorts averaged 7,500 students and outgoing 5th cohorts averaged 7,782). As long as this imbalance continues (and it is forecasted to do so for at least the next five years) there will be growth in the elementary grades.

The third factor is the rise of the number of empty nest households in the district. In 2010 the district had 43.2% 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 as people aged and the households became "empty nest". Fortunately, this large bubble of now "empty nest" households, (particularly "empty" of elementary age students) will begin reaching their 70s during the life of these forecasts, particularly after 2025. Post 70-year-old households are the stage of life when most downsize, allowing new young families with children to move in. Thus,

area that had experienced declining enrollment over the last 15 years should stabilize and begin to see a modest level of growth, even if there is no additional housing unit construction.

The demographic factors that will become the most influential over the next ten years are: the slowing of the growth rate of "empty nest" households in the attendance areas; the number of sales of new and primarily existing homes; the rate and magnitude of existing housing unit turnover; the relative size of the elementary and pre-school age cohorts; and each area'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.

Attendance areas that are currently experiencing a rise in "empty nest" households tend to be the same areas that are not the recipients of any large sustained new housing unit construction. Thus, attendance areas such as Austin ES will see net declines in elementary enrollment. While these areas will continue to see net in-migration of families, it will not be at a sufficient rate to maintain current attendance levels.

As more elementary attendance areas become completely dependent upon existing home sales to attract new families, the overall elementary enrollment trend of those areas will decline. Attendance areas such as Henderson Mill ES will see their elementary enrollments peak by the middle of the decade and then slowly 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) enrollments will continue to see slow growth, if the levels of gross in-migration are maintained. Only areas that experience a significant increase in new housing unit construction (particularly of rental units) will see a level of sustained enrollment increase in an area does not have a strong level of housing turnover.

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 homes, 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.

Yet equally important are the factors of housing turnover and "family formation". Areas with existing homes that have a large proportion of housing units owned by their residents and have a large proportion of their homeowners age 65 or older are prime candidates to experience a growing amount of housing turnover. In the DeKalb County School District an area such as Smoke Rise ES is an excellent example of this trend. This area, which would normally see a larger drop in its enrollment numbers as the number of households with school age children decline, will see more moderate changes in its student populations as young families move into formerly "empty nest" housing units.

Additionally, areas that are characterized by the relatively high percentage of rental housing units and large concentrations of young adults tend to have more stable population distribution and enrollment trends (unless, there is a significant amount of new housing unit construction). In these cases, young adults or the newly married, move to these areas and establish households. Because the population is in prime child-bearing ages, these areas also have both a high absolute number of births and a higher than the district average birth rate. Later, as family size increases, these families often move to usually moderately priced single-family homes in other parts of the school district.

Consequently, the Stone Mill ES and other sub-attendance areas with similar characteristics, serve as feeder areas for outlying attendance areas in the district. This internal migration flow is far more important in determining future enrollment trends than the construction of new single-family homes, as an average of eight existing homes are sold for every new home built. Indeed, a close examination of the year-to-year trends in the family formation areas will serve as an excellent bellwether for short- and medium-term changes in areas that depend on in-migration for enrollment growth.

This internal migration flow of families and students is an often overlooked factor when attempting to determine the pace and magnitude of the district's (and attendance areas) enrollment trends. Frequently, many residents of the district assumes that most, if not all, of the families moving into newly constructed or recently sold existing housing units in an area are moving in from outside of the district, when in reality, a substantial proportion of them are moving from the other parts of the district, particularly if they are moving into single family detached homes. Thus, there tends to be an over expectation of enrollment growth.

Middle School Enrollment (6-8th)

The total middle school enrollment for the district is forecasted to decline from 21,682 in 2020-21 to 20,447 in 2025-26, a 1,235 student or -5.7% decrease. Between 2025-26 and 2030-31 middle school enrollment is forecasted to remain virtually unchanged, increasing 5 students or 0.02%. All planning regions, except Region 1, will see a net decrease in middle school enrollment, ranging from -26.1% in Region 6 to 2.6% in Region 2. Region 1 will experience an 11.0% increase over the next 10 years. The differences 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 tends deviate from those of the elementary grades.

There are currently smaller 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 increase the overall middle school enrollment level. Note how the size of the incoming 6th grade class is usually larger than the previous year's 8th grade class, which has now moved on the high school. As long as this "deficit" in the enrollment pattern exists, there will be to some degree, a

decrease in the overall middle school enrollment at least until the 2028-29 school year.

After the 2028-2029 school year, this cohort trend reverses. There will then be larger grade cohorts entering the middle school grades compared to those leaving. The result is a modest increase in overall middle school enrollment until at least 2030.

The enrollment trends in middle school attendance area are basically a reflection of the demographic composition of their elementary feeder areas. If the feeder schools are experiencing slow growth, or a decline in enrollment, these trends are then seen in the middle school five to seven years later. Thus, the enrollment declines that many parts of the district saw the last five years in the elementary school are now affecting the middle schools.

The exception here, of course, is the middle schools in Region 1. This area has seen a substantial increase of new housing units construction and brisk existing home sales. Consequently, the elementary feeder areas in the region have experienced sustained growth in the elementary grades. These large K-5 cohort are larger than those currently in grades 6-8 and will result in larger middle school enrollment for at least the next six years.

High School Enrollment (9-12th)

Enrollment at the high school level is forecasted to grow from 26,841 in 2020-21 to 27,701 in 2025-26, an increase of 860 students or 3.2%. After 2023-264 school year, the high school enrollment rate will begin to decline. The net result for the five-year period 2025-26 to 2030-31 will be a decrease of 1,508 students to 4,174 or -5.4%.

As was seen in the middle school enrollment trends, the high school enrollments in the planning regions will show a net decline for the next 10 years except for Region 1. These 10-year declines range from -32.2% in Region 6 to -0.6% in Region 4. Region 1 will see a 25.8% increase over the course of the decade.

The aforementioned effects of changes in cohort size on middle school enrollment are also affecting the growth patterns of the high school population after 2024. Over the next four years, the larger grade cohorts that are in the middle school enrollment begin to enter high school. Until the wave of students passes through the high school grades, there will be continued growth at most of the district's high schools.

After 2024, this trend reverses. The smaller grade cohorts, currently in the late elementary grades, will begin to enter 9th grade. This will result in the overall enrollment at most of the district's high schools to decrease at least until 2030.

It is important to note that the vast majority of this future high school enrollment growth will be a result of students aging into those grades. Specifically, students who already live in the district (and not in-migration of students ages 14 to 18) will be the primary cause of the forecasted increase in high school enrollment. Additionally, as was mentioned earlier, these forecasts represent the demographic

changes that will affect high school enrollment. Any changes in the district's student transfer policy and/or changes in special high school level programs will need to be added or subtracted from the forecast result.

However, like most school districts in the United States, the DeKalb Public School District will see a significant "bump" in their 9th grade enrollment compared to the previous year's 8th grade enrollment. This is due primarily to non-public school students returning to the public system for high school. These students are not in-migrants to the district, but rather residents who have been living in the district but attending non-public schools. Many of these students return for programs or activities not offered in many non-public high schools. Additionally, many return due to financial consideration, since the tuition at private high schools is much higher than middle school or elementary school tuition.

High school enrollment is the most difficult of all the grade levels to project. The reason for this is the varying and constantly changing dropout rates, particularly in grades 10 and 11. For these forecasts the dropout rates at the high school were calculated for each grade over the last five years. These five-year averages were then held constant for the life of the forecast. The effects of any policy changes dealing with any school's dropout rates, program placement or reassignment of former students to new grade levels will need to be added or subtracted from the forecast results.

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