DCSD Long-Term Enrollment Forecast
December 2019

Planning Department

1. Introduction

To better understand and plan for the future of enrollment in DeKalb County School District, the Planning Department is updating the long-term enrollment forecast to include Fall 2019 enrollment data. The new DCSD Long-Term Enrolment Forecast considers the most recent trends and school programing to forecast enrollment for each school year from the Fall of 2020 through the Fall of 2026. The ultimate purpose of the DCSD Long-Term Enrollment Forecast is to inform decisions for the fair allocation of resources and the provision of an excellent learning environment for the students of DeKalb County School District. This document gives a short explanation of the methods used to calculate the DCSD Long-Term Enrollment Forecast. The most recent long-term forecast was completed in December 2019.

2. Methodology

The forecast uses a method of population forecasting called "cohort-survival analysis". In this method, future enrollment is forecasted based on historic matriculation patterns from grade to grade, birth rates, future housing development, and historic patterns of school-choice enrollment. The forecast is built using the following process:

1. **Mobility** – A *Mobility Rate* (also known as a *survival rate)* refers to the ratio of students enrolled in a grade (residing in a given school's attendance area) to students enrolled one grade lower, and one year prior. The calculation is made for the first through twelfth grades for students living in each attendance area and back several years. The average mobility rate[1] is then multiplied by the base or previous year's count of students in a particular attendance area and grade to

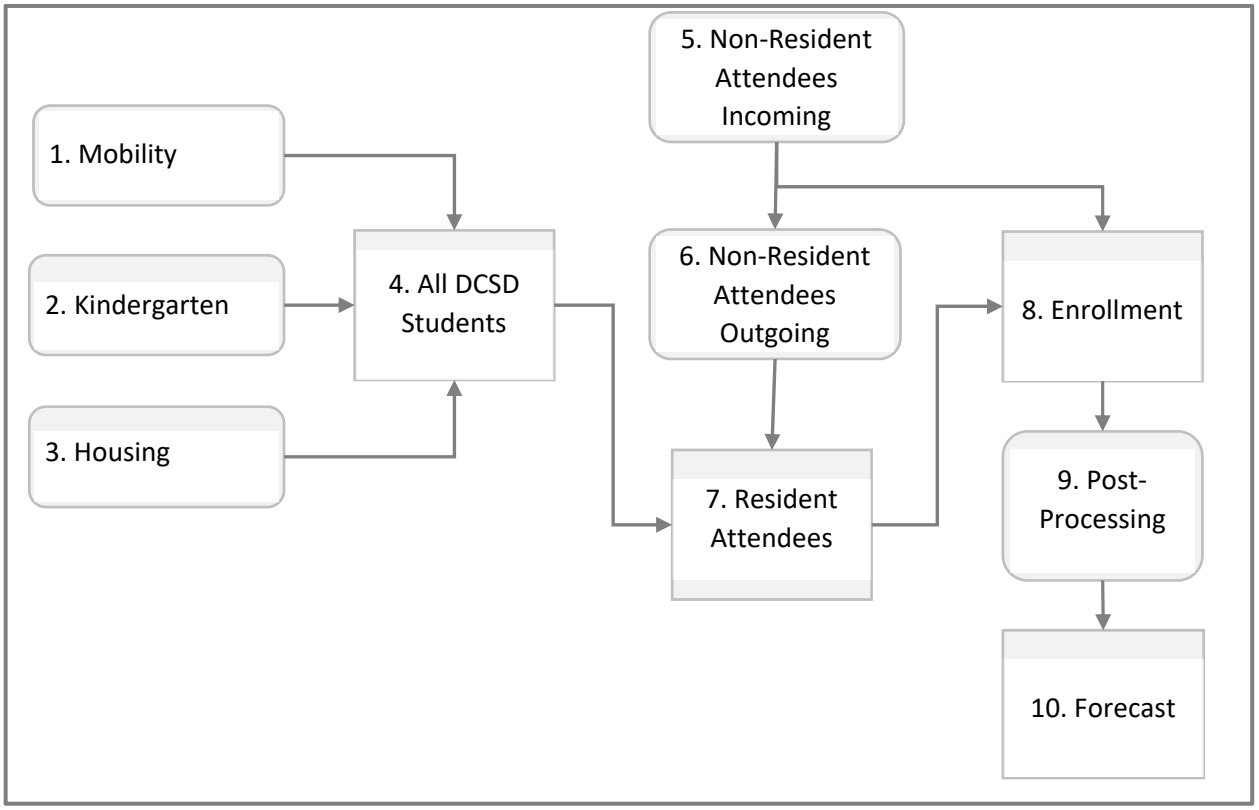


Figure 1 - Forecast Process

[1] The December 2019 forecast employs a varying average for each forecast year, meaning for each additional future forecast year an additional year of historic mobility data were included in the average.

estimate the next year's resident student population in that grade and attendance area.

2. **Kindergarten** - Kindergarten has no previous grade from which to draw mobility rates (pre-K is funding dependent, not population dependent and therefore unreliable as an indicator for future kindergarten population). Therefore, the kindergarten forecast uses live births six years prior as the primary source to forecast the future kindergarten population.[2] The average ratio of DCSD kindergarteners residing in each elementary attendance area per 100 births in that attendance area was calculated for the previous three (3) years of data and multiplied by the births for each future forecast year.[3]
3. **Housing** – A housing development analysis allows expected future housing development to influence the forecast. DCSD receives regular updates from DeKalb County and from each of the municipalities in the District regarding plans for housing development. This information, along with third-party development data, is used to estimate the number of new units expected to be occupied in a given year. Historic rates of student enrollment by housing type and housing unit (or *yield rates)* are used to estimate the number of students to expect from new housing development.
4. **All DCSD Students** – The first three steps of the forecast estimate the number of students expected to reside in an attendance area based on available data. Students who attend the school to which they are zoned, are referred to as "resident attendees." Students enrolled in a school other than their zoned school are referred to as "non-resident attendees." To forecast enrollment, non-resident attendees must be added to their attending school forecast (incoming) and removed from their zoned-school forecast (outgoing).
5. **Non-Resident Attendees, Incoming** – The historic non-resident incoming enrollment at each school is used to forecast non-resident incoming enrollment in future years. The forecast method for each school is selected based on its specific enrollment policies and its historic enrollment patterns.

[2] "Six years prior" was used because the live birth data used was from September 2 to September 1 of each year, corresponding to the eligibility period for kindergarten. Because a student must be in their sixth year of life (at least five years old), kindergarteners counted in October of each school year would have to have been born during the eligibility period beginning six years prior.

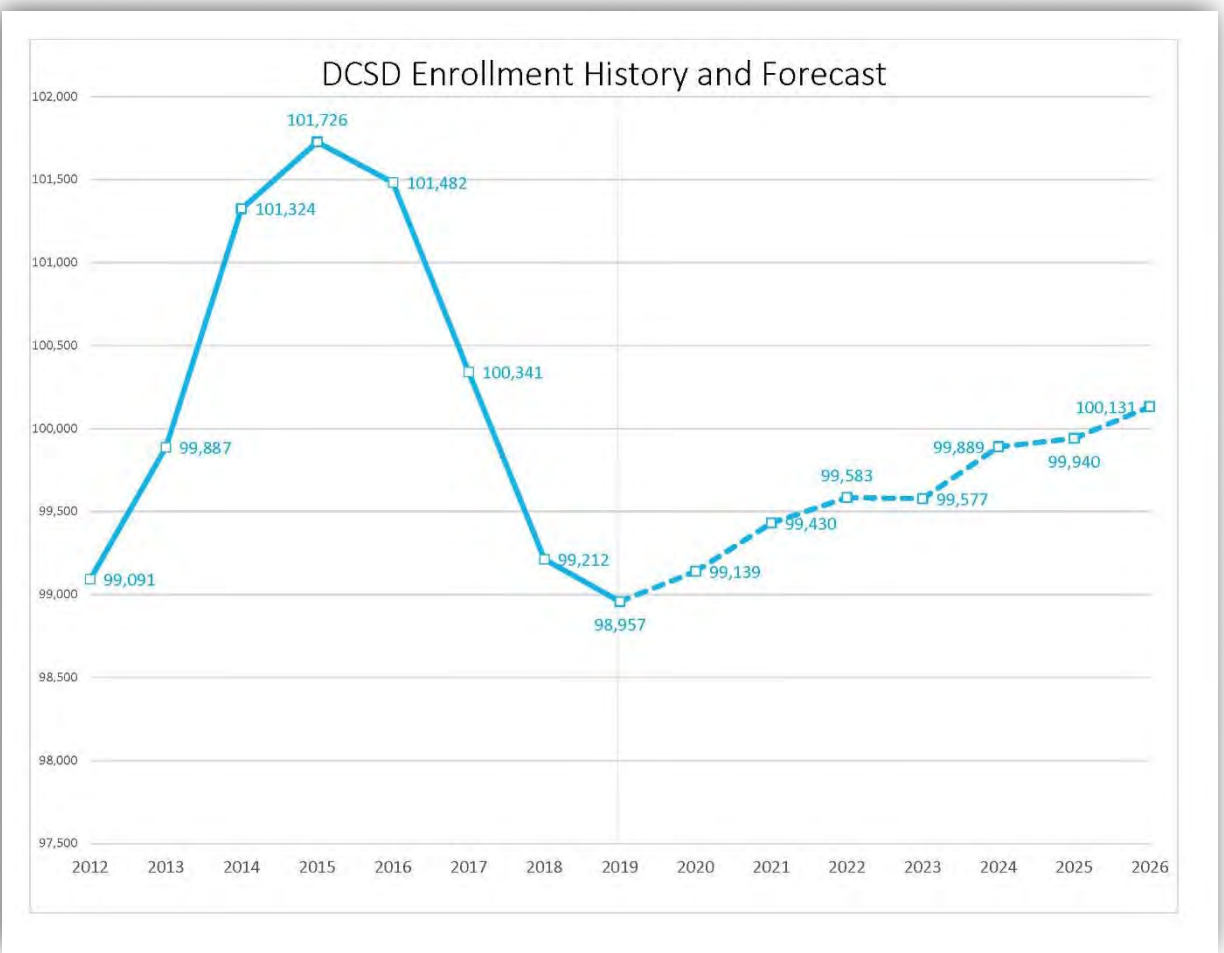
[3] Kindergarten enrollment in several schools has low correlation with the number of births. In these cases, future kindergarten enrollment was interpolated using a variety of methods.

6. **Non-Resident Attendees, Outgoing -** The non-resident attendees outgoing (NRO) is calculated using the most recent year of enrollment data (2019). The number of non-resident attendees in each grade residing in each attendance area is divided by the district total number of non-resident attendees in each grade. This ratio is then multiplied by the total non-resident students by grade derived from the non-resident incoming forecast (see #5) to forecast the number of non-resident outgoing students for each attendance area.
7. **Resident Attendees –** Resident attendees by grade in each elementary, middle, and high school attendance area are forecasted by excluding the total number of non-resident attendees outgoing for each forecast year.
8. **Enrollment –** The Non-Resident Attendee Incoming forecast and the Resident Attendee forecast by grade for each school are added together to generate the Preliminary Enrollment Forecast.
9. **Post – Processing –** The forecast model does not consider programmatic changes such as opening or closing schools, changing the location of special programs, etc. To account for this, changes must be made in post processing. To keep the overall forecast the same, all changes must account for both enrollment increases at particular schools and enrollment decreases from where those students are expected to be coming from.
10. **Forecast –** The final result is a forecasted enrollment for each grade at each school for each forecast year.

3. Results of the DCSD Long-term Enrollment Forecast

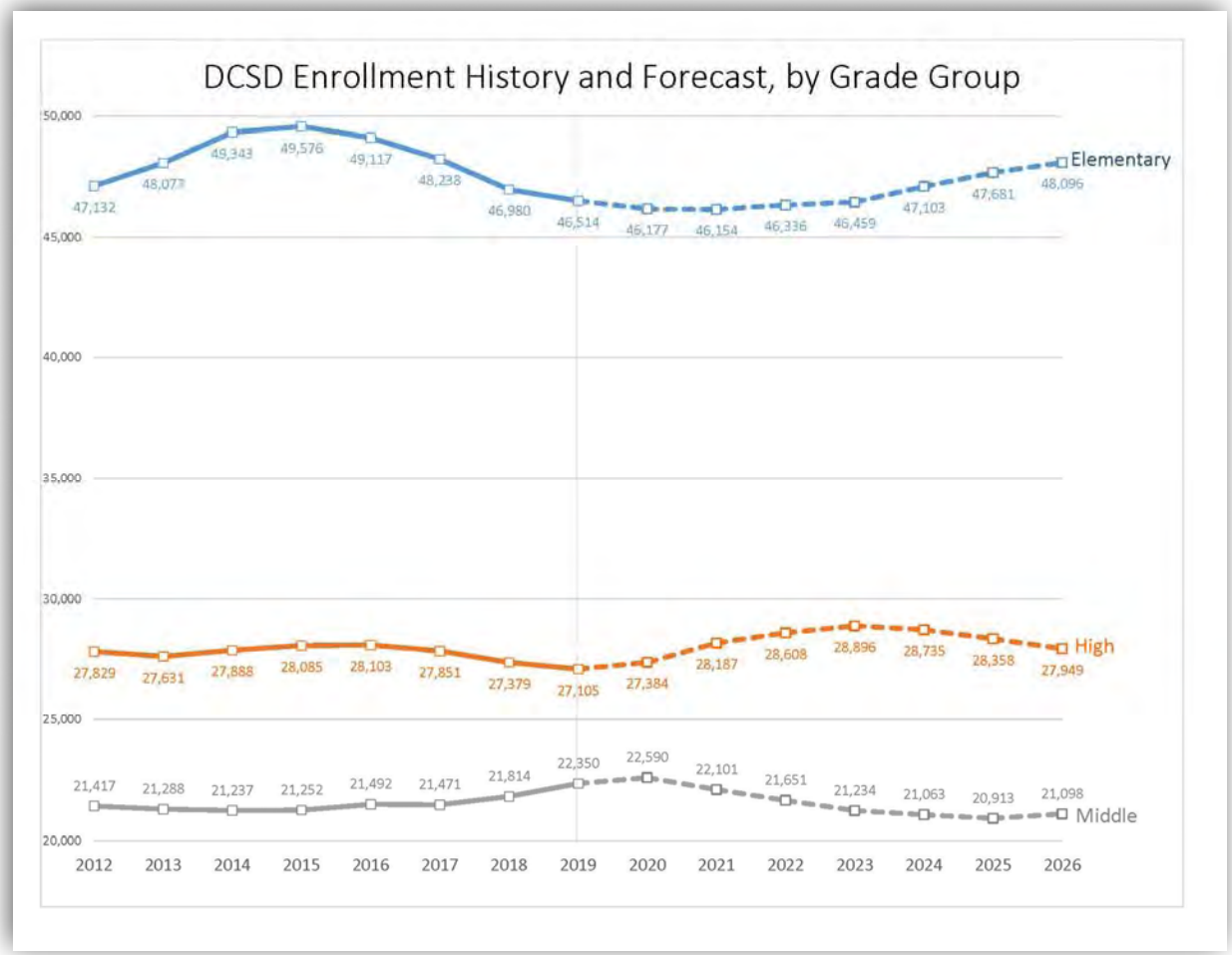
Overview

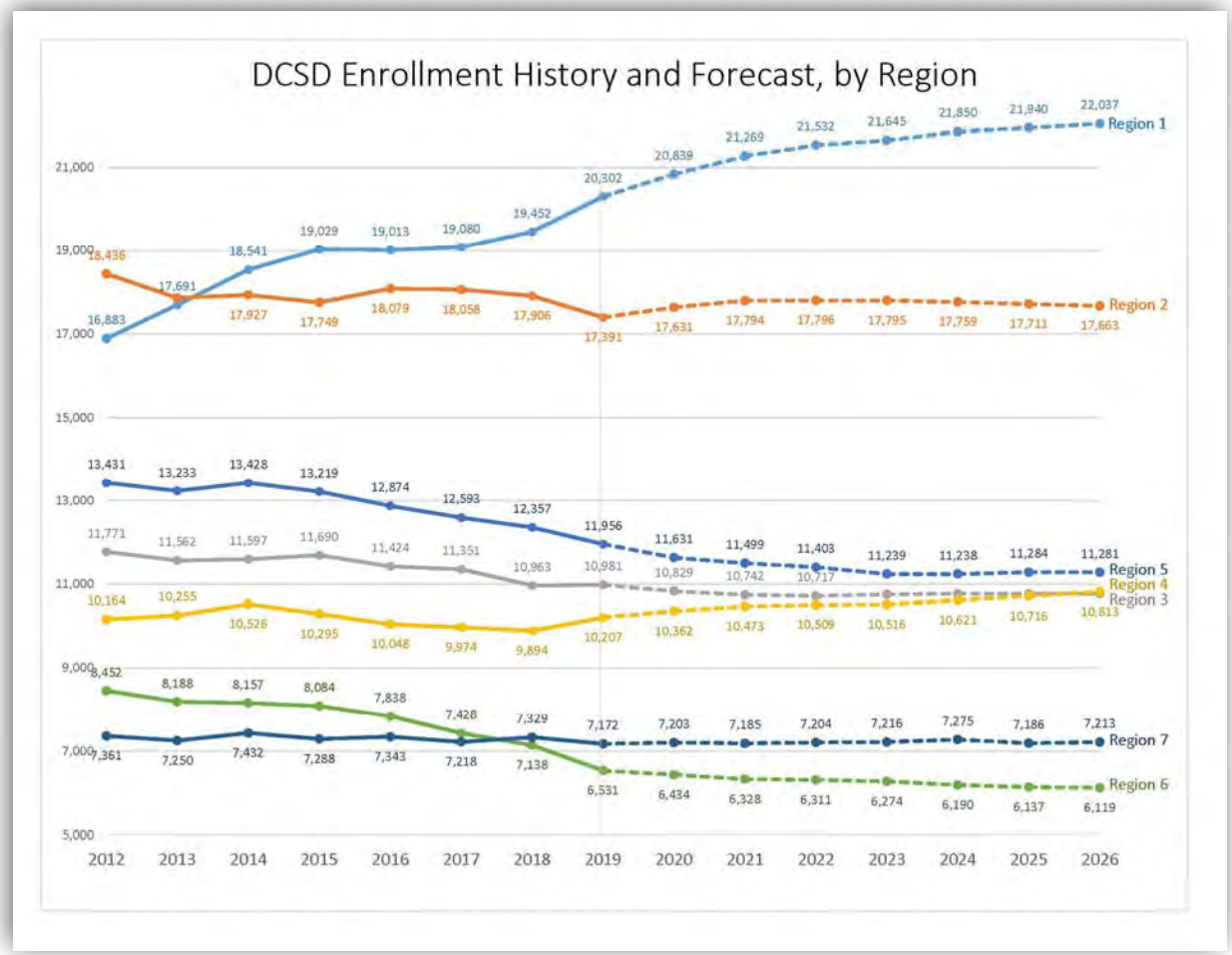
Enrollment for Fall of 2020 is expected to be 99,139 students, an increase of 182 students from Fall of 2019. DCSD Enrollment grew from 99,091 in the Fall of 2012 to a peak of 101,726 in the Fall of 2015. Enrollment began to decrease in the Fall of 2016 and continued to decrease in the Fall of 2017 and 2018 before falling to 98,957 in the Fall of 2019. In the DCSD Long-Term Forecast, enrollment is expected to increase gradually to 100,131 enrolled in 2026, 1,174 more students than in Fall 2019 (+1.2%).



Grade Groups

Elementary school enrollment (K-5) is expected to increase from 46,514 in 2019 to 48,096 in 2026 (+3.4%). Middle school enrollment is expected to decrease from 22,350 in 2019 to 21,098 in 2026 (-5.6%). High school enrollment is expected to increase from 27,105 in 2019 to 27,949 in 2026 (+3.1%). Elementary school enrollment peaked in 2015 at 49,576 students. As elementary students matriculate into the upper grades, middle-school enrollment is expected to peak in 2020 and a high-school enrollment expected to peak in 2023.



Regions

Enrollment in Region 1 is expected to increase from 20,302 in 2019 to 22,037 in 2026 (+8.5%). Enrollment in Region 2 is expected to increase slightly from 17,391 in 2019 to 17,663 in 2026 (+1.6%). Enrollment in Region 3 is expected to decrease slightly from 10,981 in 2019 to 10,772 in 2026 (-1.9%). Enrollment in Region 4 is expected to increase from 10,207 in 2019 to 10,813 in 2026 (+5.9%). Enrollment in Region 5 is expected to decrease from 11,956 in 2019 to 11,281 in 2026 (-5.6%). Enrollment in Region 6 is expected to decrease from 6,531 in 2019 to 6,119 in 2026 (-6.3%). Region 7 is expected to increase slightly from 7,172 in 2019 to 7,213 in 2020 (+0.6%).