



Enrollment Forecasts/Demographics Subcommittee
of the Long-Range Educational Facilities Plan Work Group

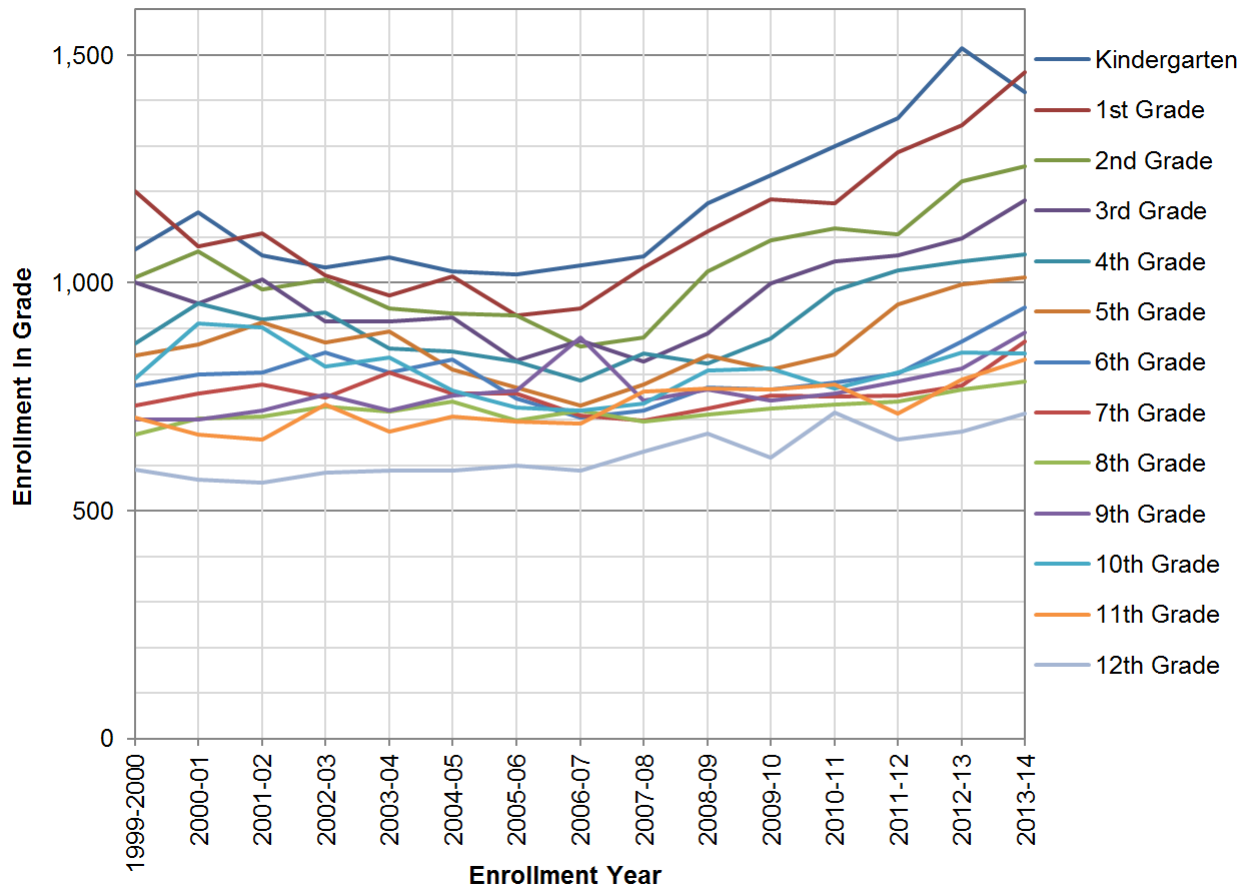
Enrollment Research Topic
Cohort Survival Rate

Background

The cohort survival rate is the ratio of the number of students enrolling in a grade this year to the number of students that were in the earlier grade the previous year. For example, the 2013 cohort survival rate for kindergarten to first grade is the number of 2013 first grade students divided by the number of kindergarten students in 2012. The number is commonly expressed as a percentage.

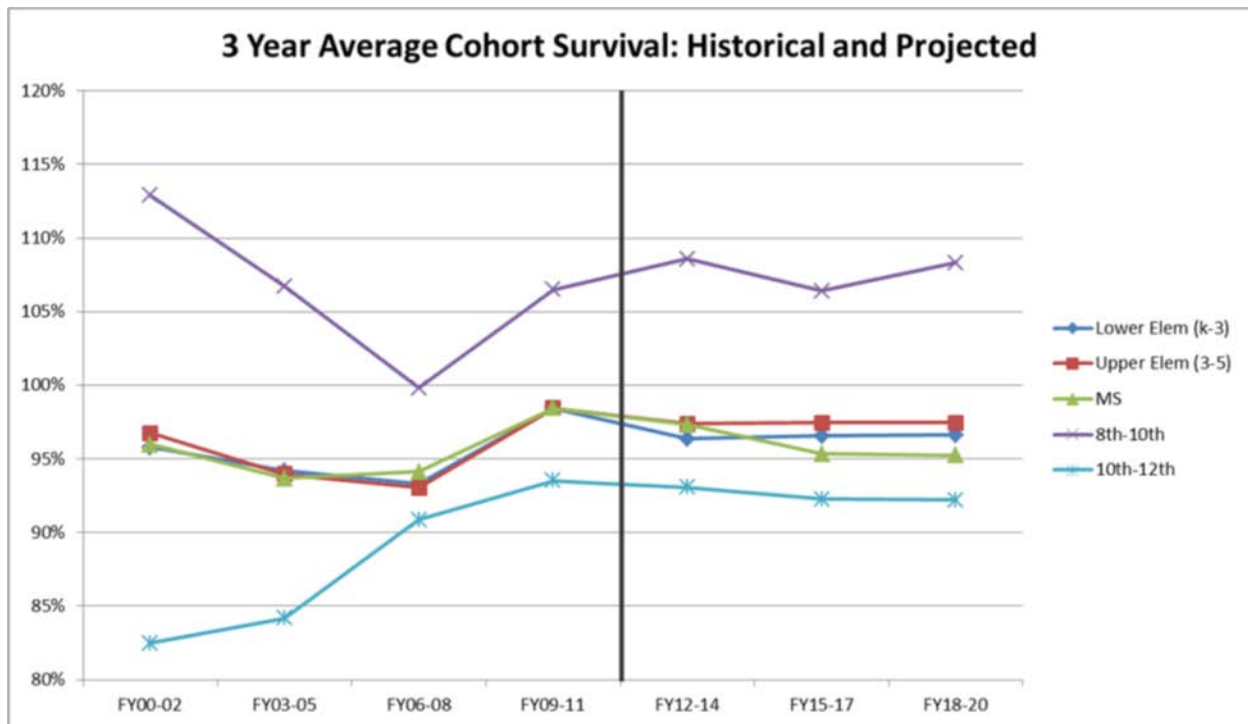
The graph below shows ACPS enrollment by grade during the years of declining enrollment from 2000 to 2006 and the recent rapid increases in enrollment since 2007. It is easy to see the increases in each elementary grade that track the increases in the earlier grade the previous year. Thus enrollment in first grade began a rapid rise in 2007, followed by second grade in 2008, third grade in 2009 and so on. This pattern shows the effect of cohort survival from increases in the early grades pushing up enrollment throughout the system over time.

ACPS Enrollment By Grade, 1999 - 2013



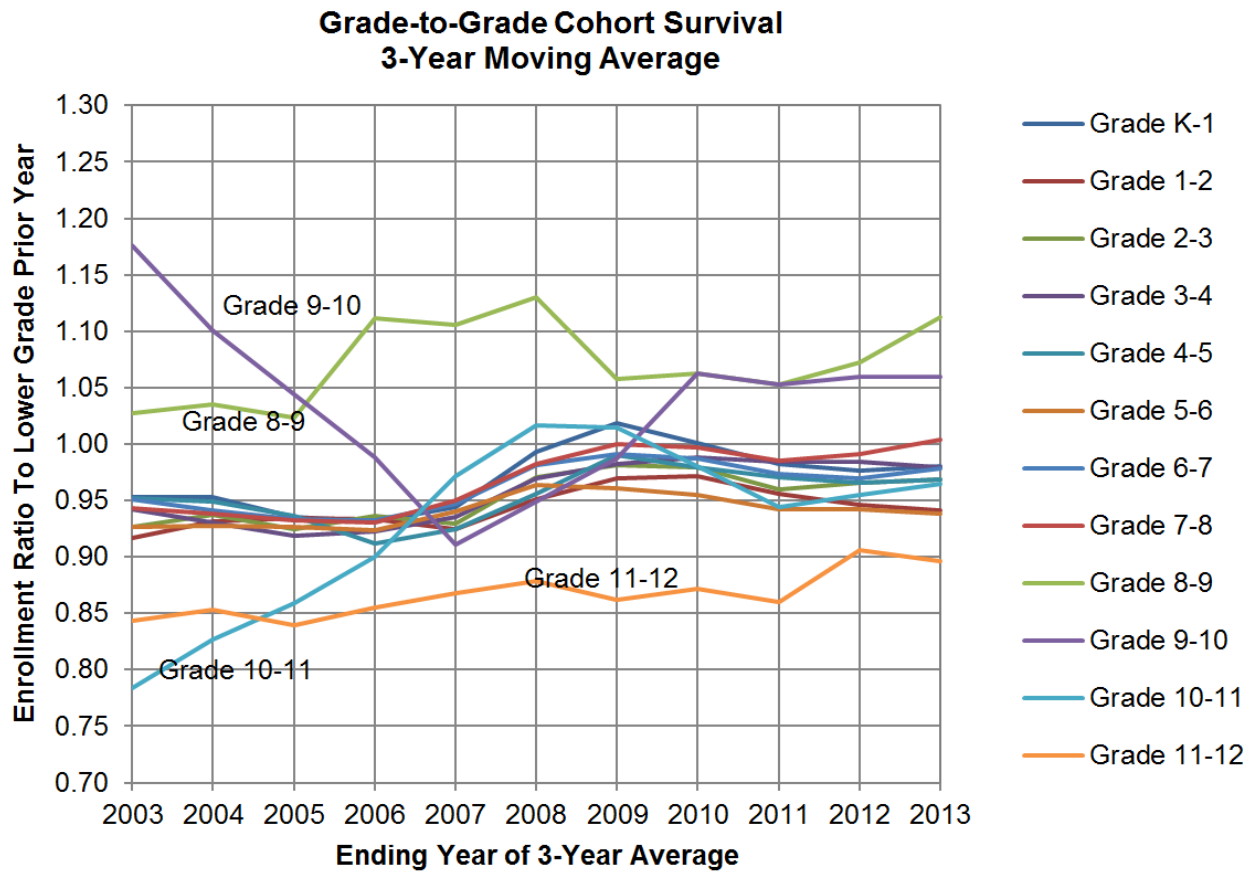
Methodology

The City and School Division measured the historic cohort survival rate at which students move from one grade to the next, by grade level, by year, by attending school, by neighborhood school and by individual student. In addition, staff analyzed contributing factors to this variable including established trends, new programmatic initiatives, and neighborhood schools. Unlike the dropout rate, which is based on records of individual students, cohort survival tracks aggregate numbers of students.



Findings

Alexandria's cohort survival rate for elementary and middle school grades is almost always less than 100%, reflecting smaller populations in each age cohort in the city through high school age. In high school, cohort survival rates for 9th and 10th grades are typically higher than 100%, reflecting students entering public school from private schools. The decline in student population by grade is generally considered to be a result of the market demand for Alexandria's housing stock, which is further described in the kindergarten capture and student generation rate summaries.



The graph above shows the 3-year moving average of cohort survival rates for all grades since 2003, reflecting the average of rates since 2001. The cohort survival rate for most grades reached a recent minimum in 2005 or 2006, reached historic highs in most grades from 2007 to 2009, and has stabilized at levels somewhat lower than these peaks from 2010 through 2013. The low cohort survival rate reached in 2006 of approximately 92% for elementary grades means a loss of 8% of students at each grade level, resulting in a 9th grade enrollment about half that of a kindergarten enrollment. The recent cohort survival rates of closer to 97% mean in the long term a 9th grade closer to three-quarters the size of the entering kindergarten class each year.

These recent changes can be attributed to the same factors that resulted in similar changes in the kindergarten capture rate over the same period. The combination of the increase in the cohort survival rate, city birth rates, and the kindergarten capture rate has resulted in enrollment growth that is substantially outpacing overall growth in population and housing units in the city.

Grade	2010	2011	Average Cohort Survival			
			Elem.	Middle	High	
K	118	121				
1	110	116				
Cohort survival from kindergarten to 1 st grade		98%				
			Pre-2007	93.2%	93.5%	95.1%
			Post-2007	97.8%	97.6%	99.8%
			Difference	+4.6%	+4.0%	+4.7%

The figure above illustrates the concept of cohort survival and compares the average cohort survival rates within school levels before and after 2007.

Common trends supported by the data are the spike of students remaining and migrating into the school system at the high school level is likely to be explained by private school students transferring in to the public school system, since a number of private and parochial schools do not continue into the high school grades. Additionally, the ACPS increase of new students at the first grade level differs from other jurisdictions increase that occurs between K and first grade, and will continue to be monitored.

Summary

After analyzing both the historical student cohort survival rate and the other influencing variables a 3 year average cohort survival rate was used for the short term enrollment forecast. Expectations for cohort survival will also inform the long range enrollment forecast model.

Resources

Cohort Survival: ACPS annual enrollment statistics are the basis for cohort survival rate data by grade, year and school, which is then utilized with kindergarten capture estimates to project future enrollment.